AVISON YOUNG

Hearing Statement

Stone Hill Park Ltd. – Matter 10
Economic Development (Policies SP02-SP04 and E01-E03)

Issue 7 – Manston Airport

Q1. What is the justification for including reference to Manston Airport alongside policies related to the allocation of employment land? Are paragraphs 1.38-1.45 intended to represent supporting text to Policy SP04?

The Local Plan does not seek to protect the existing airport use, nor can it lawfully do so, as the Council's own up-to-date evidence base confirms that "airport operations at Manston are very unlikely to be financially viable in the longer term and almost certainly not possible in the period to 2031" (AviaSolutions Report, paragraph 2.5) the airport is very unlikely to be financially viable in the longer term and almost certainly not over the plan period. This evidence base comprises three separate reports from credible aviation experts AviaSolutions, two of which specifically respond to comments/concerns raised by third parties. This is consistent with the conclusions of our client's own expert aviation consultants, York Aviation (2019) and Altitude Aviation (2019), both of whom conclude that there is little prospect of the re-opening of Manston Airport being a commercially viable proposition over the plan period (see **Enclosures 1 and 2** respectively). The Council therefore correctly concludes that there is no evidence which justifies a policy which would safeguard the Site for aviation use and no such policy is proposed as to do so without evidence would be unsound and fail to meet the minimum requirements for a development plan.

The Council's intention is to replace the previous allocation of the former Manston Airport (SP05) with supporting text at paragraphs 1.38 to 1.45 however this is not appropriate or justified. The purpose of the supporting text or "reasoned justification" in the Development Plan is to explain and justify the approach set out in the policies contained in the document. As there is no policy in the document which relates to the former Manston Airport site there can be no policy basis for paragraphs 1.38-1.45.

Policy SP04 relates to Manston Business Park, a site adjacent to but not including the former Manston Airport Site. The proposed text cannot therefore justify or support Policy SP04.

Q2. What is the status regarding the proposed Nationally Significant Infrastructure Project? How does its timescales align with the Local Plan Examination?

A DCO has been accepted and must now be properly scrutinised and examined in accordance with a separate legislative process. The emerging Local Plan cannot 'prejudice' whether it is approved or not. Likewise, the Government has confirmed that the Local Plan must proceed and should not be delayed for the DCO process to be concluded.

The Regulation 19 version of the emerging Local Plan replaces Draft Policy SP05 (which allocated the former Manston Airport site for mixed use redevelopment including at least 2,500 homes) with supporting text which states the site is not allocated for any specific purpose to ensure that the NSIP-DCO process is not 'prejudiced'. There has not been a fair analysis of the development alternatives and no reasonable explanation has been given for rejecting Policy SP05. The DCO will be determined through a separate process and must meet all necessary tests under the Planning Act 2008 (as amended), which does not require presumption in favour of the development plan and does not apply s38(6) of the Planning and Compulsory Purchase Act 2004 in the same way that planning applications are considered, in order to be granted. The emerging Local Plan cannot 'prejudice' whether it is approved or not. Likewise, the Government has confirmed that the Local Plan must proceed and should not be delayed for the DCO process to be concluded.

Q3. What are the implications for the Plan should the Development Consent Order be approved?

Even if the DCO application is approved, which SHP consider remains unlikely, there is no evidence to suggest that the airport would re-open on any significant scale. As part of the Local Plan evidence base the Council instructed an

independent report on the Commercial Viability of Manston Airport (September 2016) by AviaSolutions (the AviaSolutions Report) (Appendix 8) which considered whether viable airport operations could be re-instated on the former Manston Airport Site and concludes that, even applying assumptions favourable to Manston Airport, "airport operations at Manston are very unlikely to be financially viable in the longer term and almost certainly not possible in the period to 2031" (paragraph 2.5). Following consultation on the Proposed Revisions to the Preferred Options Draft Local Plan, the Council instructed AviaSolutions to review and respond to the representations received concerning the future of the airport site and, in particular, the 2016 AviaSolutions Report. This took the form of the following two reports, which also comprise part of the local plan evidence base:

- Review of Azimuth & Northpoint Forecast for Manston Airport (August 2017), which considers the cases put forward for the re-opening of Manston Airport by Azimuth Associates and Northpoint on behalf of RiverOak Strategic Partners, and concludes that neither report puts forward a sufficiently credible case, nor provides the evidence, for AviaSolutions to change its views on the financial viability of Manston Airport; and

- Local Plan Representations Final Report (August 2017) by AviaSolutions, which likewise advises that Local Plan Representations do not make a credible case, nor provide the evidence for AviaSolutions' to change its views on the financial viability of Manston Airport. Based on updated market information since the publication of the 2016 study, they continue to advise that Manston Airport does not represent a financially viable investment opportunity under normal market conditions.

This is consistent with the conclusions of our client's own expert aviation consultants, York Aviation (2019) and Altitude Aviation (2019), both of whom conclude that there is little prospect of the re-opening of Manston Airport being a commercially viable proposition over the plan period (see **Enclosures 1** and **2** respectively). The overwhelming evidence is that there is no prospect that even should the DCO be granted, the airport would actually be delivered as conceived.

The implication of DCO application being granted would therefore be the continued sterilisation and underutilisation of the district's largest redundant brownfield site, while the District's housing needs are directed to un-sustainable greenfield locations which have not been demonstrated to be achievable, viable and deliverable over the course of the plan period.

Q4. What are the implications for the Plan should the Development Consent Order be refused?

Should the Development Consent Order be refused, and SHP's position is that it will indeed be refused, the Local Plan will have failed to properly plan for development needs in the District, prioritising the allocation of the District's best agricultural land on sites with insufficient evidence of deliverability, instead of supporting the comprehensive sustainable redevelopment of the District's largest redundant brownfield site.

Q5. If a Local Plan Review is required, is it clear to decision-makers, developers and local communities when this would happen? Is there a clear mechanism to ensure a timely review of the Plan, which currently refers to a 'minimum' period of 2 years?

Text at paragraph 1.45 states that "in the event that a DCO or CPO process is not accepted or granted, or does not proceed, the Council will need to consider the best use for this site, in the next Local Plan review after a minimum of two years." Putting to one side that this text has limited (if any) weight as it does not support any proposed development policy, the current wording does not provide sufficient certainty regarding the timing of when a Local Plan review must take place; it could be interpreted as requiring a review within 2 years or after a minimum of 2 years has elapsed.

Furthermore, it is inconsistent with the recent direction by the Secretary of State that a review of the Local Plan must take place 6 months after adoption of the local plan (Letter Rt Hon James Brokenshire MP, 28th January 2019). This action is intended to "ensure full and effective coverage of housing provision to give clarity to communities and developers about where homes should be built" (ibid).

Q6. Is it clear how a decision-maker would react to a proposal for new development at Manston Airport prior to a review of the Plan?

The Local Plan does not seek to protect the existing airport use, nor can it lawfully do so, as the Council's own up-to-date evidence base confirms that "airport operations at Manston are very unlikely to be financially viable in the longer term and almost certainly not possible in the period to 2031" (AviaSolutions Report, paragraph 2.5) the airport is very unlikely to be financially viable in the longer term and almost certainly not over the plan period. This evidence base comprises three separate reports from credible aviation experts AviaSolutions, two of which specifically respond to comments/concerns raised by third parties. This is consistent with the conclusions of our client's own expert aviation consultants, York Aviation (2019) and Altitude Aviation (2019), both of whom conclude that there is little prospect of the re-opening of Manston Airport being a commercially viable proposition over the plan period (see

Enclosures 1 and 2 respectively). The Council therefore correctly concludes that there is no evidence which justifies a policy which would safeguard the Site for aviation use and no such policy is proposed as to do so without evidence would be unsound and fail to meet the minimum requirements for a development plan.

The only policy relevant to proposals at the former Manston Airport site would comprise the countryside policy (SP21). This states that development in the countryside outside of the urban and village confines will not be permitted unless "there is a need for the development that overrides the need to protect the countryside and any adverse environmental effects can be avoided or fully mitigated subject to the provisions of other policies".

As the Draft Local Plan was submitted for examination prior to the 25th January 2019, the Council is able to rely upon their own (lower) locally assessed OAN for the purpose of local plan examination even though it plans to provide for fewer homes than up to date need assessments show are required. However, any future review of the Local Plan will need to conform with the standard method OAN unless exceptional circumstances justified departure. The Secretary of State has directed that a review must take place 6 months after adoption of the local plan (Letter Rt Hon James Brokenshire MP, 28th January 2019). For Thanet, the MHCLG estimated that applying the standard method would result in an OAN of 1,063 dwellings per annum between 2016-2026. Applying this to Thanet's local plan period would result in a total OAN in the District of 21,260 dwellings.

Because any proposed revisions to the PPG will apply from the date of publication, the significant gap between Thanet's locally assessed housing need (17,140 dwellings over the plan period) and the standard method (21,260 dwellings) will form a material consideration in decision-making. On this basis, we consider that acute housing need would be sufficient justification to allow development on the former Manston Airport site, in particular as there is a live application which demonstrates that the impact of the development can be mitigated and it is in compliance with all other policies in the Local Plan.

Q7. What is the justification for paragraph 1.44? If a Development Consent Order for aviation use is granted, what "housing land supply provisions" would need to be reviewed and why?

See answer to Q3. There is a significant difference to the DCO application being granted and it being implemented on any meaningful scale. The overwhelming evidence (both from the Council and our own experts) is that there is no prospect that even should the DCO be granted, the airport would actually be delivered as conceived.

Enclosure 1

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York Aviation

STONE HILL PARK LIMITED

UPDATED CRITIQUE OF ASSESSMENT OF THE NEED AND JUSTIFICATION FOR THE DEVELOPMENT OF MANSTON AIRPORT AS AN AIR FREIGHT HUB

REPORT

FEBRUARY 2019

York Aviation

Originated by: Louise Congdon/James Brass/Matt Jones/Richard Connelly

Dated: 13th February 2019

Reviewed by: Richard Kaberry

Dated: 14th February 2019

STONE HILL PARK LIMITED

ASSESSMENT OF THE NEED AND JUSTIFICATION FOR THE DEVELOPMENT OF MANSTON AIRPORT AS AN AIR FREIGHT HUB

Contents

EXECUTIVE SUMMARY

1. York Aviation was appointed by Stone Hill Park Limited (SHP) in September 2017 to review the evidence presented by RiverOak Strategic Partners Limited (RSP) in connection with RSP's prospective application for a Development Consent Order (DCO) for the redevelopment and re-opening of Manston Airport as a hub for international air freight services, which also offers passenger, executive travel and aircraft engineering services. Our initial summary Report was published in November 2017 and the contents remain valid and relevant. It is included at **Appendix B** to this report for completeness.

2. Our November 2017 Report made clear that:

   - RSP's analysis of our earlier work for the Freight Transport Association (FTA) and Transport for London (TfL) was flawed and this work did not support RSP's conclusion that there would be a substantive or sustainable role for Manston in the UK air freight industry.
   - The remaining evidence relied on by RSP to justify its Need Case is almost entirely based on circumstantial evidence related to the shortage of airport capacity principally for passenger flights, that can also carry bellyhold cargo, in the circumstances where no additional capacity is provided at any of the London Airport. This is simply irrelevant particularly given that it is Government policy to promote the development of a third runway at Heathrow.
   - The analysis presented by Azimuth to support RSP's case shows a lack of understanding of the economics of the air freight market, especially in failing to recognise the economic drivers that prioritise the use of bellyhold capacity over dedicated freighters.
   - Manston's past operation was economically inefficient due to the inherent lack of viability. Reopening the Airport has no realistic prospect of success as there are more economically efficient alternatives available for any freight displaced from Heathrow in the short term, pending the development of a third runway.
   - Azimuth's 'forecasts' rely strongly on the attraction of an integrator but Manston is too peripheral for integrator operations serving the UK.
   - Azimuth's interview survey, used as further justification for RSP's freight movement forecasts, relies on a small list of mainly local companies with something of a vested interest in seeing Manston re-opened and does not provide a basis for the specific aircraft movement forecasts upon which the case relies, not least as it is not possible to relate the proposed services to be operated with the responses by the interviewees. There is simply no explanation for, or justification for, the services postulated by Azimuth. There is a total lack of credibility in the approach adopted.
   - To illustrate this lack of credibility of the forecasts, in Year 2 (the first operational year), a cargo throughput of nearly 100,000 tonnes is forecast by Azimuth. This would make Manston the 5th largest freight airport in the UK in its first year after re-opening. It would make Manston the 3rd busiest airport in the UK in terms of tonnage carried on dedicated freighter aircraft. This is simply not a credible proposition.
   - Proper analysis of the UK air freight market showed that there is plenty of freighter capacity at Stansted and East Midlands Airport to accommodate any growth required in dedicated freighter operations such that there will be no shortage of capacity across the UK and no role for Manston in accommodating traffic spilled from other airports. These airports are better located relative to the market and the key locations for distribution within the UK.

- Our estimate was that Manston would, at best, be able to attain 2,000 annual air cargo aircraft movements by 2040 and it is equally plausible that it might not achieve more than 750 such movements annually as operated when it was previously open.
- Our initial assessment of the passenger market was that the throughput might, at best, be around half of that projected by RSP and, hence, given the dependence on passenger related income for the financial viability of airport operations, this would impact substantially on the viability of the proposal.
- Our assessment was that the existing infrastructure at Manston Airport, if made good, would be capable of handling 21,000 annual air cargo aircraft movements. The actual usage of that capability would depend on the pattern of operation and how the infrastructure was used on a day by day basis.
- We also gave provisional consideration to the land required to accommodate future forecast demand. Without prejudice to our view that demand to use Manston is not likely to be anything like 17,171 cargo aircraft movements a year, we considered that the land required would be substantially less than shown on the RSP Master Plan and that the proposed land take is excessive and without justification in terms of the compulsory acquisition of the land, particularly given the inherent implausibility of the demand forecasts upon which the assessment was made.
- We could see no justification for the inclusion of the 'Northern Grass' area within the DCO on the basis of it being for associated development. There will be little requirement for or likelihood of the relocation of freight forwarding activity from adjacent to the UK's main cargo hub at Heathrow or elsewhere to Manston.
- Azimuth made errors in the assessment of the socio-economic implications of the proposed development, particularly in terms of the use of inappropriate multipliers, the assessment of impacts at a national scale, rather than the local scale in East Kent as implied by Azimuth, and should have taken displacement of activity from other UK airports fully into account, reducing the impacts well below those stated.

3. This report updates and adds to the analysis of the flaws in RSP's Need Case, as set out principally in the Azimuth Reports, as presented in our November 2017 Report. In practice, the Azimuth Reports are little changed and, to the extent that new material has been added, do not address or rectify the substantial errors that we identified in the analysis contained therein. We do also update consideration of Aviation Policy in the light of developments, including the formal designation of the Airports National Policy Statement (NPS) and the clear statement of intent regarding the third runway at Heathrow and its role in ensuring adequate air freight capacity for the foreseeable future.

4. Our overall assessment in November 2017 was that RSP's case lacked any real credibility. Nothing has fundamentally changed and to the extent that there have been changes, for example in the formal designation of the Airports NPS, any need for Manston is even less than we previously assessed.

5. In updating of our previous work, we have taken particular cognisance of the requirement for RSP to present a compelling case in the public interest to justify the compulsory acquisition of land. This goes beyond the theoretical test of the capability of the infrastructure proposed but must, necessarily, consider the likelihood and extent of the level of usage of that infrastructure and the extent to which there would be wider public benefit from the land being used in that way.

Aviation Policy

6. The whole of the RSP Need Case for the development of an air freight hub at Manston is based on the Azimuth Reports. A flawed interpretation of Aviation Policy is still set out in Azimuth's Volume I, which seeks to infer support for the development of a mainly freight airport at Manston based on the evidence before the Airports Commission of the potential damage to the UK economy if no additional hub airport capacity was provided at Heathrow (or a reasonable alternative to Heathrow). This was never a relevant basis for considering whether there was a case for re-opening Manston as a primarily air freight airport, as the vast majority of the economic benefit cited relates specifically to the benefits to passengers in the main using global passenger services from an expanded hub Heathrow – a need that Manston patently cannot and does not claim that it will be able to meet.

7. The clear decision by Government in favour of the building of an additional runway at Heathrow will transform capacity available to the air freight sector. There can be no doubt that the use by RSP of pre-NPS evidence on the need to address the shortage of airport capacity overall to serve London is misleading and incorrect. Properly interpreted, Government Aviation Policy makes clear that expansion of capacity at Heathrow, allowing more global air connections providing additional bellyhold capacity and scope, if required, for more dedicated freighter movements at Heathrow, is the identified means of meeting future air freight demand, along with the continued role for East Midlands and Stansted as air freight gateways with ample spare capacity.

Errors and Inconsistencies of Analysis

8. In this report, we have identified further inconsistencies and mathematical errors in the 'forecasts' presented by Azimuth and others in the RSP team to justify the proposed development at Manston. Whilst individually some of these errors and discrepancies might seem small in scale and impact, others are highly significant and serve to undermine the credibility of the whole approach outlined in the Azimuth Reports and throughout RSP's Application Documents. The combined implications are significant in terms of whether a) the application should actually have qualified as an NSIP; b) in terms of the level of demand that Manston might attract if it re-opened as an Airport and the viability of the proposed operation; and c) whether the environmental assessments undertaken are robust.

9. The most significant of these errors relate to:

- the lack of any soundly based forecasts – instead of forecasts based on an understanding of markets, costs and real potential, RSP's case is founded on a flawed list of airlines that it claims will definitely operate at Manston and then grow their business at Manston. Several of these airlines do not operate air freight services at all and others would be unlikely to operate to Manston for the reasons we set out. Hence, the list presented is no more than a 'guesstimate', without any supporting evidence. These are not 'forecasts' in the sense that is normally recognised in the industry;
- the lack of realism in the fleet mix overall and the assumed pattern of day/night time operations, particularly in relation to the implications for the prospect of integrator and mail operations being attracted to use Manston at all. This further undermines the credibility of the short term 'forecasts' as, contrary to what RSP claim, airlines would not be able to operate to Manston on an unconstrained basis to meet their own commercial requirements but would be so constrained during the night period as to make the majority of the operations claimed by Azimuth unviable for the airlines;

- the overstatement of longer term demand projections through the use of unjustified growth rates due to mathematical errors made by Azimuth.

10. These errors and inconsistencies render the so-called 'forecasts' completely unreliable as a basis for assessing the extent and nature of any usage of Manston in the event that the Airport re-opens.

Understanding the Air Freight Market

11. Examination of market trends and the structure of the air freight market make clear that there is no role for Manston, other than possibly as a niche cargo operation for ad hoc specialist consignments, as with its historic operation. The trend in favour of bellyhold for the carriage of general air freight is clear. This freight forwarding sector is heavily concentrated around Heathrow for this very reason and the associated consolidation activity essentially drives the choice of airport based on the most economical freight rates available for any consignment. This is highly unlikely to be a dedicated freighter option from an airport remotely located in East Kent.

12. R3 will provide for a doubling of air freight capacity at Heathrow, mainly in bellyholds of passenger aircraft, but also scope for dedicated freighters to the extent that these are required to feed the hub at Heathrow. Indeed, the ability to provide a step change in capacity for air freight was one of the principal reasons why the Government chose the specific proposal for the development of a new runway. Freight facilities at Heathrow are actively being modernised and extended in anticipation of the growth of cargo activity there.

13. The integrators are already well established at East Midlands Airport in particular, as well as using Heathrow and Stansted to serve the main markets in England. Manston is too far from the distribution centres along the M1/M6 axis to function as an integrator base, leaving aside that the proposed night movement restrictions would render any such operation unviable for the airline/integrator.

14. This leaves niche/specialist cargo operations as the only possible market for Manston. This would be consistent with the types of cargo that Manston used to handle. Ultimately, this is a very small market and unlikely to result in Manston handling more freighter movements than it did historically. This has profound implications for the Need Case as a whole, not least as it seems likely that any freighter activity would in fact need to be displaced from elsewhere through price incentives as there are few, if any, natural market drivers which would make Manston the first choice location, particularly given growth in bellyhold capacity at airports such as Manchester, Edinburgh, Birmingham and Stansted, plus available capacity for freighters particularly at East Midlands and Stansted Airports.

Air Passenger Forecasts

15. As with the asserted air freight 'forecasts', RSP/Azimuth provide no quantified analysis of the market to justify the passenger forecasts. The passenger element of the forecasts will be a vital element in considering the potential viability of the Airport as, generally, passenger operations offer higher margins for an airport than cargo operations given the ability to earn ancillary commercial revenues from shops and car parking. Furthermore, much of the asserted economic benefit from the Manston operation stems from passenger flights rather than cargo operations.

16. To assist the Examining Authority, we have set out in full our market assessment for passenger services at Manston. We have undertaken this analysis on the same basis as we would for any UK regional airport and presented it in a form that would be normal practice at an airport planning inquiry. Such analysis is completely missing from the Azimuth Reports.

17. Proper analysis of the market confirms that Manston is, at best, only likely to attract around half of the number of passengers claimed, without analysis, by Azimuth Associates over the 20 year period of the projections. This has inevitable implications for both the scale of facilities required and the viability of the airport operation as a whole. It is highly likely that attracting such services will require support from the public sector as well as highly discounted airport charges. Past experience would suggest that there would remain a high risk of the airlines failing to sustain the routes on a viable basis.

Infrastructure Requirements

18. Without prejudice to our view that demand to use Manston is not likely to be anything like 17,170 cargo aircraft movements a year, our analysis shows that the land required to accommodate such a number of movements would be substantially less than shown on the RSP Master Plan. The RSP Application Documents fail to set out any justification for the extent of facilities proposed by reference to their own 'forecasts' both for the core airport infrastructure and any claimed associated development on the Northern Grass.

19. To assist the Examining Authority, we have set out the basis for estimating the required number of stands and cargo terminal infrastructure to enable RSP's forecasts to be accommodated based on the times that airlines would wish to fly. This does, of course, confirm the extent to which there would be dependence on night flying. Based on proper analysis of airline operating patterns, the maximum number of Code E equivalent stands that would be required, even allowing a buffer for resilience, would be 10. Based on global benchmarks, the scale of cargo sheds could also be substantially reduced to no more than 1/3 of the size proposed by RSP. Overall, even in the highly unlikely event that RSP/Azimuth's 'forecasts' were realised, the overall scale of development required would be no more than of the order of 40% of that proposed in RSP's Master Plan to accommodate airlines at the times they would wish to fly. This is, of course, not the same as the theoretical capability of the existing or proposed infrastructure.

20. As far as the Northern Grass is concerned, the list of airport related uses provided in the Updated NSIP Justification by RSP is no more than a list of uses that may be required at an airport without any specific reference to whether they are actually needed at Manston or, indeed, the extent to which these uses would need to be accommodated in an airside location in any event. We can see no justification for the inclusion of the 'Northern Grass' within the DCO as associated development as there will be little requirement for the relocation of freight forwarding activity from adjacent to the UK's main cargo hub at Heathrow or elsewhere to Manston and any requirement for the facilities listed could be accommodated south of the B2050.

21. The development on the Northern Grass site appears to be speculative commercial development. The total extent of landside airport related uses at East Midlands Airport, other than hotels which do not feature as part of Manston's plans, is 13,000m^2, or 13% of the scale of development proposed for the Northern Grass by RSP. Hence, based on the precedent at East Midlands Airport – the UK's principal airport for pure freighter operations – the extent of development proposed for the Northern Grass means it would be expected to be largely for non-aviation related uses.

Viability

22. In the absence of any assessment of the Business Case for the development within the RSP Application Documents, we have undertaken an assessment of the potential viability to assist the Examining Authority to assess the likelihood of the development plan being implemented if consented.

23. Our analysis shows that the RSP proposals for Manston Airport are not commercially viable even based on their unreasonably optimistic traffic 'forecasts'. The Airport would remain in a loss making position for at least 15 years and generate a negative return on investment for more than 20 years. Fundamentally, the analysis of potential viability strongly suggests that no rational private sector investor would fund the re-opening of Manston Airport on the basis proposed by RSP as the development is likely to deliver negative returns to investment for the foreseeable future.

24. The Airport was never previously a financially viable operation and we see no reason for this to be any different in future. When properly analysed, there is little prospect of the operation generating sufficient revenues to cover the costs for the investors nor deliver any returns on the investment for the foreseeable future. In the absence of evidence to the contrary, it is our judgement that investment would not be forthcoming to the extent necessary to even secure the re-opening of the Airport.

25. Clearly, to the extent that traffic growth does not materialise as RSP envisage following the initial investment, it is clear that the financial position of the Airport would be materially worse. It is our assessment that, even if initial investment was forthcoming, which we doubt, it is inevitable that the Airport would close again in the medium term due to lack of inherent viability.

Overall Conclusion

26. Fundamentally, the whole Need Case for the development of Manston as an air freight hub is infected with flaws and errors of understanding such that the so-called 'forecasts' of air freight and passenger demand have no credibility at all. Even if they were credible, the scale of development proposed is unjustified and excessive. The development and operation of the Airport would simply be unviable and incapable of attracting competent investors.

1 INTRODUCTION

This Report

1.1 York Aviation (YAL) was appointed by Stone Hill Park Limited (SHP) in September 2017 to review the evidence presented by RiverOak Strategic Partners Limited (RSP) in connection with RSP's prospective application for a Development Consent Order (DCO) for the redevelopment and re-opening of Manston Airport as a hub for international air freight services, which also offers passenger, executive travel and aircraft engineering services. Our initial Summary Report was published by SHP in November 2017 and is appended to this report at **Appendix B** to assist the Examining Authority.

1.2 We subsequently provided comments on RSP's updated consultation materials in February 2018 and these were submitted as part of SHP's response to the consultation. This note is appended to this report at **Appendix D** to assist the Examining Authority.

1.3 In our original November 2017 report, as summarised in the Executive Summary, we made clear that:

i. RSP's quantified forecast of the number of dedicated freighter aircraft that Manston might attract was based almost entirely on our earlier work for the Freight Transport Association (FTA) and Transport for London (TfL) in 2015 and a note on Freight Connectivity for TfL in 2013. However, the analysis in these reports, when properly read, does not support RSP's conclusion that there would be a substantive or sustainable role for Manston in the UK air freight industry.

ii. The remaining evidence relied on by RPS as the basis of the Justification for the Application, set out in the Azimuth Reports, is almost entirely based on circumstantial evidence related to the shortage of airport capacity principally for passenger flights, that can also carry bellyhold cargo, in the circumstances where no additional capacity is provided at any of the London Airport (the Airports Commission's baseline position). Use of the economic costs to the UK if additional passenger hub capacity is not provided in the South East of England by 2050 is not relevant to the specific question as to whether there would be sufficient demand or any economic justification for dedicated freighter movements to be operated to/from Manston in the foreseeable future, particularly in the circumstance where it is Government policy to promote the development of a third runway at Heathrow.

iii. The analysis presented by Azimuth to support RSP's case shows a lack of understanding of the economics of the air freight market. Just because there could be excess air freight demand in 2050, compared to the bellyhold capacity available in the absence of further runway capacity at the UK's main hub, it does not follow that displaced bellyhold freight will seek a more expensive dedicated freighter service from an alternative airport over the use of available bellyhold capacity, even if available at a more distant airport, as this bellyhold capacity can be provided at a lower cost to the shipper with only a marginal penalty in terms of the overall shipment time.

iv. Fundamentally, Manston's past operation was economically inefficient due to the inherent lack of viability. Reopening the Airport has no realistic prospect of success as

there are more economically efficient alternatives available for any freight displaced to the extent that there are ongoing capacity constraints at Heathrow in the short and longer term.

v. The Manston freighter forecasts rely strongly on the attraction of an integrator but Manston is too peripheral for integrator operations serving the UK. Integrators have a strong preference for locations more centrally located in the UK with good road access to all of the major markets for ease of distribution. Manston is simply in the wrong place to serve the market being located at the far south east at the end of a peninsular, away from the main centres of population and remote from the majority of the UK.

vi. Azimuth's interview survey, used as further justification for RSP's freight movement forecasts, relies on a small list of mainly local companies with something of a vested interest in seeing Manston re-opened[1] and does not provide a basis for the specific aircraft movement forecasts upon which the case relies. If anything, the views of those interviewed by Azimuth suggest that there would, at best, be a limited role for Manston. The one airline interviewed made clear that *"success at Manston depended upon identifying a niche market and becoming known for excellence."* It did not identify what this niche market might be. These interviews confirm our view that any realistic expectation for Manston, at best, is for a small niche operation, as it previously sustained on a non-viable basis rather than as a general 'overspill' cargo airport for London.

vii. The outputs from these interviews are then used by Azimuth as a basis for postulating a number of cargo aircraft movements that might operate at Manston. However, it is not possible to relate the proposed services to be operated with the responses by the interviewees. There is simply no explanation for, or justification for, the services postulated by Azimuth. There is a total lack of credibility in the approach adopted.

viii. To illustrate this lack of credibility of the forecasts, in Year 2 (the first operational year), a cargo throughput of nearly 100,000 tonnes is forecast by Azimuth. This would make Manston the 5th largest freight airport in the UK in its first year after re-opening. It would make Manston the 3rd busiest airport in the UK in terms of tonnage carried on dedicated freighter aircraft. This is simply not a credible proposition.

ix. Our November 2017 Report contained an updated and further developed analysis of the UK air freight market from that previously undertaken in 2013 and 2015 for TfL and for the FTA. When properly interpreted, our forecasts of air freight demand and capacity across the UK as a whole, taking the role of bellyhold fully into account, show that, to the extent that there is <u>any</u> need for additional pure freighter movements, there is plenty of freighter capacity at Stansted and East Midlands to accommodate any growth. These airports are better located relative to the market and the key locations for distribution within the UK. Overall, we conclude from this analysis that there will be no shortage of capacity for dedicated freighter aircraft across the UK in the period up 2040 and that overspill from other airports would not provide a rationale for re-opening Manston.

[1] Not all of these companies are still in operation.

x. On any assessment of a realistic potential role for Manston, our estimate was that Manston would, at best, be able to attain 2,000 annual air cargo aircraft movements by 2040 and it is equally plausible that it might not achieve more than 750 such movements annually as operated when it was previously open. These are far below Azimuth's projection, upon which RSP rely, of 17,171 annual cargo aircraft movements.

xi. Our initial assessment of the passenger market was that the throughput might, at best, be around half of that projected by RSP and, hence, given the dependence on passenger related income for the financial viability of airport operations, this will impact substantially on the viability of the proposal. The other activities suggested by RSP, such as business aviation, maintenance, repair and overhaul, and aircraft dismantling are highly competitive markets and, to the extent that Manston might attract any such operations, these are unlikely to contribute substantially to the overall viability of the Airport.

xii. Our assessment was that the existing infrastructure at Manston Airport, if made good, would be capable of handling 21,000 annual air cargo aircraft movements. The actual usage of that capability would depend on the pattern of operation and how the infrastructure was used on a day by day basis.

xiii. We also gave provisional consideration to the land required to accommodate future forecast demand. Without prejudice to our view that demand to use Manston is not likely to be anything like 17,171 cargo aircraft movements a year, we considered that the land required would be substantially less than shown on the RSP Master Plan and that the proposed land take is excessive and without justification in terms of the compulsory acquisition of the land, particularly given the inherent implausibility of the demand forecasts upon which the assessment was made.

xiv. We could see no justification for the inclusion of the 'Northern Grass' area within the DCO on the basis of it being for associated development. There will be little requirement for or likelihood of the relocation of freight forwarding activity from adjacent to the UK's main cargo hub at Heathrow or elsewhere to Manston.

xv. Azimuth made errors in the assessment of the socio-economic implications of the proposed development, particularly in terms of the use of inappropriate multipliers, the assessment of impacts at a national scale, rather than the local scale in East Kent as implied by Azimuth, and should have taken displacement of activity from other UK airports fully into account, reducing the impacts well below those stated.

xvi. Our overall assessment was that RSP's case lacked any real credibility.

1.4 In practice, there have been no substantive changes to the case being presented by RSP since our original report was prepared. Hence, we consider that the contents of our original report and the subsequent note remain valid and should be given full consideration by the Examining Authority. We do not repeat their contents here but this updating report should be read alongside our previous reports, which are appended to this report at **Appendices B** and **D**[2]. It remains the case that RSP's assessment of the need for the development of a specialist air freight airport at Manston lacks credibility and is not founded in any proper assessment of the market as would normally be expected for a planning (or development consent) application of this magnitude.

1.5 In this report, we will highlight the key ongoing shortcomings in the Need Case being presented by RSP, drawing on our earlier reports and updating the material contained therein where necessary, in particular relating to:

- the implications of the Airports National Policy Statement (NPS) and emerging Government Policy as set out in the Aviation Strategy Green Paper[3];
- the updated performance of the UK Air Freight Sector and future trends;
- additional or revised material made available in the RSP Application Documents.

1.6 To assist the Examining Authority, this report also sets out, in more detail, our assessment of realistic passenger demand forecasts and on the implications of the assessment of the air freight market and passenger demand forecasts for the viability of the Airport, which were not previously covered in our 2017 Summary Report.

1.7 Fundamentally, this report goes beyond the work previously submitted to examine whether there is a compelling case in the public interest for the development of an air freight hub at Manston by reference to our assessment of the market and need for the development and in the light of recently emerging Government Aviation policy. The test that needs to be met is a more stringent test than simply whether the infrastructure proposed would deliver a theoretical capability greater than the threshold set out in the Planning Act 2008. It requires consideration of:

- the levels of demand that are likely to use Manston – this goes beyond consideration of the capability of the infrastructure proposed and requires consideration of whether the infrastructure is likely to be used and how this usage contributes to efficiently meeting the national demand for air transport;
- the implications of those levels of usage for the likelihood that the development and operation of the Airport would be viable and sustainable over the longer term, having regard to the requirement to fund the development of the infrastructure in the first instance;
- whether the land proposed to be acquired is required to meet realistic levels of demand.

[2] To assist the Examining Authority, we have included an updated index of the references to the final Azimuth Reports in **Appendix C**.

[3] Aviation 2050, The Future of UK Aviation, a Consultation, Department for Transport, Cmnd 9714, December 2018

1.8 In this report, we highlight further the deficiencies in the evidence presented by RSP to support its case, in particular the continued absence of detailed analysis and justification from RSP relating to the need for the development within the Application Documentation. It remains our view that the deficiencies in the evidence are not capable of remedy or, if remedied, would confirm our previous conclusion that the case for the re-opening of Manston as an operational commercial airport on a viable or sustainable basis lacks foundation.

1.9 In this Report, we consider:

- whether there is aviation policy support for the development **in Section 2**;
- errors and inconsistencies in the case presented by RSP in **Section 3**;
- understanding the air freight sector in **Section 4**;
- realistic forecasts of air passenger demand in **Section 5**;
- the justification for infrastructure required to support those forecasts in **Section 6**;
- the implications for the viability of airport operations in **Section 7**;
- our conclusions in **Section 8**.

York Aviation Credentials

1.10 York Aviation LLP is a specialist air transport consultancy that focusses on airport planning, demand forecasting, strategy, operation and management. The company was established in 2002. We offer a broad range of services to airports, airlines, governments, economic development organisations and other parties with an interest in air transport. Our team is a mixture of experienced air transport professionals and economists. Key members of the team have substantial experience of airport operations and development gained through working for Manchester Airports Group. Our core services include:

- business planning and strategy;
- capacity and facilities planning;
- master planning and planning application support;
- demand forecasting;
- economic impact assessment and economic appraisal;
- policy and regulatory advice;
- route development;
- transaction support.

1.11 Our current and recent clients include:

- Department for Transport (DfT), in particular producing supporting studies published by DfT alongside the Airports NPS and Aviation Strategy Green Paper
- Transport for the North, including recent work on the linkage between aviation connectivity and trade (with Oxford Economics);
- Transport Scotland and Scottish Enterprise;

- Civil Aviation Authority;
- London City Airport in relation to updating its Master Plan;
- London Luton Airport in relation to its prospective DCO;
- Manchester Airports Group, including economic impact assessments of East Midlands and Stansted Airports;
- Birmingham Airport;
- Glasgow Airport;
- Regional and City Airports;
- Ryanair.

In addition, we work for numerous investors in airports and other parties with an interest in the development, operation and management of airports in the UK and abroad. This includes the development of business plans, the assessment of viability and the broader business case for investment.

1.12 We previously did work for Transport for London and the Freight Transport Association related to submissions to the Airports Commission in connection with the requirement for a new hub airport serving London and the South East. This included analysis of the UK air freight market. This is work upon which RSP seeks to rely but, as made clear in our 2017 Summary Report, this reliance is misplaced and betrays a misunderstanding of air freight market and the implications of our findings in terms of any potential role for Manston in the event of capacity constraints at Heathrow and the main London airports.

1.13 Louise Congdon, Managing Partner of York Aviation has provided evidence in relation to the need for and economic impact of airport development at several airport public inquiries, including Manchester Runway 2, Liverpool Airport, Doncaster Sheffield Airport, Stansted Airport Generation 1, Farnborough Airport, London Ashford Airport (Lydd) and London City Airport. Louise has been actively involved in the development and implementation of UK Aviation Policy since the 1980s and acted as adviser to the House of Commons Transport Select Committee from 2011 to 2014. Her CV is appended at **Appendix A.** Louise has been assisted by other members of the York Aviation team in compiling this and the previous reports.

2 DOES AVIATION POLICY SUPPORT THE NEED FOR MANSTON?

In this section, we show that RSP and Azimuth's claims that development of Manston as an air freight hub are supported by Aviation Policy is flawed. The claims rely largely in the position set out by the Airports Commission in the event of no additional capacity being provided at any of the main London airports. This is no longer valid, if indeed the inferences drawn by Azimuth and RSP ever were, in the light of the clear Government Policy in support of the provision of a third runway at Heathrow as set out in the Airports National Policy Statement.

The Basis of RSP's Need Case

2.1 RSP's Statement of Reasons, Planning Statement and Environmental Statement include sections on the justification or need for the proposals but these rely entirely on the work of Azimuth Associates[4]. Azimuth Associates set out that their work seeks to address three questions[5]:

- *"Does the UK require additional airport capacity in order to meet its political, economic, and social aims?*
- *Should this additional capacity be located in the South East of England?*
- *Can Manston Airport, with investment from RiverOak, relieve pressure on the UK network and meet the requirement of a nationally significant infrastructure project?*

As we made clear in our November 2017 Report (paras 2.5 to 2.7), these are not the right questions to be addressed in terms of whether there is a specific need for the development of a dedicated air freight hub at Manston sufficient to make a compelling case in the public interest.

2.2 RSP's Need Case appears to be as follows:

- aviation is important to the national economy and will become more important post-Brexit;
- there is a shortage of airport capacity in the South East of England, ignoring the impact of the development of a third runway at Heathrow (R3) and other committed or proposed expansions of capacity at the other London airports;
- pure freighter traffic has not been growing in the UK due solely to shortage of airport capacity;
- so there must be a need for a dedicated freight airport to address this shortfall;
- Manston has spare capacity so could fulfil that role.

[4] We are unaware of any other published reports by Azimuth Associates and are unclear of the extent of their relevant experience across the aviation sector more generally.
[5] Azimuth Report Vol I, para. 1.3.1.

2.3 In practice, the RSP Application Documents, including the Statement of Reasons, continue to rely on circumstantial evidence, references and quotations relating to the need for more air passenger connectivity, the economic benefits of addressing that need, and the need for a hub airport in the South East of England as evidence to support their case. As we set out at length in our November 2017 Report, most of these references are irrelevant to the asserted need for a dedicated air freight hub as most of the economic benefits cited relate specifically to passenger connectivity through more global air service connections offering passenger and bellyhold[6] freight capacity. Many of the reports and quotations have been misconstrued or misrepresented by the RSP team. We do not seek to address each and every erroneous reference in this Report. Circumstantial evidence supporting the need for more airport capacity in the South East of England simply does not provide specific justification of the need for the development of Manston as a dedicated air freight hub sufficient to make a compelling case.

2.4 Indeed, the Planning Statement itself (para 1.47), sets out the key test, namely that:

"Significant weight should be attached to the considerations of need and the weight to be attributed to need in any given case should be proportionate to the anticipated extent of the Manston Airport Project's contribution to meeting that need"

The extent to which the Manston Airport Project would contribute to meeting that need can only be assessed by reference to the reasonably expected usage of the Airport, if it re-opened, and does not follow from a general description of the situation appertaining across the London Airport system if a third runway at Heathrow is not constructed. This assessment requires a proper examination of the air cargo market, which does not support that the contention that there is a role for Manston in meeting the need for more air freight capacity in the UK as we set out later in this report.

2.5 The work of Azimuth Associates is also stated in other Application Documents to set out not only the need for development but also the Business Plan and the viability of the development[7]. Such an assessment of the Business Plan for the operational airport would be normally expected to include financial projections, the wider business case and an assessment of viability but this is completely absent from any of the documents submitted by RSP. We return to the business case and viability in **Section 7**.

2.6 As explained in detail in our Summary Report of November 2017, we consider the report by Azimuth Associates to be infected by manifest flaws, including in its interpretation of our earlier work for Transport for London (TfL) and the Freight Transport Association (FTA). Despite providing detailed rebuttal of the interpretation of our work by Azimuth Associates in consultation responses submitted by Stonehill Park, many of the RSP Application Documents continue to misrepresent the conclusions of our work as the basis of their case. We do not repeat these criticisms here[8] but, in this section, we comment more generally on the overarching aviation policy case being made by RSP drawing on our understanding of the Government's aviation policy as set out in the Airports NPS and Aviation Green Paper. We address the implications of the errors and inconsistencies in the Azimuth Reports further in the next section.

[6] Bellyhold capacity is capacity for air freight on passenger aircraft, typically below the passenger deck.
[7] RSP Environmental Statement (ES) para. 3.3.275, RSP Planning Statement para. 9.35.
[8] These are set out in full in Section 2 of our November 2017 Report.

Aviation Policy

2.7 RSP's Planning Statement includes the extraordinary statements (paras 9.16 and 10.6) that:

"The APF[9] makes it clear that it is not appropriate to re-examine the need for increased aviation capacity or, indeed, to question the Government's clear policy position that increases in aviation capacity are necessary and that they bring significant benefits. It states that it is the purpose of national policy to settle these issues."

"Government policy on aviation makes it clear that it is not appropriate to re-examine the need for increased aviation capacity or, indeed, to question the Government's clear policy position that increases in aviation capacity are necessary and that they bring significant benefits"

This appears to be an attempt to suggest that there is no requirement to examine the specific need case for development at Manston or, indeed, any other airport. This is patently nonsense as it would suggest that airport development across the UK should proceed unfettered regardless of whether there is any underpinning justification for each specific development or a proper balancing of benefits and environmental costs in each individual case. The apparent absurdity of this suggestion is even greater when compulsory acquisition of land is in prospect requiring a compelling case in the public interest to be made.

2.8 The Airports NPS[10] sets out clearly, in Sections 2 and 3, the Government's settled approach to meeting the need for increased airport capacity in the South East of England by provision of a third runway at Heathrow (R3), such that the need for that specific development as a response to the economic need for growth in aviation capacity is established. However, this is not the case for other proposed airport capacity developments. Indeed, the NPS is specific as to its applicability in relation to all other airport developments (para 1.41):

"The Airports NPS does not have effect in relation to an application for development consent for an airport development not comprised in an application relating to the Heathrow Northwest runway, and proposals for new terminal capacity located between the Northwest Runway at Heathrow Airport and the existing Northern Runway and reconfiguration of terminal facilities between the two existing runways at Heathrow Airport. Nevertheless, the Secretary of State considers that the contents of the Airports NPS will be both important and relevant considerations in the determination of such an application, particularly where it relates to London or the South East of England. Among the considerations that will be important and relevant are the findings in the Airports NPS as to the need for new airport capacity and that the preferred scheme is the most appropriate means of meeting that need." (emphasis added)

[9] Aviation Policy Framework, Department for Transport, March 2013, Cm8584.
[10] Department for Transport, June 2018.

2.9 This means that the NPS cannot be construed as creating a general presumption in favour of schemes, other than the Northwest Runway at Heathrow, which seek to address the shortfall in airport capacity within the South East of England. In fact, the wording of the NPS suggests the exact converse is true. Hence, it is not sufficient to rely, as RSP seek to do, on any general presumption in favour of increasing airport capacity for the broader economic benefit. Rather, the proponent of any other airport development proposal is required to justify that proposal by reference to the NPS and the specific benefits to users and society more generally that would arise from the specific proposed expansion.

2.10 RSP's Need Case is, in essence, based on the position before the NPS was designated[11]. Indeed, para 9.18 of the Planning Statement refers specifically to and relies on para 2.12 of the NPS that outlines the capacity shortfall that would exist in the absence of any additional capacity in the South East as a context for the Government's decision to support the development of another runway at Heathrow. This is a recurrent theme throughout the RSP documents, which seek to rely on the implications of no additional capacity being provided at Heathrow or, indeed, any of the other main London airports. Hence, in the light of proposals to increase capacity across the London airports, including the provision of R3 at Heathrow and recently approved capacity increases at Stansted, the alleged capacity shortfall on which RSP's case is based no longer exists. We discuss the extent to which there remains a capacity shortfall for air freight further in **Section 4**.

2.11 There is recurrent use by RSP of data relating to the economic cost of not addressing the need for additional hub airport capacity for passenger services and the benefits of overcoming that constraint[12], implying that the economic and connectivity benefits that are cited in respect of a passenger hub could, in some way, be realised by the development of Manston as a dedicated air freight hub. This creates a misleading impression of the specific benefits that the scheme might bring even if it did develop an air freight role, which we address further in later sections.

2.12 Despite the settled policy in terms of the Government's preferred option for meeting the principal need for more airport capacity in the South East of England, RSP's case remains that there is a shortage of airport capacity in the South East of England and that there must, therefore, be a need for a freight focussed airport in the South East to meet the need for more air freight capacity. This no longer follows if, indeed, it was ever a logical conclusion that could have been drawn from the evidence. The NPS settles how Government intends the shortage of airport capacity in the South East of England to be addressed, particularly in terms of meeting the requirement for additional capacity for air freight:

"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."[13]

2.13 Indeed, it is relevant that the Airports Commission[14] made clear one of their reasons for recommending the choice of a third runway at Heathrow over the option of a second runway at Gatwick was because:

[11] For example, Azimuth Reports Vol I, paras. 2.1.4, 2.1.5, 4.4.1, 4.4.5, 4.4.7, 9.0.4, 9.0.5.

[12] For example, the RSP Planning Statement, para 1.9 refers to work by Oxford Economics and Ramboll for Transport for London 2013 (see Azimuth Report Vol I, para. 4.4.1) which clearly relates to DfT's capacity constrained scenario.

[13] Airports NPS, Department for Transport, June 2017, para. 3.73.

[14] Airports Commission: Final Report, July 2015, Executive Summary, page 24.

"Gatwick's position to the south of London limits its effectiveness as a national freight hub."

Clearly, such considerations would apply even more so to Manston, which is even further away from the main centres of population, the sources of freight requiring shipment and the location of the main air freight consolidation and distribution centres adjacent to Heathrow and in the 'golden triangle' for distribution in the East Midlands.

2.14 Hence, references at para. 6.28 of RSP's Planning Statement to paras. 2.7 and 3.23 of the NPS as providing underpinning justification for the provision of a dedicated freight airport are misplaced as these clearly provide a context for the importance attached to meeting growing demand for air freight in the Government's decision to support the Heathrow Northwest Runway option as providing the scope for the greatest growth in air freight capacity including both bellyhold services and the opportunity for additional dedicated freighters.

2.15 A doubling of air freight capacity at Heathrow would allow for at least 31 years of extrapolated growth based using the updated analysis of future air cargo[15] tonnage growth potential set out in **Section 4**, assuming Heathrow sustains its current share of the market. We discuss the future of the market and trends further in that section. On the basis of realistic projections of cargo tonnage growth and the availability of capacity at Heathrow, it is hard to see how there is likely to be any shortfall of in air freight capacity in the South East of England for the foreseeable future, leaving aside the shorter term implications of capacity constraint at Heathrow until R3 is operational, which we also discuss further in **Section 4**.

2.16 RSP also seek to rely (Planning Statement, para 6.65) on the policy promoting best use of runway capacity at all UK airports, published alongside the Airports NPS[16]. This does not, however, settle that it will always be the case that best use should be made of any given runway, nor that runways should be protected in perpetuity as implied by the RSP's Statement of Reasons (para. 9.56). The policy, as set out in the 'Making Best Use' document, is clear that whilst there is a policy presumption in favour of making best use of existing runways, each case falls to be considered on its merits (para 1.29):

"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."

[15] Cargo includes freight and mail.

[16] Beyond the Horizon, The Future of UK Aviation, Making Best Use of Existing Runways, Department for Transport, June 2017.

2.17 Whilst this paragraph refers specifically to local decision making rather than an NSIP, the NPS makes clear that there is no automatic presumption of need for any other airport NSIP within the South East of England. There is, hence, still a requirement for a full justification to be provided for the best use of existing runway capacity at any individual airport on its own merits in terms of the demand it may reasonably be expected to handle and the benefits to consumers (or shippers) of using that airport rather than other available capacity. It is not sufficient to seek to make the case based on an inference of some general shortfall of capacity across the South East. Re-opening a runway only for it to be little used in practice does not constitute an economically efficient usage of that runway and so would not be likely to equate to 'best use'. There is a requirement for specific justification of how the capacity would be used and the benefits flowing from that usage at the airport in question rather than generic estimates of the economic value of overcoming the capacity constraints at the UK's main passenger hub airport that are peppered throughout the RSP documents and upon which RSP seek to rely for the substance of their need case.

2.18 More recently, the Government published a Green Paper on Aviation Strategy[17] as a pre-cursor to an updated strategy later in 2019. The section on air freight (paras. 4.45-4.50) makes clear that the three principal air freight airports are Heathrow, East Midlands and Stansted, highlights the doubling of air freight capacity that R3 at Heathrow will provide and stresses the key role that night flying plays in the air freight industry. The section also makes clear the role these airports play in meeting the need for air freight from across the whole country, i.e. it does not follow that because air freight is carried from a London airport that the freight has an origin or destination in the South East. This is relevant to consideration of alternatives, as we go on to discuss in **Section 4**.

2.19 It should be noted that the need for a dedicated freight focussed airport was previously considered in the Future of Air Transport White Paper in 2003, which stated, in relation to a proposal for a dedicated freight airport at Alconbury (arguably better located in relation to the total UK market than Manston being close to the A1M in north Cambridgeshire):

"The concept of Alconbury as a specialist freight facility attracted little support, especially from within the industry."[18]

Alconbury at the time was owned by Prologis (distribution experts) and BAA Lynton (airport developers) but they chose not to promote Alconbury as a freight airport. There are reasons why this is so, related to the complex inter-relationship between the freight forwarding sector, consolidation of freight loads, use of bellyhold capacity and the residual role of pure freighter operations that we explain further in **Section 4**. We have seen no analysis by RSP or Azimuth as to whether this position has changed, nor can we find specific policy support for a dedicated freight airport in more recent Government policy documents or consultations.

2.20 Indeed, in the same 2003 policy document, the Government set out its consideration of the potential role for Manston:

[17] Aviation 2050, The Future of UK Aviation, A Consultation, Department for Transport, December 2018, Cm 9714.

[18] Department for Transport, Future of Air Transport White Paper, December 2003, para 11.105

"11.98 The operators of Southend, Lydd and Manston argue that their airports could grow substantially and each has plans for development. The potential of other airports, including, Shoreham, and Biggin Hill, should also not be overlooked.

11.99 We consider that all these airports could play a valuable role in meeting local demand and could contribute to regional economic development. In principle, we would support their development, subject to relevant environmental considerations.

Had the Government considered there was a need for Manston as a specialist air freight airport at the time, it would have said so, not least as, in 2003, Manston was the UK's 7th busiest airport in the UK for air freight after Heathrow, Gatwick, Stansted, East Midlands, Manchester and Prestwick.

2.21 Nor can RSP take comfort from the work of the Airports Commission in considering whether there is a role for reliever airports[19] to add weight to there being a potential role for a dedicated air freight hub. The discussion in the Airports Commission Interim Report[20] dealt with the potential role of smaller airports in acting as relievers to capacity pressure at the main London airports principally for general and business aviation, which makes up a minor part of the RSP case. Indeed, the specific reference to Manston in Appendix 2 (page 16) to the Interim Report makes clear any consideration given to a potential role for the Airport was within the context of the Commission's broader consideration of reliever airports as referred to above rather than any specific role as a dedicated freight airport. Manston was promoted by its then owner, Infratil, to the Airports Commission as having potential as a major cargo hub airport but this was not taken up by the Commission.

Treatment of Alternatives

2.22 As noted in para. 2.9 above, it is notable, therefore, that the Application Documents, including the ES, contain no proper assessment of the ability of capacity that is, or will be, available at the London airports and across the UK to accommodate the asserted air freight demand that could be attracted to Manston by way of a full assessment of the alternative ways of meeting that demand. RSP's case is wrongly based on the position without the provision of additional capacity at any of the other London airports and is, incorrectly, based on a presumption that air freight currently being flown from the London airports reflects demand for air freight based within the South East; neither of which is valid. Hence, there should have been an assessment of the alternatives available for handling any excess demand for air freight rather than the simply considering whether there are alternative locations for the asserted requirement for a specialist freight airport (ES para. 2.3.3) within the South East of England. It is asserted, but not evidenced, that there are no alternatives to handle air freight growth. This is patently wrong as examination of the UK air freight sector demonstrates as set out in **Section 4**.

[19] RSP Planning Statement, paras. 6.67 to 6.71.

[20] Airports Commission, Interim Report, November 2014, paras. 5.96 to 5.100

Conclusions

2.23 The whole of the RSP need case for the development of an air freight hub at Manston is based on the Azimuth Reports. A flawed interpretation of Aviation Policy is set out in Azimuth's Volume I, which seeks to infer support for the development of a mainly freight airport at Manston based on the evidence before the Airports Commission of the potential damage to the UK economy if no additional hub airport capacity was provided at Heathrow (or a reasonable alternative to Heathrow). This was never a relevant basis for considering whether there was a case for re-opening Manston as a primarily air freight airport, as the vast majority of the economic benefit cited relates specifically to the benefits to passengers in the main using global passenger services from an expanded hub Heathrow – a need that Manston patently cannot and does not claim that it will be able to meet.

2.24 The clear decision by Government in favour of the building of an additional runway at Heathrow will transform capacity available to the air freight sector. There can be no doubt that the use by RSP of pre-NPS evidence on the need to address the shortage of airport capacity overall to serve London is misleading and incorrect. Properly interpreted, Government Aviation Policy makes clear that expansion of capacity at Heathrow, allowing more global air connections providing additional bellyhold capacity and scope, if required, for more dedicated freighter movements at Heathrow, is the identified means of meeting future air freight demand, along with the continued role for East Midlands and Stansted as air freight gateways.

3 ERRORS AND INCONSISTENCIES IN THE EVIDENCE PRESENTED BY RSP

In this section, we catalogue ongoing errors of analysis and the lack of supporting information which render the 'forecasts' presented to underpin RSP's application wholly unreliable. Indeed, they are not 'forecasts' in any meaningful sense given the absence of proper analysis of the market and any evidenced assessment of the extent to which Manston might capture any share of that market at any future date.

At best, the projections set out in Azimuth Vol III represent no more than an aspirational 'wish list' of what RSP would like to be able to attract to use Manston but, even then, this 'wish list' is infected with errors in terms of airlines that do not operate freighter aircraft, and patterns of operation, particularly in terms of the balance of movements between day and night time, that are wholly inconsistent with the patterns of operation that the airlines would require if they were even to consider operating some flights to Manston.

The Azimuth Reports

3.1 The Azimuth Reports are, in practice, little changed from those published for the supplementary consultation in January 2018, which we had previously commented on in our November 2017 Report and Supplementary Note of February 2018. In our original Report, we commented on the lack of realism in the so-called 'forecasts' for Manston and highlighted the lack of methodological rigour, particularly in relation to the adoption of the 'Delphic Approach'[21]. Azimuth have subsequently claimed that their forecasts have been subject to a peer review by Loughborough University[22] but this review has not been made available as would be normal good practice. It remains the case that the freight aircraft movement and tonnage forecasts, along with the passenger forecasts, set out by Azimuth have not been correctly derived from market data or using standard industry analytical techniques as would be normal practice in presenting the case for a planning or development consent application. As such, they cannot be relied on.

3.2 Furthermore, we have noted further errors in the use of data and information by Azimuth as well as further inconsistencies between the information presented in the four Azimuth volumes and material relied on in the Environmental Statement. These errors and inconsistencies go to the heart of the reliance that can be placed on RSP's need case for Manston. Indeed, the nature of the errors is such that the 'forecasts' are simply not realistic or achievable.

3.3 In this section, we highlight a number of areas where the information relied on by RSP is:

- unsupported by the evidence of how the airfreight sector actually operates;
- infected by mathematical errors;
- inconsistent;
- wrongly applied to the local market.

[21] York Aviation Report, November 2017, paras. 2.77-2.79.
[22] Azimuth Vol III, para. 2.1.6.

Air Freight Forecasting

3.4 There are two principal problems with the air freight demand forecasts presented by Azimuth:

- the absence of any justification for the short term forecasts for the first 10 years of the proposed airport operation;
- erroneous use of growth rates from other industry or Government publications to project forward from Year 10 to Year 20.

We set these issues out in some detail in our November 2017 Report (Section 2) and do not repeat them all here. In combination, these issues render the so-called 'forecasts' meaningless and misleading.

3.5 At the outset, any forecasts for air freight growth need to be seen within the context of deceleration of growth trends in the face of economic uncertainty. This has recently been reported as a concern by the airport's trade body, ACI EUROPE.[23]

Short Term

3.6 It is notable that the Azimuth Reports provide no detail or justification for the forecasts of air cargo aircraft movements by type, airline or world region for the first 10 years of the forecast period. The 'forecasts' are based on unevidenced interviews and indications of the types of markets which Manston might hope to serve[24]. This is simply not a sound basis for establishing the need for Manston. Similar issues infect the passenger forecasts, which we discuss further in **Section 5**.

3.7 The basis for the markets which it is claimed that Manston might serve appears to be comments such as:

"The Indian subcontinent is also a potential exporter and importer of goods to the UK. One interviewee mentioned the potential for airlines from Pakistan to use Manston Airport (Securitas). Pakistan mainly exports clothing and imports consumer goods."[25]

[23] ACI EUROPE, https://www.aci-europe.org/media-room/mediaroom.html, Press Release 6.2.19.
[24] Azimuth Reports Vol III, para. 3.2.1. We note that most of the interviewees were local haulage firms or similar, some of which are no longer in business. The interviews do not directly relate to the list of airlines that it is claimed might operate.
[25] Azimuth Reports Vol II, para. 4.2.37

3.8 There is a further list of possible geographic markets set out at para. 5.2.5 of Azimuth Vol II and then a discussion of sectoral markets which might offer opportunities for growth in air freight. However, none of this represents an assessment of the likelihood of dedicated freighter services operating at Manston but represents a generic discussion of areas where there may be growth in air freight tonnage across the UK as a whole and where increased bellyhold capacity on passenger aircraft to/from these destinations will assist the development of these import/export markets. For example, Jet Airways has recently commenced a 5 days a week service from Manchester to Mumbai with an A330-200 offering bellyhold cargo capability as part of the offer within the context of a liberal air service agreement that allows for capacity increases across the market[26] between the UK and India.

3.9 So, whilst Section 3.2 of Vol III of the Azimuth Reports sets out how the cargo tonnage forecasts have been derived from the cargo aircraft movement forecasts, the basis for the movement forecasts is not set out at all. Hence, without a reasoned justification by reference to the scale of the market for each service proposed, little reliance can be placed on the asserted aircraft movement forecasts. These appear to represent nothing more than an aspirational list rather than a robust assessment of the extent to which such services might be operated. For none of the assumed services is there any analysis presented of markets, costs or alternatives available now or in the future for such freight and for none of the assumed services is any commitment documented.

3.10 The 'guesstimates' of the aircraft movements projected each year by airline(s), aircraft type and world region are set out, without further explanation, in Appendix 3.3 to the ES[27]. We set out below our comments on a number of the suggested airlines shown as assumed to be operating at Manston should the Airport re-open as an air freight hub.

- Amazon - it is not clear why Amazon would operate up to 4 return flights a day (1 in the first year of operation) from the US to Manston as the goods which Amazon sells in the UK are not, in the main, US manufactured. This seems to confuse the asserted role as an Amazon distribution hub with a requirement for long haul freight operations. Amazon's own flights in the US are between its main hub and secondary regional hubs, they operate no international services. Manston is not well located to operate as a distribution hub either for the London area or for the country as a whole so transatlantic flights by Amazon are not a realistic prospect.
- Cargolux - this assumes reinstatement of the previous Cargolux flower operation which has relocated to Stansted. This is only likely to take place should the charges to the airline be set at a very low level at Manston, as was the case previously, given the better location of Stansted relative to the totality of the UK market for the distribution of fresh flowers. Whether this would be commercially viable given RSP's asserted £300m investment in Manston is not assessed.

[26] https://www.gov.uk/government/news/deal-agreed-to-ease-restrictions-on-flights-between-the-two-nations

[27] TR020002-002418-5.2-6 - Environmental Statement - Volume 6 - Appendices 1.4-7.2.

- Fedex/DHL- the aircraft types proposed seem to pre-suppose a DHL operation. The integrator operation is expected to account for 22.8 movements per day on average or 48% of the total at Year 20 (a higher proportion in some of the earlier years). Manston is simply in the wrong location to perform as a hub for an integrator as we explain further in **Section 4**. Based on our knowledge of the integrator operations, this is completely unrealistic for Manston.

  Overall, the number of movements would imply around 8,322 annual movements by an integrator. This is around 43% of the total number of freighter movements at East Midlands Airport (EMA) in 2016 or around 2/3 of the current DHL operation there. This is hardly realistic as it would imply Manston would be a major integrator hub, duplicating the EMA operation, which acts as the main DHL hub for the UK working in tandem its main European hub at Leipzig. Freight tonnage continues to grow at EMA but the number of freighter movements have not systematically grown over the last decade. Further detail will be set out in the next section.

- Pakistan Airlines - The airline no longer operates pure freighter aircraft. The airline operates 22 passenger flights a week to and from the UK (Heathrow, Manchester and Birmingham) offering 208.5 tonnes of freight capacity each week[28].

- Postal - The B737 operation presupposes the development of a mail hub. Royal Mail have pared back on flying even at their main hub at EMA so it is unclear why a dedicated B737 operation is expected at Manston.

- Russian - Whereas the PEIR showed Russian airlines operating with aircraft types that have noise quota counts of 8 and 16, which meant that they could not operate according to the noise mitigation plan. The proposed aircraft type has been changed to a B747-400 in the ES but with no explanation as to whether the proposed Russian airline plans to operate such an aircraft or not.

- TAAG Angola – Do not operate any dedicated freight aircraft, let alone the B747 freighters, which is the type shown as expected to operate to Manston.

- Iran Air - Had a limited freighter fleet which is now stored and no longer in service. The airline placed no new freight aircraft orders when ordering a vast number of new passenger aircraft after the lifting of sanctions so it would not have aircraft to operate to Manston.

- Qatar Airways - Operates a significant schedule of dedicated freight services at London Stansted as part of its agreement to take over British Airways' freight commitments at the Airport. This British Airways/Qatar joint operation was in place when Manston was previously operational, and there were no services at Manston at that time, so it is not clear why they would not move from their established base if Manston was re-opened.

[28] Official Airline Guide (OAG) database.

3.11 At the very least, even without the other issues that we discuss in this section, consideration of the list of airlines and the type of operation shown in the ES gives rise to serious doubts about the credibility of the air freight movement forecast overall. These airlines account for 90% of the aircraft movements projected by RSP for Manston in the first year of operation and over 80% in Year 20. Regardless of whether a list of supposed operating airlines is produced, the absence of any analysis of the market for the proposed flights and a reasoned explanation for why each of the named airlines would operate to Manston means that the forecasts lack any credibility at all. In practice, most of the airlines relied on within RSP's 'forecasts' would or could not operate, invalidating the forecast and the assessments that depend on it.

3.12 It would be normal practice to set out clearly the markets that the Airport believes could be served, taking into account demand within its catchment area, and then to indicate the airlines and the aircraft types most likely to serve those markets. No assessment is presented by RSP of the extent to which the markets that it has identified are already being served by existing bellyhold or dedicated freighter operations nor any assessment of the extent to which future demand will be met through increased freight capacity at Heathrow and elsewhere. It is not sufficient to simply hypothesize a list of airlines as a basis for a forecasts of cargo movements and tonnage without supporting evidence and analysis of the market.

3.13 We recognise that Azimuth have sought to justify the absence of any mathematical demand model[29] to assess air freight demand for Manston on the basis of the difficulty of establishing relevant market data in the circumstances when Manston is not currently operational and in the light of the RSP claim that the re-opening of the Airport could bring about a step change in performance. However, the sources that they rely on to vindicate a purely qualitative approach to preparing the forecasts do not support the position adopted. For example, the US Transportation Research Board approach cited as justification for the approach adopted[30] makes clear that any qualitative approach should be based on the clear identification of the scale of the market, the drivers for change and an assessment of the potential market share that could be achieved as well as consideration of alternative future scenarios. It is evident that Azimuth has not completed these steps in a systematic and transparent fashion based on analysis of the actual demand for dedicated freighter aircraft to and from the UK today.

3.14 Hence, it is our view that no credence can be placed on the short term demand projections presented in the Azimuth Reports. It is simply not credible that Manston would attain 50% of the number of freighter aircraft movements currently operated to Stansted Airport within its first year of operation or that it would match Stansted in its second operational year (Year 3 2022).

3.15 We set out, in **Section 4**, a proper analysis of the market and the competitive drivers using publicly available data to substitute for the lack of proper analysis carried out by Azimuth. This will demonstrate that there is no pent up excess demand waiting for the re-opening of Manston, leaving aside that the Airport is simply in the wrong place to serve the UK market.

[29] Azimuth Reports Vol II, para. 2.22.4
[30] Ibid, para. 2.22.5

Longer Term

3.16 The short term 10 year forecasts are then extrapolated forwards by Azimuth for the following 10 years based on an assumed growth rate in underlying dedicated freighter aircraft movements. It is important to note that, if the forecasts for the first 10 years are not properly grounded in an assessment of the market for Manston, then any extrapolation forwards will lack validity whatever the realism or otherwise of the growth rate selected. This is fundamentally the case.

3.17 Even if the short term forecasts were reliable, which they are not, we dealt at length in our November 2017 Report (Section 2) with the errors made by Azimuth in its interpretation and use of Boeing and Airbus forecasts of the potential global growth in air freight RTKs[31] as the basis for its long term trend based forecasts using a 4% per annum annual growth rate for dedicated freighter movements. We do not repeat these criticisms here but the points remain valid.

3.18 It remains significant that the latest Government UK Aviation forecasts[32] continue to assume that there will be no net growth in pure freighter aircraft to and from the UK over the period to 2050:

"Freight is not modelled in detail. An assumption about the number of freighter ATMs is nevertheless required in the model as freighters potentially affect the space for passenger ATMs available where capacity constraints exist and, as discussed in Chapter 3, CO_2 emissions. At the airport level the number of freighter movements has been volatile with some evidence of overall national decline in recent decades. In the absence of clear trends for individual airports, the modelling now assumes that the number of such movements will remain unchanged from 2016 levels at airport level across the system.

If DfT has believed that there was likely to material growth in demand for dedicated freighter aircraft, it would have made a different assumption so as not to understate the need for more airport capacity across the UK's airports and the carbon effects of growth more generally.

3.19 We know that Azimuth do not agree with this view[33] but we are unaware of any intention by DfT to revise this no net growth assumption regarding the long term growth potential for dedicated freighter movements across the UK. This is in the context of the role of Heathrow and the additional capacity to be provided by R3 in increasing capacity for freight carried in the bellyholds of passenger aircraft and even in providing some increase in capacity for dedicated freighter aircraft at the UK's principal air freight hub to the extent that there is specific demand for additional movements at Heathrow connected with its hub role. We address the role of Heathrow within the UK air freight industry and the relationship between freight carried in bellyholds of passenger aircraft and in dedicated freighters further in the next section. We addressed Azimuth's use of alternative global forecasts of freight tonnage growth as the basis for forecasting dedicated freighter movement requirements in our previous reports but we draw some additional conclusions below.

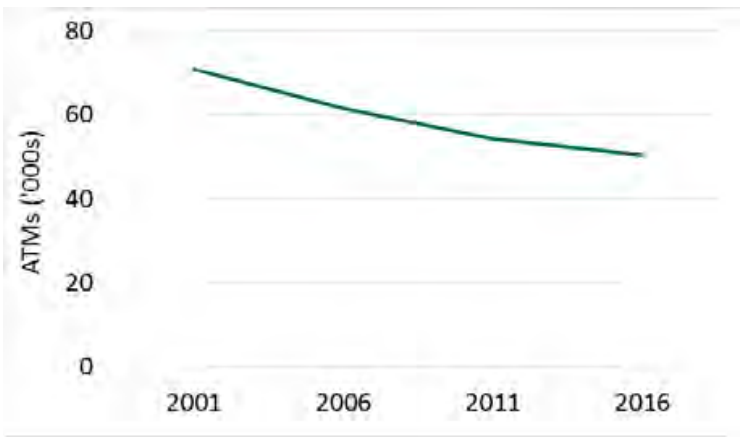
[31] Revenue Tonne Kilometers
[32] UK Aviation Forecasts, October 2017, as amended 25th January 2018, para. 2.56.
[33] Azimuth Report, Vol III, para. 2.1.14.

3.20 The trends in terms of tonnage growth are set out in paras. 4.4 and 4.5 and illustrated in Figure 4.5 of the UK Aviation Forecasts 2017. The Azimuth Report, Vol II, para 2.6.4 and Vol III para. 2.3.6, quotes from the DfT's original version of the UK Aviation Forecasts 2017. Azimuth appear not to have realised that this text was amended and an updated version issued on 25th January 2018[34].

"Freight, in terms of both tonnage and numbers of aircraft movements, has not kept pace with the growth in passenger numbers. In 2011 (70%) and 2016 (69%) most freight by tonnage is carried in the holds of passenger aircraft ('bellyhold'). Total freight carried at the UK airports rose from 2.3 million tonnes in 2011 to 2.4 million tonnes in 2016, with a growth of about 5% in the weight of cargo carried on both freighter and passenger aircraft."

3.21 The key point is that, whilst there has been growth in tonnage carried on both dedicated freighter aircraft and in the bellyholds of passenger aircraft over the 5 year period from 2011 to 2016, there has been an ongoing decline in the number of movements by dedicated freighter aircraft as illustrated in **Figure 3.1** below. Our analysis of the trends is echoed in the recent Altitude Report[35]. Notwithstanding a small increase in dedicated freighter operations in 2017, the general trend remains downwards. Our analysis of Civil Aviation Authority (CAA) Airport Statistics[36] suggests that there were just under 55,000 such aircraft movements in 2018 across all UK reporting airports[37]. This downward or static trend in relation to dedicated cargo aircraft movements across the UK as a whole is important in terms of setting a context for considering the reasonableness of Azimuth's projections by reference to the implications for the market share of the total market that it is claimed Manston could attract.

Figure 3.1: Trends in Dedicated Freighter Air Transport Movements (ATMs)



Source: DfT UK Aviation Forecasts 2017, Figure 4.5

[34] As a result of inconsistencies in the original pointed out to the DfT by York Aviation.
[35] Altitude Aviation Advisory, Analysis of the Freight Market Potential of a Reopened Manston Airport – Addendum: UK Regional Airport Financial Performance and Debt Funding Characteristics, February 2019.
[36] https://www.caa.co.uk/Data-and-analysis/UK-aviation-market/Airports/Datasets/UK-airport-data/
[37] i.e. excluding the Channel Islands and the Isle of Man.

3.22 Of the 55,000 freighter aircraft movements to/from the UK in 2018, some 34,000 movements were non-domestic; the domestic flights being mainly mail operations and feeder flights to the EMA freight hub. In terms of the domestic flights, it is important to recognise that they are counted twice in the CAA statistics, once at each end of the route, e.g. EMA and Belfast. Hence the number of such individual flights is actually under 11,000. On the basis that the small turboprop aircraft (ATR72s), making up 28% in Year 1 falling to 25% in Year 20 of the freighter movements shown in the ES Fleet mix[38], are operating principally on domestic routes, this would imply a market share of total UK domestic freighter flights starting in Manston of 13% in Year 1 rising to 40% by Year 20. This assumes no further decline in the number of domestic cargo flights, although this sector has a longstanding historic trend of decline numbers of flights. In terms of international operations, the Azimuth projections for Manston, would imply a market share of international freighter operations of 11% in Year 1 rising to nearly 40% in Year 20. If the market for Manston is narrowed down still further to principally day time operations, the asserted share of the available market would rise much further. In either case, the market share implications of Azimuth's 'forecasts' simply defy credibility in a market already well served by the better located operations at East Midlands and Stansted in addition to the contribution at Heathrow and other airports.

3.23 Azimuth use the original DfT estimate of 4% growth in tonnage carried on dedicated freighter aircraft (which was amended by DfT to 5%) over the period 2011 to 2016 as a key part of their justification for using the 4% per annum (p.a.) growth rate that they apply to the Year 10 freighter aircraft movement 'forecast' to extrapolate the freighter aircraft movement forecasts to Year 20. This leads to 2 fundamental errors:

- firstly, in applying a growth rate for cargo tonnage (or RTKs in the case of the Boeing and Airbus global forecasts cited by Azimuth) to aircraft movements ignoring the increase in tonnage carried per movement meaning that the growth in movements will always be lower over time than the growth in tonnage; and
- secondly a failure to understand the difference between the growth rate over a period of time (5, 10 or longer number of years) and an average annual growth rate applicable each year within the period to achieve that level of growth.

3.24 This latter and fundamental mathematical error undermines their use of average annual growth rates applied to derive both the longer term air freight movement and passenger growth rates and results in grossly overstated long term demand projections for Manston, leaving aside the reliability of the short term forecasts upon which the extrapolations are based. The specific errors are:

- The DfT trend of 4% growth over 5 years that is relied on by Azimuth is equivalent to 0.8% p.a. growth which, even if the Year 10 forecasts were valid (which they are not), would reduce the Year 20 forecast of freighter aircraft movements to 12,550 aircraft movements rather than the 17,170 projected by Azimuth.

[38] ES Appendix 3.3

- ✈ The 4% trend growth in the passenger forecast is cited by Azimuth as being conservative[39] by reference to a peer review undertaken by ourselves of the passenger forecasts for Liverpool John Lennon Airport in 2017, which found growth of 50% over the period from 2016 to 2030 and 120% over the period to 2050 to be reasonable. Based on growth of over 50% (62.5%) and 120% over 24 and 44 years respectively, the average annual growth rate was just over and just under 2% p.a. respectively in the case of Liverpool, which we considered reasonable in the context of DfT's overall projections for the UK market. Hence, again, proper analysis of growth rates does not support the use of 4% p.a. growth rate adopted by Azimuth for Manston over the longer term.

We discuss the appropriate basis for passenger forecasting in both the short and longer term in the **Section 5**.

Displacement Implications

3.25 It is notable that the implication of the Azimuth freighter forecasts is that the Airport is predicted to handle 5,252 freighter aircraft movements in its first year of operation (Year 2). This is almost five times the number of freighter aircraft handled in the previous peak year for the Airport of 2003[40]. On this basis, Manston would have almost a 10% share of the total market for dedicated freighter aircraft in the UK (based on just over 55,000 such movements in the rolling year to October 2018) in its first year of operation and assuming no net growth in freighter movement activity across the UK in line with DfT assumptions, or 15% of the international freighter movements. The Year 2 figure amounts to around 25% of the total number of freighters handled at the UK's main airport for dedicated freight aircraft, East Midlands (EMA), or around 50% of those handled at Stansted in the rolling year to October 2018. As noted above, the Year 3 figure for freighter aircraft movements would place Manston on a par with Stansted within 2 years of opening. This is not credible.

3.26 The only assumption that can be made is that Azimuth/RSP are relying on freighter aircraft at Manston being wholly or largely displaced from elsewhere in order to achieve the growth projected in a single year or over 2 years. Even if there was some latent demand for additional freighter movements to the UK, which we do not believe to be the case, it is not reasonable to assume that Manston would be the first choice for such freighters. We discuss the availability of spare capacity and market trends more generally in the next section.

3.27 Although Azimuth claim that the costs to airlines, freight forwarders and shippers of switching between airports have been taken into account in preparing the forecasts[41], this is nowhere transparently explained and, in particular the implications this might have for the revenues that RSP could earn and the viability of the development overall. Azimuth helpfully identify the factors that airlines, forwarders and shippers would need to take into account in considering the desirability or otherwise of relocating operations:

- *"The cost of physical relocation*
- *Cancellation of long-term contracts*
- *Loss of economies of scale, although if an entire operation is switched, economies*
- *of scale would be gained at the new airport*

[39] Azimuth Report Vol III, para. 4.0.3.
[40] See Table 1.1 of our November 2017 report.
[41] Azimuth Report Vol III, para 2.2.10.

- *Market effects such as marketing new routes and a potential loss of custom in the*
- *early years following the switch*
- *Network effects lost by switching to a smaller airport*
- *Capacity constraints at other airports, particularly in slot allocations*
- *Sunk costs such as an airline's investment in the airport from which they are switching"*

This means that any decision to relocate to Manston would be costly and would only be taken in the face of major disadvantages. Notwithstanding the claimed advantages of a dedicated purpose built cargo airport, we do not believe that these would outweigh the costs of switching or the fundamental disadvantages of being wrongly located in terms of serving the UK market.

3.28 Given these switching costs, the only way any freighter movements could be attracted to use Manston would be by offering lower prices than elsewhere, not least to compensate for greater trucking distances and time to the principal distribution centres in the UK Midlands (see our November 2017 Report and the Altitude Aviation Advisory Report of November 2017). We understand that this was the case when the Airport was previously operational and it almost certain to be the case if it re-opens. The need to charge lower prices would necessarily have an impact on the viability of the Airport, given the scale of RSP's claimed proposed investment which we discuss further in **Section 7**.

3.29 At 17,170 freighter aircraft movements and following DfT's assumption of no or negligible growth in dedicated freighter operations to/from the UK, then Azimuth's projections would result in Manston having attained a market share of 30% over 20 years (or 50% of international freighter aircraft movements), almost entirely at the expense of other airports. Again, the implications of such displacement need to be considered, not least in terms of whether there is actually a need for Manston given the capacity available at other better located airports to meet the demand.

3.30 The key point to make here is that the Azimuth forecasts are silent on the extent to which its forecasts rely on displacement from elsewhere, which has implications for any assessment of the net economic value of activity at Manston within the socio-economic assessment when measured, as Azimuth do, at a national scale (see later in this section). When the nature of the UK air freight market is properly understood (see next section), we consider the extent of displacement of freighter activity implied if Azimuth's 'forecasts' were correct as simply implausible, further invalidating the assumptions that underpin the case for the development.

3.31 Fundamentally, the Azimuth 'forecasts' appear to rely on substantial displacement of dedicated freighter aircraft movements from other airports that have already invested in the infrastructure to handle such movements, or, as we discuss further in the next section, already have adequate capacity to handle air freight, including the reasonably expected number of dedicated freighter movements. This is not plausible. Hence, the only opportunities for Manston will, in all likelihood, be niche operations not currently being served from elsewhere. In practice, we would expect the latter outcome to be more likely, meaning that there would be very limited, if any, demand for Manston.

Fleet Mix

3.32 Even if the 'forecasts' had any credibility at a headline level, which they do not, there are substantial discrepancies in how the forecasts have been disaggregated to inform the environmental assessment. These discrepancies further undermine any credence that can be placed on the forecasts themselves, particularly given that they are essentially derived from subjective judgements as to the airlines that might operate and the types of aircraft they would use.

3.33 The fleet mix proposed for Manston is set out in Appendix 3.3 of the ES (Vol 6). The information presented shows the expected operating airlines (as discussed above), the aircraft types and whether the operation is expected to be during the day or night time. Without prejudice to our view about the realism of the level of freighter aircraft movements projected, we consider here the reliability of the specific fleet mix forecast that underpins RSP's case.

3.34 In the first instance, we note discrepancies between the mix of claimed aircraft types (sizes) set out in Appendix 3.3. of the ES and those shown in the Azimuth Report (as well as between versions of the Azimuth Report) and the mix of aircraft types shown as the basis of assessment in Table 3.7 of the ES for Year 20. We illustrate the discrepancy in **Table 3.1** below.

Table 3.1: Fleet Mix of Freighter Aircraft by Aircraft Size Category (ICAO Design Code)

Code	C	D	E	F
Original Azimuth Vol III, Table 2	43%	42%	13%	2%
Updated Azimuth Vol III Table 2	43%	17%	40%	0%
ES Table 3.7	43%	40%	17%	0%
ES Appendix 3.3	43%	12%	40%	5%
Source: RSP Application Documents				

3.35 Hence, there appears to be confusion as to the actual forecast usage of Manston by RSP. No explanation is provided as to the reason for these discrepancies, or indeed why the fleet mix projections changed between the original version of the Azimuth Reports and the final submitted version. This is material as the airfreight tonnage 'forecasts' are apparently derived from assumptions made about the average tonnage per aircraft[42] so changing the fleet mix should inevitably have resulted in changed tonnage projections given the changing fleet mix assumed. The fact that the total airfreight tonnage 'forecasts' set out by Azimuth have not changed is a further illustration of the cavalier way in the forecasts and the whole case have been put together.

[42] Ibid, para 3.2.2.

3.36 Such inconsistencies must inevitably raise further doubts about the robustness of the forecast overall. These discrepancies have implications for the assessment of infrastructure required and the assessment of environmental effects[43] and reduce any reliance that can be placed on the assessments given that the basis of assessment appears to be different from the asserted Need Case as set out in the Azimuth Reports.

Pattern of Operations

3.37 The pattern of aircraft movements projected by RSP for Manston, in terms of its day/night balance, is inconsistent with industry norms. It is our view that the proposed day/night operating pattern is a further reason why the air freight forecasts for Manston are unattainable.

3.38 In the first instance, we have looked at the pattern of aircraft movement operations that we would expect based on the patterns seen elsewhere in the UK for similar types of aircraft, operator and destinations. Although Appendix 3.3. of the ES gives an indication of the proportion of movements by each aircraft type that would operate in the day time and the night time, no explanation is given for these day/night splits. In particular, it is not clear how the ES allocation of flights by day and night would fit with the airlines' required operating times to meet customer requirements. Whereas it may be possible to confine some specialist ad hoc freight operations to operate only within the day time period (07.00-23.00), many dedicated freighter operations are geared to collecting goods at the end of the working day, transporting them during the night and ensuring early morning deliveries the next day. This is particularly so for the integrators, for whom it is key to their business model and which are proposed in the ES forecasts to make up 48% of all freighter movements at Manston in Year 20. For an integrator, such as DHL, the timings of flights are, in large, part geared to the requirements for connecting operations at their main European hub in Leipzig and so are non-negotiable.

3.39 Without prejudice to our views on the overall number of freighter aircraft movements projected for Manston or, specifically, the likelihood an integrator operating to Manston at all (considered further in the next section), we have examined the validity of the pattern of operation proposed by RSP, particularly in relation to whether it is realistic to claim that Manston could operate as a major air freight hub with such a small number of night flights. In order to consider the reasonableness of the pattern of movements assumed by RSP (as set out in the ES), we have used our understanding of flight patterns and fleet mixes for cargo operations at other UK airports, specifically referencing the UK's main airport for dedicated freighter operations East Midlands Airport (EMA) current cargo movement schedule[44]. **Table 3.2** below shows that 56% of the total freighter aircraft movements at EMA operate between the hours of 23:00 and 07:00.

[43] For the purpose of our infrastructure assessment later in this report, we have worked from the more detailed data set out in Appendix 3.3 of the ES.

[44] EMA Cargo Schedule - http://aerofred.juice.org.uk/EMA/east_mids_cargo.html

Table 3.2: East Midlands Cargo Schedule Splits For Day Time And Night Time Movements By Operator Type				
	Integrator	**Mail**	**Other**	**Total**
Day Time Movements	37%	31%	74%	44%
Night Time Movements	63%	69%	26%	56%
Source: York Aviation Analysis of EMA Cargo Schedule[25]				

3.40 Clearly, this is significantly different from the 86%/14% day/night split of freighter aircraft movements assessed by RSP in the ES based, we assume, on the requirements proposed by Azimuth. As previously explained, this is in large part because the integrators, which make up nearly 64% of freighter movements at EMA operate to specific patterns linked to overnight delivery. It is, therefore, important to note that by RSP's forecast show that only 32% of Manston night movements are expected to be by integrators, despite such operations being projected to make up 48% of all freighter aircraft movements, whereas 70% of total night time movements at EMA are by integrators. This strongly suggests that the dependence of the integrators on night time operations has not been properly reflected in RSP's assessments.

3.41 We have used information on the patterns of operation observed for integrators, mail operators and for general air freight operations to assess the pattern of operation which the airlines would naturally seek to operate. We would have expected the rationale made for the assumed day/night time split of operations to be have been fully explained in RSP's Need Case (the Azimuth Reports) and the ES. It is not.

3.42 In the first instance, we have assumed that freighter operations are principally on weekdays and so have assumed 250 operational days per year. To the extent that some freighter operations might be at weekends, the effect of this assumption will have been to over rather than understate the number of daily movements. However, the assumption will be neutral in terms of its effect on the day/night balance of movements. We have applied RSP's assumptions as to the extent to which movements would bunch into busier periods (the 'Busy Day' multiplier as set out for each type of movement in Appendix 3.3 to RSP's ES).

3.43 Our specific assumptions for the main market sectors are as follows:

- *Integrators* - Based on the movement types expected by RSP/Azimuth to operate at Manston, with over half of the integrator movements expected to be ATR72s or other smaller Code C[45] turboprop aircraft, experience at other airports shows that these aircraft tend to operate a late evening arrival, early morning departure pattern as they act principally as domestic feeders from/to the UK's main integrator bases at East Midlands and Stansted. Closer inspection of the integrator fleet mix and, specifically, the volume of turbo props in the predicted aircraft movements by RSP has led us to estimate a higher percentage of movements requiring to operate at night than the 63% of integrator movements observed at EMA as a direct consequence of the high volume of predicted DHL/Fedex ATR72 aircraft operating feeder routes in Azimuth/RSP forecast, taking into account the times at which they will require to operate to fulfil the customer requirements. If there were fewer turboprops in the mix, this would, of course, have negative implications for the noise assessment assuming they were replaced by jets.

  Using realistic operational timings to the ES fleet mix leads to a roughly 10%/90% split of movements day to night for the integrators. EMA has a higher proportion of larger integrator aircraft in its operation as it fulfils a secondary hub role itself, which results in a proportion of the movements by these larger aircraft operating outside of the night period. In total, only 4% of integrator movements at EMA are by turboprop aircraft such as the ATRs, with a further 29% of movements by full size Code C aircraft, such as the B737. The remaining 67% of integrator movements at EMA are by the larger code D and E aircraft such as B767s and B777s. This reflects its role as an integrator hub for the UK given its central location.

  RSP's assumed mix of aircraft types for the integrator operation further highlights the lack of realism in the presumption that a substantial integrator operation is plausible at Manston, as it relies on a large number of feeder flights by small aircraft serving other hubs which would, in practice be more likely to be dispersed across a range of airports so as to serve local markets with efficient close out times for the collection of urgent packages. Manston simply could not fulfil that role and is not in the correct location to operate as a hub itself.

- *Mail* – Based on the busy day forecast calculated from RSP/Azimuth's data, there were 3 daily movements on average for postal services, which we rounded up to 4 to allow for a realistic pattern over a single 24-hour period. The RSP/Azimuth split of movements between the day and night was suggested as 50%/50%. However, as shown in **Table 3.2,** we found that 69% of mail movements were typically at night based on the EMA experience. This is hardly surprising given that the principal requirement is for overnight mail deliveries. Given the small number of such movements expected at Manston, it seems likely that all would need to operate during the night.

[45] The aircraft Codes referred to are aircraft size categories that determine the physical dimensions of the airport infrastructure required to handle them.

- *Other Freighters* – We have included all other freighter movements in this category. This is wider than the RSP/Azimuth forecast, which specifies 'Other Freighters' as relating only to a small number of movements by B737-300 freighter aircraft. For the purposes of building the busy day schedule, we have considered all non-integrator and non-mail movements as 'other'. RSP/Azimuth propose that, of all these other cargo movements, nearly 93% will be during the day. However, considering the nature of the flights proposed by Azimuth and typical operating times for these flights having regard to world time zones, we found that a more likely day/night distribution to be 80%/20%. This is closer to the split we found at EMA for general cargo operations of 74% day/26% night.

3.44 On the basis of a rational patterns of operations for RSP's claimed mix of aircraft and operators, we find that the same overall pattern of operations as EMA would be required if Manston is to allow airlines to fly when they wish to do so, i.e. 44% day and 56% night. Our analysis would strongly suggest that the pattern of day and night time operations being proposed by RSP is not realistic and that, for Manston to have any hope of attracting freighter operations in line with Azimuth's projections, there would have to be a substantially greater number and proportion of the operations taking place at night, giving rise to substantially different noise implications.

3.45 The pattern of operations put forward for Environmental Assessment by RSP, hence, runs entirely contrary to what is claimed in RSP's Statement of Reasons (para 4.23) that:

"other unique advantages of the Proposed Development include: dedicated air freight stands, aprons, handling, storage and processing facilities; prioritisation of freight with quick turnaround and unloading time of aircraft; and availability and flexibility of slots none of these advantages are likely to be sustained by any of the other airports in the south east of England",

and in the NSIP Justification Statement[46] that:

"our business model is to provide sufficient capacity to be able to accommodate aircraft when the airline wants to operate rather than to suit the airport through slot management, which requires a much greater availability of stands."

3.46 The proposals for Manston rely on constraining the times at which airlines could operate to a sub-optimal slot pattern, particularly for the intergrator and mail operations that require to operate largely at night. More likely, when coupled with the structural factors in the air freight market that we discuss further in the next section, the consequence of seeking to force an integrator to adopt RSP's proposed operating pattern reinforces our expectation that integrator operations are simply an unrealistic aspiration at Manston. This is significant as they account for 48% of the projected freighter aircraft movements in Year 20 (and higher in earlier years). If integrator operations are excluded from RSP's 'forecasts' then the number of freighter movements in Year 20 is only 8,843, leaving aside other errors and discrepancies in the assessment. Royal Mail flights, which would also require to operate at night make up a further 4.5% of freighter aircraft movements in RSP's 'forecasts'.

[46] RSP NSIP Justification, para. 29.

3.47 Furthermore, there is some confusion across the submission documents as to whether integrator operations are a core part of the demand projections in any event as the Planning Statement (para. 9.39) comments that:

"Additionally, there is the potential to attract an integrator to Manston Airport, which would dramatically increase the profitability of the airport."

This implies that this is an upside potential not part of the core Business Case as claimed to be set out in the Azimuth Reports and, hence, the assessment of need would need to exclude such operations in the core case and illustrate only the upside potential if such operations could be attracted.

Night Quotas

3.48 There remains further confusion regarding the intentions for night time operations as we understand that RSP has in public statements, on occasion, suggested that there would be no scheduled aircraft operations at night, i.e. the Airport would only accept delayed aircraft operating in the night period. Such a situation would be even more untenable for integrator and mail operations. Such a ban does not form part of the Noise Mitigation Plan and, hence, we have considered the implications of the Plan as published[47].

3.49 This gives rise to another key point regarding the fleet mix as RSP's Noise Mitigation Plan states that only aircraft of QC8 and QC16[48] will be banned from operating at night. This is inconsistent with best practice at other airports that ban scheduled operations at night by aircraft of greater than QC2 or even QC1[49]. The lax policy being adopted by RSP for Manston could act as an incentive for the operators of noisier aircraft to use the Airport within the proposed night quota available. Whilst this might bolster the attractiveness of the Airport for ad hoc freighter movements, e.g. by Russian airlines, it would not overcome the fundamental restriction on the principal operations by integrators such as DHL which would be heavily constrained by the night movement restrictions proposed in terms of the number of movements allowed within the quota.

3.50 We note that the proposed night movement quota of 3,028 QC points for the period 23.00-07.00 has been further reduced compared to the 4,000 QC points proposed for the period 23.000-06.00 at the consultation stage, with the additional 2,000 QC points available for scheduled passenger departures during the period 06.00-07.00. This imposes further severe restrictions on the ability of the cargo and passenger airlines to schedule their operations at times necessary to their operational viability in terms of meeting customer needs for delivery of goods and in ensuring optimum aircraft utilisation and efficiency.

[47] RSP 2.4: Noise Mitigation Plan.

[48] The QC (Quota Count) system is a classification system for the noise made by aircraft and has been adopted at most of the main UK airports as the basis for defining a night movement quota related not just to the number of movements but the level of noise each aircraft makes. The higher the QC number the noisier the aircraft. A movement by a QC16 aircraft would be equivalent in quota terms to 16 movements by a QC1 aircraft.

[49] Luton - https://www.acl-uk.org/wp-content/uploads/2016/10/Local-rule-1.pdf , Birmingham - https://www.acl-uk.org/wp-content/uploads/2018/10/Night-Flying-Policy-2018-2021.pdf , Stansted - https://live-webadmin-media.s3.amazonaws.com/media/3682/stn-noise-action-plan-consultation-15818.pdf.

3.51 Furthermore, examination of the day and night time split of movements as set out in Appendix 3.3 of the ES suggests that by Year 20 there are expected to be approximately 10 aircraft movements per weekday night[50] according to Azimuth/RSP's forecasts. Although the QC points per movement are not clearly set out in the ES, an approximate estimate using Heathrow's QC point attribution by aircraft type[51] would suggest that an average weekday quota count of between 8 and 8.5 based on the night movements indicated in Appendix 3.3 of the ES and assuming an even balance of arriving and departing aircraft movements per night. This would amount to around 2,460 movements per year using just over 2,000 of the 3,028 proposed night quota points, dependent on the split of arriving and departing aircraft and the precise aircraft variant used. Whilst this would allow additional movements to be scheduled at night, it would still not be sufficient to allow for an integrator operation to be established, even assuming that Manston was geographically in the right place – a point that we discuss further in the next section. However, it is notable that, assuming the noise assessment has been based on the data supplied in Appendix 3.3 of the ES, the full impact of the proposed noise mitigation strategy and quota appears have not been assessed in the ES.

3.52 Appendix 3.3 of RSP's ES indicates that none of the passenger aircraft operations would be at night. This is equally unrealistic. We set out in the next section the typical rotation pattern for a based low cost carrier (LCC) aircraft at a regional airport. These airlines maintain low fares by optimising the time that the aircraft are in the air each day. To achieve this, they typically make their first departure before 07.00 and often return after 23.00. Hence, we would expect there to be at least some night movements by passenger aircraft in addition to freighter movements. Constraining an LCC to daytime operations only would render Manston particularly unattractive as a base for aircraft.

Socio-economic Assessment

3.53 Whereas our previous criticisms of Azimuth's approach to air freight movement projections have been ignored, there appears to have been some attempt to take on board criticisms of the socio-economic assessment (Azimuth Reports Vol IV). Nonetheless, the assessment of the socio-economic impact of the development remains badly confused, unclear and riddled with errors and ultimately, even if the socio-economic assessment undertaken were robust, it would be rendered meaningless by the manifest errors in the demand 'forecasts' that feed into it. What is put forward with RSP's submission should, therefore, be accorded no weight whatsoever.

3.54 In our previous report, we considered the methodology adopted by Azimuth Associates in some detail and although some minor changes have been made to the approach reflecting our comments, little has really changed. We would, therefore, refer the Examining Authority back to our November 2017 Report[52] for a complete assessment of the RSP case. However, we would reiterate a number of key points:

[50] Freighter movements typically operate principally on weekdays.

[51] https://www.heathrow.com/file_source/HeathrowNoise/Static/HCNF_WG1_QC_and_chapter_correlation_Feb_18.pdf .

[52] York Aviation November 2017 Report, Section 5.

- The study area that is being considered by this assessment remains completely unclear and Azimuth repeatedly uses assumptions that would not be appropriate for the assessment they appear to be trying to make at the level of Kent or East Kent. At points, it appears that the impact of Manston is being considered at a UK level and multipliers are being used that reflect this size of study area. However, at the same time the Azimuth Reports and the Planning Statement talk about impacts in much more localised areas, particularly East Kent, but no change appears to be made to the multipliers to consider these smaller areas. Multipliers for smaller geographic areas must be smaller than those for larger areas as they will not include as much supply chain or as much expenditure of employees' salaries. Failure to realise this suggests a fundamental lack of understanding of how multipliers work and how they should be applied. As RSP's submission stands, it does not actually include a socio-economic impact assessment because it does not properly define the geographic area it is assessing. All that is presented are a series of random, meaningless inferences of what the impact of an airport might be.
- Azimuth continue to use an on-site employment density for a re-opened Manston that is too high. We continue to believe that Prestwick Airport is a better comparator for Manston, with a density of around 650 jobs per million passengers per annum or 100,000 tonnes of freight. Azimuth has revisited their assumptions and concluded that East Midlands Airport is an appropriate comparator, with a job density of around 887 jobs per million passengers per annum or 100,000 tonnes of freight[53]. However, what Azimuth have failed to account for is the substantial amount of non-aviation related employment based on the Pegasus Business Park at East Midlands which is included in this employment estimate. This means that the basis for the calculation used is inflated resulting in a higher employment density. If this non-aviation related employment were to be removed from the assessment the employment would actually be similar to that at Prestwick and is a better comparator to Manston given that much of the non-airport related employment at EMA relates to businesses located there adjacent to the M1 and centrally located for the three main cities in the East Midlands region.
- Azimuth are also incorrect[54] to assert that our economic assessment set out in our November 2017 Report must be wrong because our estimate of catalytic impacts in terms of jobs is lower than our estimate of direct airport related jobs (based on RSP 'forecasts'). Whilst we would agree that the catalytic effects of airports are often larger than the direct, indirect and induced effects, that does not make it true in all cases. Consideration of individual circumstances is vital. Our assessment considered a properly defined area, Kent. Given Kent's location, its industrial base, population and the size of freight catchment areas, it is unlikely that a significant number of potential freight users will be located within that area and, hence, the amount of impact captured will be relatively small. The passenger services envisaged are likely to be focussed on outbound leisure markets and, hence, inbound tourism impacts are likely to be small. In Manston's case, there is no reason to expect significant catalytic effects within a properly defined catchment area.

  In practice, the catalytic effects tend more often to manifest themselves in increased productivity and so appear as GVA[55] effects rather than necessarily employment effects. Azimuth do not appear to understand this and have not taken into account how any catalytic effects would actually materialise within the local context.

[53] This economic impact assessment was undertaken by York Aviation.
[54] Azimuth Reports Vol IV, para 4.3.6.
[55] Gross Value Added

- Following on from the failure to properly define a study area and the use of national multipliers, it should again be re-emphasised that if Azimuth are looking at national effects they failed to allow for any displacement of economic activity from other parts of the UK from the abstracting of demand from other airports. In our view, Manston is not going to generate new demand for freight services. It will have to capture demand from other airports. This will have an effect on these other airports in terms of their ability to support employment.
- Azimuth has also failed to properly define the baseline for the socio-economic assessment. Their assessment has implicitly assumed that if the RSP proposals are rejected then the Manston site will not support any economic activity. This is again inaccurate. The current owners have put forward plans for a mixed use development and this should be considered as the counterfactual for the assessment. Any impacts from RSP's proposals should be reported net of impacts from the alternative uses for the site.

Passenger Terminal Parameters

3.55 As we discuss in **Section 6**, no explanation or justification is provided for how the air freight movement or tonnage forecasts have been converted to facility requirements. The requirements are simply reported in Table 6 of Vol III of the Azimuth Reports. This is a significant gap in the justification for the scale of facilities required, as we discuss further in **Section 6**.

3.56 Despite there being no information provided in relation to the cargo terminal requirements associated with the freight tonnage forecast, some information is provided in relation to the scale of passenger terminal facilities required in Table 7 of Vol III of the Azimuth Reports. In this case, there are obvious errors of analysis in terms of the 'pax per hour' requirements set out. There can be no certainty that similar errors have not been made in assessing the facility requirements for air freight but no explanation is provided.

3.57 At para. 4.0.5 of Vol III of the Azimuth Reports, it is stated that a low cost carrier (LCC) (elsewhere shown to be assumed to be Ryanair) would base 2 aircraft at the Airport initially, increasing to 3 from Year 6. Based on the pattern of Ryanair operations seen elsewhere across their network, these aircraft are likely to all need to depart in the first operational hour of the day in order to achieve optimum utilisation of the aircraft over the day. Similarly, they are likely to arrive back at a similar time of night, particularly if night time operations after 23.00 are not expected (as indicated by the ES Appendix 3.3 data). Hence the terminal would need to be sized to accommodate the full passenger load from 3 aircraft within an hour for each of arrivals and departures. Ryanair's current fleet of aircraft (B737-800s) typically have 189 seats and, over time, these will be replaced by B737 Max aircraft of 200 seats. Hence, at Ryanair's typical summer load factor of 97%[56], the number of passengers per hour that the terminal would be expected to handle in each direction would be 550-580. It is also possible that the KLM operation to/from Amsterdam would also operate at similar times in order to maximise connections available at the Amsterdam hub increasing the number of passengers requiring to be handled within an hour.

[56] https://investor.ryanair.com/traffic/

3.58 According to Table 7 of Vol III of the Azimuth Reports, the required terminal capacity is 171 departing passengers per hour (less than the load of a single Ryanair aircraft) and 43 arriving passengers per hour or around 23.5% of the load of the smallest Ryanair aircraft. This simply does not make sense, particularly in terms of the large differential between departing and arriving capacities assumed. Should the capacity of the terminal be constrained to these levels, it is unlikely that a single aircraft could be based at Manston at all. The arrivals capacity would relate only to the ability to handle a single very small turbo-prop aircraft at any one time. We consider further the terminal capacity requirement in **Section 6**.

Conclusion

3.59 Whilst individually some of these errors and discrepancies might seem small in scale and impact, others are highly significant and serve to undermine the credibility of the whole approach outlined in the Azimuth Reports and throughout RSP's Application Documents. The combined implications are significant in terms of whether a) the application should actually have qualified as an NSIP; b) in terms of the level of demand that Manston might attract if it re-opened as an Airport and the viability of the proposed operation; and c) whether the environmental assessments undertaken are robust.

3.60 The most significant of these errors relate to:

- the lack of any soundly based forecasts – instead of forecasts based on an understanding of markets, costs and real potential, RSP's case is founded on a flawed list of airlines that it claims will definitely operate at Manston and then grow their business at Manston. This is no more than a 'guesstimate', without any supporting evidence. These are not 'forecasts' in the sense that is normally recognised in the industry;
- the lack of realism in the fleet mix overall and the assumed pattern of day/night time operations, particularly in relation to the implications for the prospect of integrator and mail operations being attracted to use Manston at all. This further undermines the credibility of the short term 'forecasts';
- the overstatement of longer term demand projections through the use of unjustified growth rates.

3.61 These errors and inconsistencies render the so-called 'forecasts' completely unreliable as a basis for assessing the extent and nature of any usage of Manston in the event that the Airport re-opens. In the next section, we set out our assessment of the market potential for Manston to assist the Examining Authority.

4 UNDERSTANDING THE AIR FREIGHT SECTOR

In this section, we summarise the performance of the UK Air Cargo market and demonstrate that there has been an inexorable trend away from the use of dedicated freighter aircraft towards a clear preference for the use of bellyhold capacity on passenger aircraft on the growing network of global air service connections. The exceptions to this are the operations of the integrators, which have well established UK operational bases, particularly at Heathrow, East Midlands and Stansted serving the main conurbations.

There is a strong concentration of freight handling and forwarding facilities in the vicinity of Heathrow, drawn by the air freight capacity offered by the global hub network of air services. This means that much airfreight is inevitably consolidated at Heathrow to avail of the lowest possible freight rates using bellyhold capacity. These facilities are being modernised to increase capacity and this will reinforce the dominant position of Heathrow in the sector. Development of the third runway at Heathrow will enable that Airport to double its freight handling capacity, principally in bellyhold capacity but also for dedicated freighter aircraft to the extent required by the integrators or to supplement bellyhold capacity in core markets and to feed the hub.

Alongside growth at Heathrow, there is increasing bellyhold capacity being made available at other airports as they develop a broader range of long haul services, in particular at Manchester. This may be expected to see further growth in consolidation activities adjacent to other major airports as their global connectivity increases.

Overall, within the context of an industry dominated by consolidation, bellyhold capacity and integrator operations, it is difficult to see any potential role for Manston other than in relation to niche services and specialist consignments, similar to the cargo handled when it was previously operational. This is unlikely to result in usage of Manston Airport by dedicated freighters to any greater extent than historically seen.

Introduction

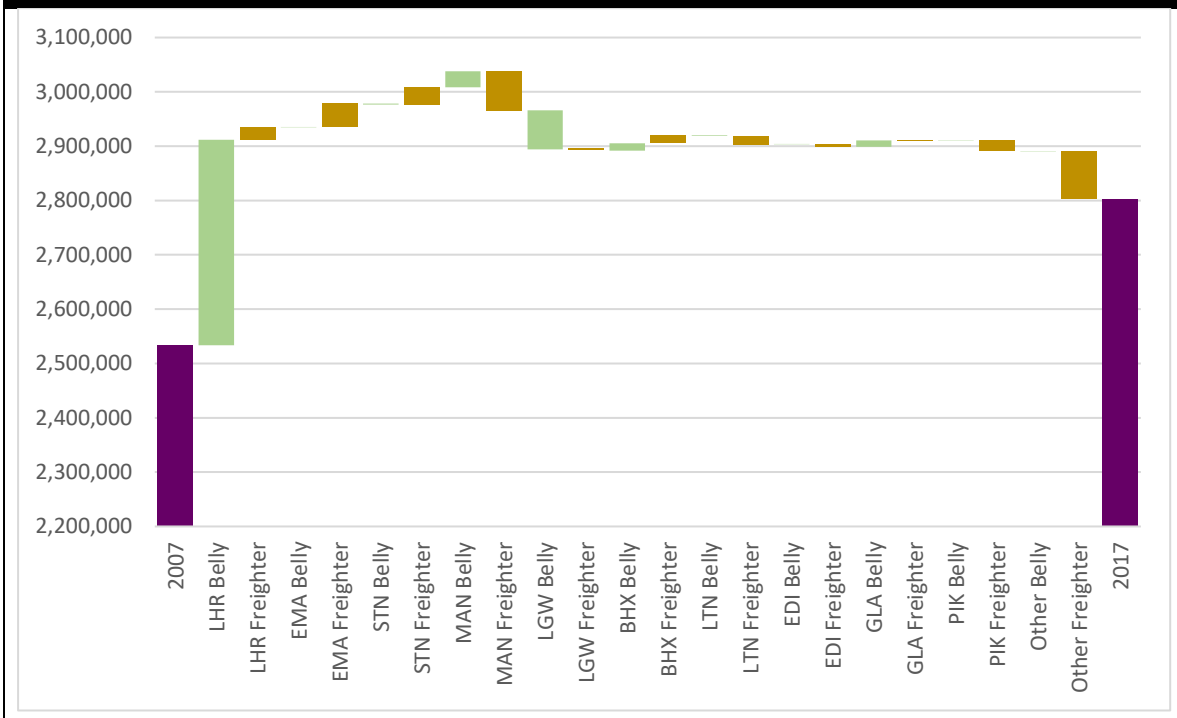
4.1 In this section, we update our consideration of the air freight sector in the UK, the way it functions and the key trends that have been observed in recent years. This analysis updates the evidence presented in our November 2017 report, including new data where it is available. However, it should be emphasised that the key messages from our previous report have not changed and our views on the key dynamics in the market and their implications for Manston similarly have not changed. The November 2017 analysis is important as it updates and correctly interprets the work that we undertook for the Freight Transport Association and TfL in 2015 upon which Azimuth still seek to rely as the basis for their justification of the number of freighter aircraft movements that Manston might attract.

Historic Performance of the UK Air Cargo Market

4.2 The evidence set out in our November 2017 Report and in the Altitude Aviation Advisory Reports[57] provides a detailed picture of the UK air cargo market over the last thirty years and we do not seek to repeat that analysis here. However, in the context of considering whether RSP has presented a compelling case for development, we have sought to re-emphasise several key themes which are central to any consideration of the UK air freight market generally and a re-opened Manston's potential market performance specifically.

4.3 What is evident is that there has been a fundamental structural shift to using available bellyhold capacity in passenger aircraft and away from pure freighter operations. This is illustrated in **Figure 4.1**, which sets out a bridge diagram between 2006 and 2017 showing the change in freight handled via bellyhold and pure freighter at major UK freight airports.

Figure 4.1: Drivers of Change in the UK Air Cargo Market – 2007 to 2017[58]



Source: York Aviation analysis of CAA Statistics

4.4 There are a number of key points to note:

[57] Altitude Aviation Advisory, Analysis of the Freight Market Potential of a Reopened Manston Airport, November 2017 and Addendum: UK Regional Airport Financial Performance and Debt Funding Characteristics, February 2019.

[58] LHR = Heathrow, EMA = East Midlands, STN = Stansted, MAN = Manchester, BHX = Birmingham, LTN = Luton, EDI = Edinburgh, GLA = Glasgow, PIK = Prestwick.

- the market has continued to consolidate into Heathrow, in particular through increased bellyhold capacity, enabled by the ongoing rebalancing of that airport's passenger network towards long haul destinations. There has been a 29% growth in tonnage carried in the bellyholds of passenger aircraft and 31% on dedicated freighter aircraft over the period 2007 to 2017[59], with Heathrow increasing its share of the total UK air freight market from 82% to 86% in terms of bellyhold freight and from 8% to 11% in terms of freight carried on dedicated freighter aircraft. This increase in market share has been achieved even in circumstances where the airport has been operating with a capacity constraint and whilst other airports have had spare capacity available for dedicated freighter aircraft, indicating that there have been other economic and structural factors at play, including the structure of the freight forwarding sector and the economics of consolidation;
- elsewhere in London, Gatwick has seen both bellyhold and freighter capacity significantly eroded as that airport has become more capacity constrained and it has focussed increasingly on low fares passenger airlines offering short haul services, albeit this trend has started to reverse as more long haul operations come on stream with Gatwick recording a 50% increase in tonnage carried on passenger aircraft between 2017 and the rolling year to October 2018;
- Stansted has seen 14% growth in freighter tonnage but has not increased its freighter activity despite having spare slot capacity available to do so strongly suggesting that the effect of any capacity constraints at Heathrow have not resulted in displaced dedicated freighter demand to other London airports;
- East Midlands, with major DHL and UPS bases, has seen 17% growth in air freight tonnage on an 11% increase in freighter movements over the period 2007 to 2017 and had been the only airport that has seen significant growth in pure freighter traffic, but again this has not offset losses in freighter traffic from elsewhere, suggesting that, for more general air cargo, bellyhold capacity is fundamentally more attractive, even potentially if this involves trucking to more distant airports;
- this is reinforced by what has happened at Manchester, which has seen 21% growth in its bellyhold air cargo market, relating to its growing long haul network, but has seen freighter traffic fall away significantly, with a 91% reduction in cargo carried in dedicated freighter aircraft despite the airport having spare capacity to handle such freighters. Again, this demonstrates that a shift to bellyhold is not driven by capacity constraints as Azimuth claim but by underpinning structural and economic factors;
- the growth in bellyhold traffic at Birmingham is also probably reflective of its growing long haul passenger network;
- in general, there has been a noticeable switch towards the use of bellyhold capacity. Since 2007, pure freighter cargo's share of the UK market has dropped from 36% to 30%, while actual freighter tonnage has dropped by 9%;
- it is interesting to note the performance of Prestwick in the context of Manston, as it provides perhaps the most obvious direct comparator, with a similar sized freighter operation in 2007 to Manston at its peak. Freighter traffic at that airport has dropped by 64% since 2007. It is also worth noting that, in the meantime, Prestwick has also had to be nationalised to maintain operations as it had been heavily loss making for a considerable period of time.

[59] York Aviation Analysis of CAA Airport Statistics.

4.5 Whilst the volume of air cargo flown to/from the UK's airports over the past 15 years has grown only incrementally, there have been considerable changes in the way that demand has been serviced, which again reflect the drivers and constraints on demand described above. Essentially, the market has been consolidating to a small number of airports and bellyhold cargo has become more dominant.

Understanding the Sub-Markets

4.6 The air freight market can be categorised into 4 sub-segments, as set out in a report by Steer for Airlines UK[60] was published by the DfT to accompany the Aviation Strategy Green Paper[61]. These are:

- **General Air Cargo** – which makes up the majority of air cargo and is carried principally by IAG Cargo (British Airways and partners), Virgin Atlantic and a number of American and Asian airlines. As Steer make clear, such cargo is predominantly carried in the bellyholds of passenger aircraft and so would not be available at all to Manston;
- **Express Freight** – carried principally by the four main integrators (DHL, Fedex, TNT and UPS). The integrators use their own aircraft for intra-European flights and on the main long haul sectors but use bellyhold capacity for the remainder of their operations. These operators are well established at East Midlands, Stansted and Heathrow, with satellite operations at other airports such Luton, Manchester, Edinburgh and Belfast. The report by Steer also makes clear, as we set out in the previous section, the high dependence of the integrators on night time operations which would rule out operations at Manston based on the proposed night flying policy:

"Integrator stakeholders consulted as part of this study stated that the way in which these operating restrictions [Night time operations] a*re applied impacts their ability to operate effectively, as the express business model (described above) is dependent on being able to ship goods during the night to enable maximum productivity for customers who rely on shipments being picked up close to the end of the working day and delivered as early as possible the next"*[62];

- **Specialist and Niche Cargo** – classified as freight that has specific requirements in terms of storage, security or regulatory requirements, including perishables or dangerous goods. Such goods are unlikely to be suitable for carriage in bellyhold capacity so may require dedicated aircraft;
- **Mail** – where international mail principally uses bellyhold capacity but chartered freighters can be used for some longer distance mail deliveries between the main centres of population in the UK.

Examination of these categories demonstrates that the only category that might have any use for Manston would be the Specialist and Niche Cargo category. Although, no data is available, this is a very small part of the overall airfreight market.

[60] Assessment of the Value of Air Freight Services to the UK Economy, Steer, October 2018, paras. 2.8 to 2.16.
[61] Aviation 2050, The Future of UK Aviation, a Consultation, Department for Transport, Cmnd 9714, December 2018.
[62] Assessment of the Value of Air Freight Services to the UK Economy, Steer, October 2018, paras. 2.33.

The Economics of Bellyhold

4.7 From discussions with airlines, we understand that modern long haul aircraft operating primarily passenger services from airports such as Heathrow or Manchester can typically carry around 15 tonnes of cargo per sector and airlines would expect to earn around 10% of total revenues from cargo. Whilst this is only indicative, it would follow that an airline may expect to earn around 0.66% of the revenues from operating a flight from 1 tonne of cargo. In contrast, a dedicated cargo flight needs to cover all of its operating costs from the cargo carried. At the average tonnage per movement projected by Azimuth for Manston[63] of c.13.9 tonnes per aircraft this means each tonne of cargo has to earn enough to cover over 7% of the costs of operating the flight. Taking an equivalent long haul aircraft (Code E), which Azimuth's work suggests could be carrying 33 tonnes per movement, this would require each tonne of cargo carried to cover 3% of the cost of the flight. Accepting that dedicated cargo aircraft like for like with the same aircraft type may have lower operating costs per flight than a passenger aircraft (no cabin crew or meals), it would also be likely that the dedicated freighter aircraft would be an older variant and use more fuel than the more modern equivalent that tends to be used on passenger operations, particularly from an airport such as Heathrow. The two factors may be expected to largely cancel each other out. On balance, then, a tonne of cargo carried in a dedicated freighter aircraft is likely to cost around 4.5 times more per tonne to transport than the same tonne of cargo carried in the bellyhold of a passenger aircraft. This will almost certainly translate into a higher price to the shipper.

4.8 It is for this reason that we see an inexorable shift from the use of dedicated freighter aircraft to bellyhold capacity due to the sheer cost advantages of availing of bellyhold capacity. The availability of bellyhold capacity is a powerful reason why the UK has lower dependence on dedicated freighter aircraft than the global average. We see this shift to bellyhold in the data from the UK regional airports noted above, which have seen little or negative growth in dedicated freighter operations (except for the integrator operations at EMA) but growth in flown cargo tonnage as their long haul passenger operations offering bellyhold capacity have grown. This demonstrates that, contrary to the assertion by Azimuth that the shift to the use of bellyhold capacity in the UK is a response to a shortage of capacity for dedicated freighter aircraft at the London airports, the shift towards a preference for bellyhold capacity for the carriage of the majority of airfreight reflects the economics of the industry, i.e. shippers and forwarders choose the most cost effective solution for moving goods from A to B which may include an element of trucking to avail of the lowest air freight rate.

4.9 Indeed, the Steer Report confirms that dedicated freighter operations are on the decline globally:

"The market for dedicated freighter services has struggled globally since the financial crisis due to falling seafreight rates and the continued rise of air passenger demand (and associated bellyhold capacity), which have driven down freighter yields. Although some UK airports have retained important integrator, and to lesser extent, freight operations, freighter activity has remained relatively flat in recent years and is currently lower than pre-crisis levels."[64]

[63] Analysis of Azimuth Report Vol III, Tables 2, 3 and 4.

[64] Assessment of the Value of Air Freight Services to the UK Economy, Steer, October 2018, para. 3.8.

4.10 The implications for Manston from this analysis are clear. Bellyhold is the preferred option for a significant proportion of the air cargo market and that this trend has intensified in recent years. This is a function of price and the relative urgency in relation to general air freight, as opposed to either express freight or niche products which may justify a higher cost dedicated freighter services such as operated at the existing integrator hubs. For express freight or niche products, shippers are prepared to pay a premium which allows the use of freighter aircraft because either speed is of the essence, or the destination is hard to reach, or the cargo is difficult to handle in some way. For general air freight, these drivers are not the same. Accepting that all air cargo is to some degree sensitive to speed of delivery, it seems that what is likely to be pushed from bellyhold capacity, in a capacity constrained environment, is less time sensitive and shippers' willingness to pay is lower. Hence, in the current market with relatively high fuel prices, freighter options are not an adequate or economically realistic substitute.

4.11 The only UK airports experiencing dedicated freighter growth are those with significant integrator activity. This suggests that Manston's likely freighter offer, on the assumption that an integrator operation would not realistically be attracted, would struggle to penetrate the market. There has been consolidation into larger airports, which again suggests that Manston will struggle to establish market presence. Finally, the experience of Prestwick, its nearest comparator in many ways, is not encouraging for Manston. Its well established dedicated freighter operation has been heavily eroded and the airport has had to be nationalised to maintain its operation. It continues to be heavily loss making, losing £7.6 million in 2017/8[65].

4.12 This is very important from the perspective of considering the potential role of Manston. It suggests it will be very difficult for the Airport to compete effectively for any traffic displaced as a result of constraints in the London market as it cannot and will not be able to provide the price, frequency and breadth of destination advantages that bellyhold freight can offer. In this context, the airports competing for cargo traffic being pushed away from Heathrow now and in the future are the large UK regional airports with growing long haul passenger networks, such as Manchester or Birmingham, and the near European global hub airports, which offer the closest substitutes to Heathrow and are within easy trucking time of, certainly, the London and South East market. In any event, bellyhold capacity at Heathrow is expected to increase substantially once the third runway becomes operational so driving down the competitive prices in the market, making it even more difficult for freighters to compete. In fact, as we have discussed above, the NPS cites one of the key reasons for the choice of the North West Runway option at Heathrow being the opportunity to double freight capacity.

The Role of Trucking

4.13 The Steer Report for Airlines UK also explains the role of trucking, noting that[66]:

"a significant amount of air freight is transported in customs-bonded trucks between the UK and continental Europe and is classified as air freight with an assigned flight number. Freight is often flown to continental Europe, particularly from Asia, as there is often more available air freight capacity than to UK airports, partly due to lack of available slots for freighter aircraft at Heathrow……..

[65] https://beta.companieshouse.gov.uk/company/SC462050/filing-history

[66] Assessment of the Value of Air Freight Services to the UK Economy, Steer, October 2018, paras 2.24, 2.25.

In contrast to goods from Asia, Heathrow stated that goods destined for North America are also often trucked to the UK, in particular Heathrow, from continental Europe in order to take advantage of cheaper rates from the UK on North American routes. As Heathrow is the primary European hub for North American passenger connections, there is a significant level of bellyhold capacity available, which means air freight rates are cheaper compared to other European airports."

4.14 There is a further reason why trucking to airports in Europe is an inherent part of the industry as also set out in the Steer Report[67]:

"Many of the largest freight airports in the EU are concentrated in North-West Europe, which is relatively well off and densely populated (therefore generates demand for imports), and is the home of a lot of European industry (therefore produces a large amount of goods for export). The close proximity of many large freight airports to the UK may also to some extent explain why so much air freight is flown to continental Europe and trucked to the UK, as there is much greater capacity available to continental North-West Europe than to the UK."

Hence, even if Manston was operational, the structural factors that mean that freight loads are consolidated at the main freight hubs in continental Europe and then trucked to and from the UK would still result in this freight being trucked and by-passing Manston. The concentration of markets around these continental European hubs also allows them to support some dedicated freighter activity, reinforced by trucking and consolidation.

4.15 As explained above, the reasons why trucking is an inherent part of the industry is cost. It is simply cheaper in overall terms to truck to an alternative airport offering cost effective bellyhold capacity than it is to seek out dedicated freighter capacity. This applies to the vast majority of general air cargo. Ultimately, shippers and forwarders seek the cheapest option. Having a dedicated freight airport at Manston would not 'intercept' this freight travelling to and from Europe as Azimuth claim[68] as such freight would still seek the cheaper bellyhold capacity regardless of the potential option of a dedicated freighter or, where a dedicated freighter aircraft was the most cost effective option, seek to operate that aircraft to the main centres of economic activity in Central Europe or the UK's main distribution focus around East Midlands Airport[69] so as to optimise distribution of goods overall.

Heathrow

4.16 As noted above, despite the acknowledged runway capacity constraints, Heathrow has increased its share of UK air freight carried. This indicates a strong structural preference for Heathrow as the UK's main air freight hub, as identified in the NPS. It is important to understand why this is so. The Steer Report referred to at para 4.6 above makes clear the importance of Heathrow within the air freight sector:

[67] Ibid, para 3.21.
[68] Azimuth Reports Vol I, para. 6.4.13
[69] Altitude Aviation Advisory, Analysis of the Market Potential of a Reopened Manston Airport, October 2017 paras. 114, 115.

"One notable feature of the UK air freight market is the huge importance of Heathrow and its surrounding freight facilities, with most forwarders having major consolidation centres in the vicinity of the airport. Very significant volumes of air freight are trucked to such facilities near Heathrow, processed and then trucked to another airport, either in the UK or in continental Europe, without ever flying in or out of Heathrow itself."[70]

4.17 The Steer Report goes on to state:

"Historically, much of the UK air freight activity is concentrated around Heathrow due to its significantly more extensive intercontinental passenger network compared to those of other UK airports. Although this remains the case, new intercontinental passenger connections at regional UK airports have increased possibilities for transporting long-haul freight as bellyhold cargo."[71]

Hence, regional airports developing bellyhold capacity are likely to be the principal gainers from any freight displaced from Heathrow as a consequence of short term constraints until R3 is operational.

4.18 Even where capacity constraints at Heathrow are noted as a potential problem, the reasons cited in the Steer Report[72] do not lend credence to there being a need for additional air freight capacity at Manston:

"The importer stated the reason such a high proportion of its goods are flown to the UK via Europe, is because the UK's air freight capacity is not sufficient to service the required import volumes. Goods are trucked as bonded freight to avoid having to undergo Dutch or German customs procedures, as the importer incurs fewer administration costs as it is only required to deal with UK customs.

The importer stated that, as most of its imports are flown in freighter aircraft, one of the reasons why it often cannot fly its goods into the UK, is because not enough UK airlines operate these types of aircraft. Many airlines that in the past operated long-haul freighter services, for example IAG Cargo at Stansted, no longer do; therefore, there are fewer long-haul freighter options available. However, the main problem the importer cited with UK air freight capacity was the quality of the infrastructure.

The importer stated that it avoids using UK airports because they are too congested and therefore not efficient; air freight infrastructure has not been upgraded in line with increased traffic, which causes delays that can be avoided at continental European airports. The importer stated that there should be better utilisation of regional airport capacity at, for example, Manchester, which was cited as a relatively good operation with not enough freight capacity."

[70] Assessment of the Value of Air Freight Services to the UK Economy, Steer, October 2018, Executive Summary.
[71] Ibid, para. 2.36.
[72] Assessment of the Value of Air Freight Services to the UK Economy, Steer, October 2018, Case Study Example at Page 11.

4.19 Properly understood, this highlights a desire for more freighter capacity at Heathrow, concerns around infrastructure constraints at Heathrow, and issues caused by the willingness of airlines to operate such flights. As the case study makes clear, Stansted and the existing regional airports provide potential available airport capacity but the lack of airlines willing to operate dedicated freighters is the issue rather than the capacity of the airport infrastructure. To illustrate the point, Cathay Pacific Airways operated a dedicated freighter aircraft to Manchester until recently but this has been replaced by more cost effective bellyhold capacity on their now daily A350 service to Hong Kong[73].

4.20 As noted above and in RSP documents[74], there have been concerns expressed about both slot constraints at Heathrow and the adequacy of capacity for freight more generally as well as the quality of the infrastructure. However, as we have made clear at para. 2.12 above, this shortfall in capacity for air freight will be addressed by R3. Indeed, recent proposals by Heathrow Airport Ltd to introduce mixed mode operations ahead of R3 will provide short term relief to the capacity constraints over the same time period as Manston might become operational[75]. In the longer term, freight capacity at Heathrow is expected to virtually double to 3 million tonnes a year from the 1.7 million tonnes handled in the rolling year to the end of October 2018[76].

4.21 Facilities at Heathrow are also being expanded and modernised in line with Heathrow's Cargo Strategy[77]. The strategy is firmly aimed at ensuring that Heathrow is able to capitalise on the opportunity offered by R3 by providing state of the art cargo handling facilities and overcoming the identified bottlenecks and congestion, including improvements to local road infrastructure[78]. Examples of new facilities being provided include the recently opened facilities for Virgin Atlantic and Delta Airlines aimed explicitly at increasing the amount of cargo that they carry through Heathrow on their passenger operations[79]. There is clearly substantial investment being made to ensure that Heathrow can efficiently increase its cargo throughput, negating the need for spill to other airports[80].

4.22 In overall terms, then, it is clear that there are powerful structural factors as to why air freight is concentrated at Heathrow, based around the strong bellyhold offering and the existence of the freight forwarding/consolidation activity. Evidence would suggest that this is not replicable elsewhere in the UK and certainly not at a small niche airport such as Manston. This has implications for the need case for the development as a whole and, in particular, the likelihood of RSP being able to attract freight forwarders as occupiers of the proposed infrastructure at the Airport, including that on the Northern Grass.

[73] https://news.cathaypacific.com/cathay-pacific-s-manchester-service-to-go-daily-from-december-180062#
[74] RSP Planning Statement, para 6.29 and Azimuth Reports Vol I, para. 4.1.3.
[75] https://afo.heathrowconsultation.com/wp-content/uploads/sites/4/2019/01/Making-better-use-of-our-existing-runways-Final-single-pages.pdf
[76] York Aviation analysis of CAA Airport Statistics.
[77] https://www.heathrow.com/file_source/Company/Static/PDF/Partnersandsuppliers/heathrow-cargo.pdf.
[78] https://www.aircargonews.net/news/airport/single-view/news/segro-planning-to-replace-heathrows-cargo-horseshoe.html.
[79] https://www.aircargoweek.com/virgin-and-delta-to-move-into-dnata-city-east/.
[80] This does not mean that airports with growing bellyhold capacity, such as Manchester will not also increase tonnage carried nor that there will not be growth at existing integrator bases such as EMA and Stansted reflecting their key role in the UK distribution network.

The Geographic Distribution of UK Air Cargo Demand

4.23 Another key factor to understand is the geographic distribution of air freight demand. It is important not to confuse, as Azimuth do, the clear economic preference for freight to be flown out of Heathrow due to the economics of consolidation with the true origin of the demand for air freight. This is important as it influences the choices made as to how any excess freight that Heathrow cannot accommodate in future would be shipped as well as the economic choices that drive the point of consolidation in the first instance.

4.24 At the outset, it should be made clear that there is very limited data on where air cargo originates from or is destined for within the UK. However, some indications are available from other research, notably work by MDS Transmodal, in conjunction with York Aviation, for Transport for the North in relation to its International Connectivity Strategy[81]. MDS analysed a series of datasets on air freight and road haulage and estimated that around 14% of UK air freight demand originates in or is destined for the North of England, for example. We also know that air cargo is often trucked a considerable distance before being loaded on to aircraft.

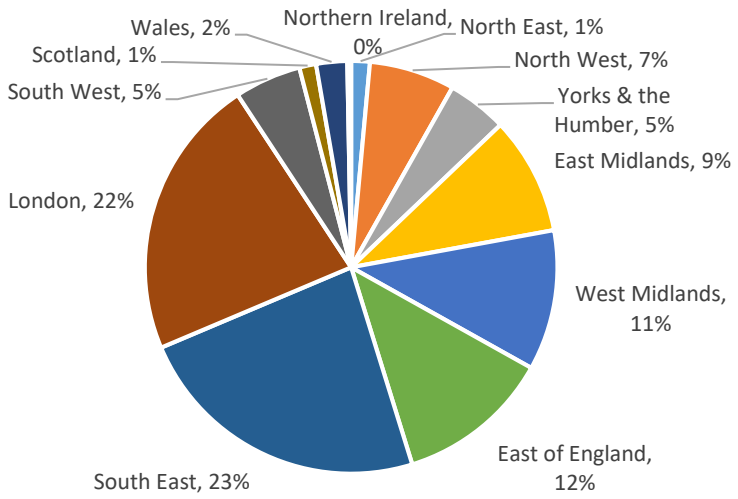
4.25 To estimate the amount of cargo tonnage originating in or destined for the different regions of the UK, we have used a simple gravity model that distributes air cargo regionally across the UK based on:

- for exports, the distribution of manufacturing employment in the UK. This is intended to reflect that air cargo exports are likely to be primarily manufactured goods;
- for imports, the distribution of UK population. This is intended to reflect that imports are in many cases destined either for consumers directly or retailers. This is clearly a simplification but we believe a sensible one given the data available;
- a relatively low distance decay factor of 1.5, reflecting the relative insensitivity of air freight to trucking times. This has also, in part, been calibrated to reflect MDS's findings for Transport for the North.

4.26 The resulting distribution of air cargo demand is shown in **Figure 4.4**. It shows that, while there is a heavy concentration of demand in the Greater South East, there is significant demand located across the country. It is misleading to assume that cargo that is currently flown from the London airports is necessarily destined for or originating in the South East and so easily available to Manston.

[81] https://transportforthenorth.com/wp-content/uploads/Final-International-Connectivity-Evidence-Report.pdf, para.

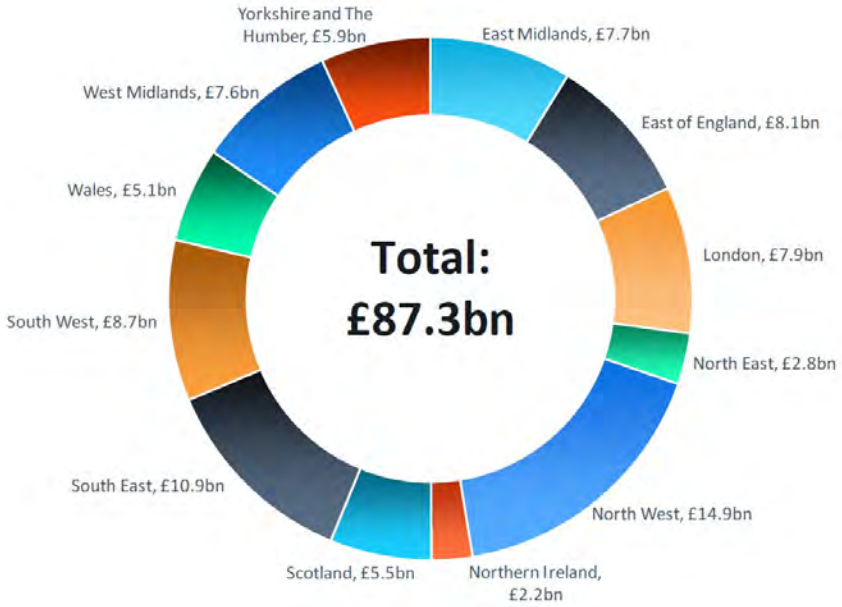
Figure 4.4: Modelled Regional Distribution of UK Air Cargo Demand



Source: York Aviation analysis of CAA Statistics, ONS and Google Maps Data

4.27 More recent analysis by Steer for Airlines UK[82] provides more specific data on the GVA value of air freight exports by air by region. This is shown in Figure 4.5.

Figure 4.5: GVA Currently Dependent on Air Freight by Region



Source: Steer 2018

[82] Assessment of the Value of Air Freight Services to the UK Economy, Steer, October 2018, Figure 5.6.

4.28 The issue for Manston is that it is poorly placed geographically to serve the totality of this demand. In the event of air cargo capacity constraints in London this demand is likely to look initially for cargo capacity closer to home at the major regional airports, particularly those that that are developing broader long haul passenger networks. Even if freighter aircraft are required for this demand, there are likely to be substantially better options than Manston, not least the national air freight hub at East Midlands, with its central location in the UK.

Air Cargo Capacity at UK Airports

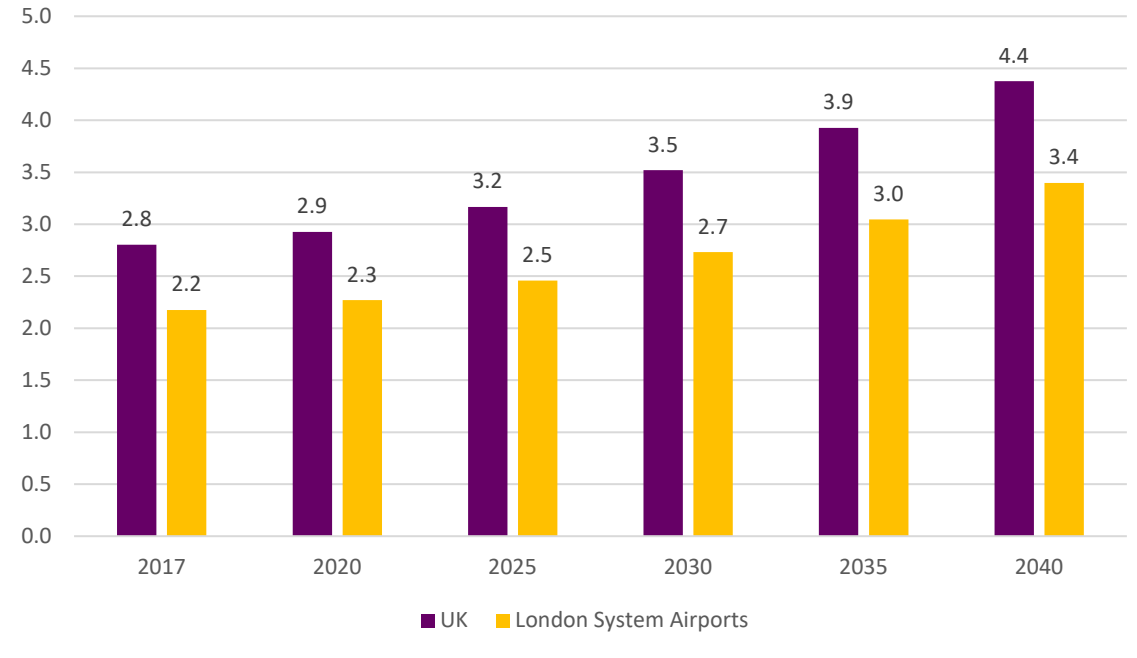
4.29 In our November 2017 Report, we set out an assessment of expected cargo tonnage growth by reference to GDP. We have updated this to enable an assessment of the extent to which there is likely to be any shortfall in capacity available across UK airports as a whole. As in our 2017 report, we have adopted a relatively simple approach, growing existing air cargo demand forward in line with GDP projections for the UK economy. This is in line with our analysis of the link between cargo volumes and the key economic drivers described in our November 2017 Report. The GDP forecasts used are the latest forecasts produced by the Office for Budgetary Responsibility at the time of writing. These are taken from:

- Economic & Fiscal Outlook (October 2018), which provides short to medium term forecasts;
- Fiscal Sustainability Report (July 2018), which provides long term forecasts for the UK economy.

4.30 These forecasts suggest average real growth in UK GDP of around 2% over the period to 2040. These forecasts are slightly lower than those used in our November 2017 report, reflecting more fully the outlook for the economy post Brexit. These slower growth rates have been offset by the uptick in growth observed in the UK air cargo market in 2017, which has increased our baseline. The resulting projections of air cargo demand at the London system airports and across the UK are set out in **Figure 4.6**. This analysis sees total UK air cargo demand reach around 4.4 million tonnes by 2040 and demand in the London system[83] of around 3.4 million tonnes by 2040.

[83] Based on the London airports current share of the national market.

Figure 4.6: Air Cargo Tonnage Forecasts (million tonnes)



Source: York Aviation

4.31 Next, we considered the extent to which the demand identified above could be met by UK airports and the London system airports. This is, again, in line with our approach taken in our work in November 2017 and with our previous research for the FTA in 2015 relied on, wrongly, by Azimuth.

4.32 The first step is to assess the extent to which the bulk of air freight demand will be accommodated in passenger aircraft. In order to estimate the likely bellyhold capacity that will be available through the period to 2040, we have produced projections of passenger ATM[84] demand for each of the top 10 freight airports in the UK in 2017, along with a residual forecast for Other UK airports. For Heathrow, Gatwick and Manchester, these forecasts have been split into domestic, EU and non-EU ATMs. The future years for each airport have been based on the ATM forecasts produced by the Airports Commission for which detailed data files have been released[85]. Years prior to the opening of Runway 3, use the Base ATMs scenario, while post opening uses the Heathrow's ATMs scenario, which reflects the third runway. This will understate the potential at Heathrow in the short to medium term if it gains approval for full mixed mode use of the runways as an interim step before R3 allowing additional global air services providing bellyhold capacity.

[84] ATM – air transport movement.
[85] https://www.gov.uk/government/publications/airports-commission-documents-and-data.

4.33 The existing freight loads per passenger ATM for each airport have been estimated using CAA Airport Statistics. These average loads have then increased by between 0.5% and 0.75% per annum at Heathrow. These rates have been slowed in the short term compared to our 2017 report to reflect the increase in average loads at Heathrow seen in the last year. CAA Airport Statistics suggest that the average tonnage per passenger ATM has grown by 8.5% in the last year. This may reflect the introduction of new aircraft such as the Airbus A350 that have higher freight capacity. The implication of this large short term change is that Heathrow's total bellyhold capacity may actually be higher than previously forecast. This ultimately reduces the chance of there being excess demand for Manston to capture and this has been a strong contributory factor to the decline in some of the forecast scenarios. Other airports have also seen some increase in average loads in the past year, which has further increased available bellyhold capacity. At these other airports, we have assumed that loads will grow at around 1.6% per annum tapering to 1.0% per annum in the longer term. This reflects trends in average loads identified from CAA Airport Statistics over recent years.

4.34 Having assessed the extent to which future air freight demand is likely to be accommodated in the bellyholds of passenger aircraft, we then consider the capacity provided by likely freighter ATMs at the existing airports handling such movements. This 'Business as Usual' assessment of freighter tonnage expected at these airports takes, as a conservative assumption, growth in freighter ATMs at each airport of 0.4% per annum, in line with expected growth rate from the Department for Transport's Aviation Forecasts 2013[86] so as not to understate any potential demand for additional air freighter movements. We have used a 0.4% p.a. growth assumption although the more recent DfT position, as reported in para 3.18 above, is that no growth is a more reasonable assumption. Taking this assumption is inherently conservative and more likely to overstate than understate the actual need for freighter movement capacity and understate the available headroom to accommodate such movements.

4.35 Once again, average loads per freighter ATM have been estimated for each airport from CAA Statistics. As with bellyhold cargo per ATM, there has been an upward trend in average loads on freighters in recent years of around 1.1% per annum (York Aviation analysis of CAA Airport Statistics). This is assumed to continue over the period. This gives us an estimate of the upper bound of tonnage likely to use dedicated freighter aircraft based on the projected movement growth set out above. We term this 'Business as Usual' Freighter tonnage, i.e. the tonnage we would expect to be carried on freighter aircraft based on extrapolation of current patterns of freighter operations at existing UK airports.

4.36 Having assessed the volume of tonnage likely to seek to use freighter aircraft, we have also taken a view as to the likely total tonnage capacity over time of the two largest freighter airports in the UK, East Midlands and Stansted, based on those airports' development plans, and the proposed increase in total cargo capacity at Heathrow, as set out within the NPS:

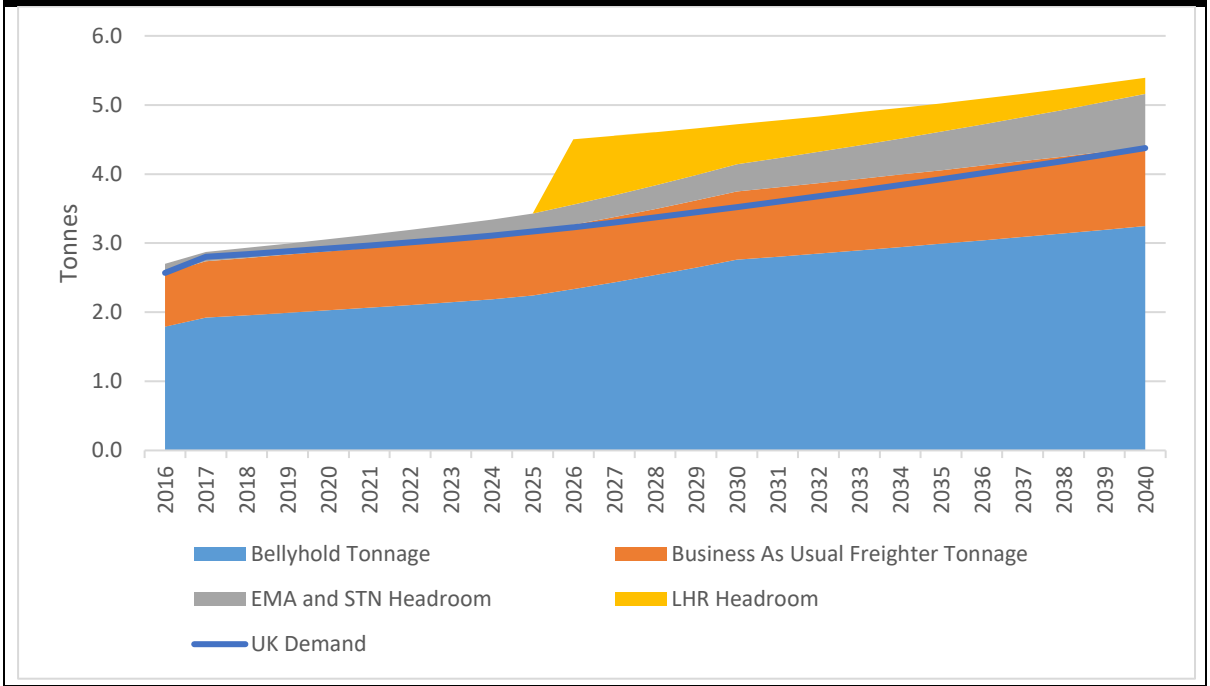
- the Stansted Sustainable Development Plan talks about developing cargo capacity to handle around 400,000 tonnes of cargo. We have assumed that current capacity is around 300,000 tonnes and that this grows steadily over time to 400,000 tonnes by 2040[87];

[86] The exception to this is the small number of freighter movements at Heathrow, which are not allowed to grow until the Third Runway is opened.
[87] Stansted Airport, Sustainable Development Plan, 2015, Summary, page 9.

- the East Midlands Sustainable Development Plan describes its runway capacity as being able to support a 10 million passenger and 1.2 million tonne cargo airport[88]. We have assumed that this capacity could be developed over time to 2040 from an assumed base capacity of 400,000 tonnes. The airport is not subject to any specific ATM limit;
- the NPS states that the development of the third runway at Heathrow will enable a doubling of freight capacity at the airport[89] This would suggest that the cargo facilities will be able to handle around 3 million tonnes per annum. We have assumed that this headroom would be available from the point of the new runway opening.

4.37 This assessment of the cargo capacity headroom at Heathrow, Stansted and East Midlands helps provide an assessment of how any excess demand identified could be handled by freighters in the UK if this were the response of the market to any shortage of bellyhold capacity, after having taken account of bellyhold capacity. The resulting estimates for air cargo tonnage capacity for the UK as a whole and the London system over time are shown in **Figures 4.7** and **4.8**.

Figure 4.7: UK Air Cargo Capacity

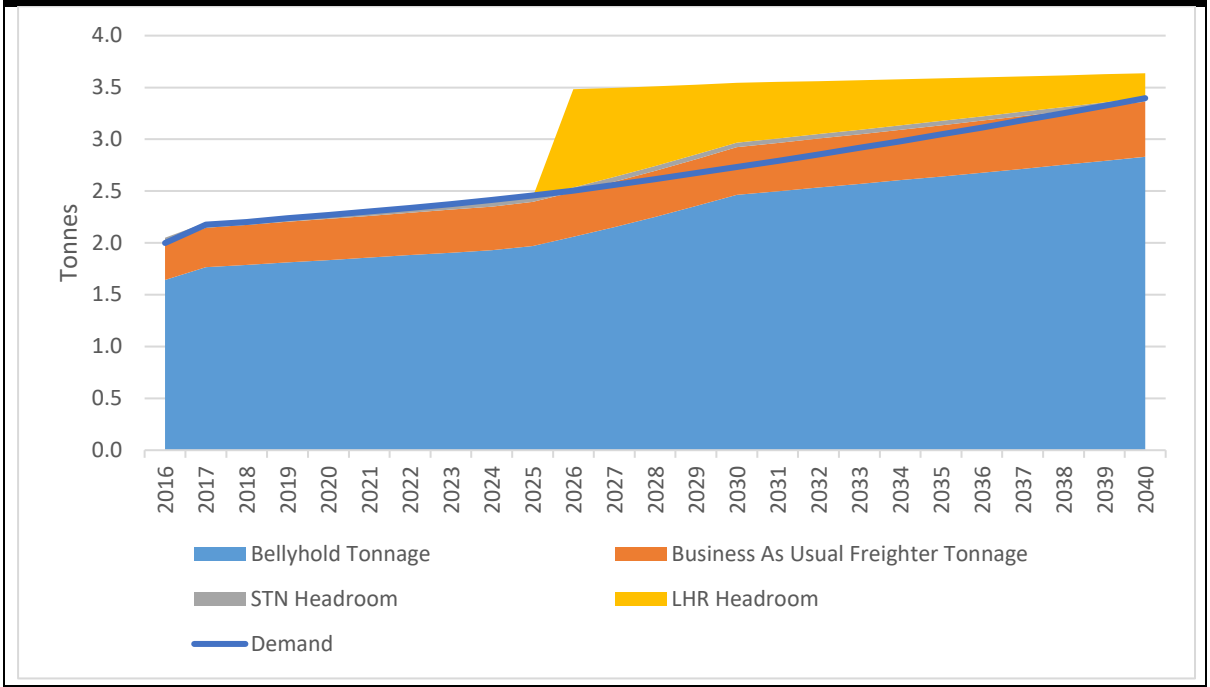


Source: York Aviation

[88] East Midlands Airport Sustainable Development Plan, 2015. Page 75.
[89] Airports National Policy Statement, 2018. Page 32.

4.38 At a UK level, our analysis suggests that there are unlikely to be capacity issues in the cargo market until well beyond 2040 even on the conservative (worst case) basis that we have adopted by retaining the DfT's 2013 projection of possible growth in freighters. Based on the latest DfT projections of no such growth, there is simply no capacity shortfall at all. Once the third runway is opened at Heathrow, there is in fact likely to be excess capacity in the market particularly in the light of the expected doubling of freight capability at the Airport as set out in the NPS, which is likely to soften demand for supporting freighter capacity dedicated to general air freight (accepting that integrator/express freight is a separate market to a significant degree).

Figure 4.8: London System Air Cargo Capacity



Source: York Aviation

4.39 The situation at the London airports is slightly different. With Heathrow's bellyhold growth relatively constrained in the short term, there could be potentially some limited capacity constraints in the very short term before mixed mode and R3 are operational. However, allowing for headroom at Stansted, there are no capacity constraints in the medium term. Once R3 is opened, excess capacity develops rapidly. The London system's freight capacity does start to fill up as Heathrow begins to fill up once again but Heathrow's freight capacity plans suggest that there will still be headroom by 2040. Assuming mixed mode (independent parallel approach operations are permitted at an early date), this shortfall will not arise.

4.40 The implications for Manston Airport are that, even in pure volume terms, push factors from other airports in London are unlikely to provide opportunities for growth before at least 2040 and beyond assuming no further airport capacity comes on stream at the main London airports. This is before any consideration is given to Manston's suitability to serve the markets in question. In the short to medium term, there might be some very limited constraint in the London system before the third runway at Heathrow is opened. However, this is largely a function of bellyhold constraints at Heathrow and it is clear that the preferred option for such freight is alternative bellyhold capacity.

4.41 Logic would suggest that what will be pushed out is relatively low yielding, general air cargo that is more sensitive to price and less sensitive to time. Essentially, this is akin to business passengers forcing leisure passengers out of Heathrow. This type of air cargo is not likely to see pure freighters as an effective alternate, given the higher prices involved. It is more likely to seek out alternative bellyhold capacity at UK regional airports (which might actually be closer to its point of origin given our analysis above) or travel via truck to the continental European airports.

Prospects for Manston

4.42 In our November 2017 Report, we set out 'realistic' forecasts of freighter movements and freight tonnage at Manston, drawing on the methodology that we used in our earlier work for the Freight Transport Association and upon which Azimuth seek to rely. In essence, these have not changed, except that our previous projections may have been on the optimistic side given the continued trend away from the use of dedicated freighter aircraft and with greater clarity regarding the expected increases in capacity for freight at Heathrow. Even on the most optimistic basis, we would not expect Manston to be able to attract more than around 2,000 annual freighter aircraft movements and, more likely, it may struggle to attract more movements than it did when previously in operation. If we were to fully update our forecasts for Manston, we would expect the realistically projected number of dedicated freighter movements to be even lower given deteriorating market conditions, increased competition and economic uncertainty.

Conclusions

4.43 Examination of market trends and the structure of the air freight market make clear that there is no role for Manston, other than possibly as a niche cargo operation, as with its historic operation. The trend in favour of bellyhold for the carriage of general air freight is clear. This freight forwarding sector is heavily concentrated around Heathrow for this very reason and the associated consolidation activity essential drives the choice of airport based on the most economical freight rates available for any consignment. This is highly unlikely to be a dedicated freighter option from an airport remotely located in East Kent.

4.44 Going forward, Heathrow will have substantially enhanced capacity for air freight operations (around double its current throughput) and modernised facilities negating any 'push' factors that might drive users to even consider Manston.

4.45 The integrators are already well established at East Midlands Airport in particular as well as using Heathrow and Stansted to serve the main markets in England, with these airports stated as having scope to increase air freight capacity by 800,000 and 150,000 tonnes per annum respectively[90]. Manston is too far from the distribution centres along the M1/M6 axis to function as an integrator base, leaving aside that the proposed night movement restrictions would render any such operation unviable for the airline/integrator.

4.46 This leaves niche/specialist cargo operations as the only possible market for Manston. This would be consistent with the types of cargo that Manston used to handle[91]. Ultimately, this is a very small market and unlikely to result in Manston handling more freighter movements than it did historically. This has profound implications for the Need Case as a whole.

[90] See para. 4.36 above.
[91] See Figure 3.9 of our November 2017 Report.

5 AIR PASSENGER FORECASTS

In this section, we set out our analysis of the passenger potential for Manston. The Azimuth Reports set out no analysis of the market and merely assert that certain airlines might operate. This is not credible and certainly not sufficient to underpin any business case for investment in the development of Manston. Given the importance of passenger related revenues to the viability of any airport's operation, this is significant.

We set out here an analysis of the passenger market that Manston might serve and demonstrate that, at best, it might achieve around half of the number of passengers that RSP's need case depends on. To do so, there will need to be an allowance for passenger aircraft movements in the night period, which have not currently been assessed in RSP's ES.

The viability to the airlines of passenger operations remains questionable and there is no guarantee that any passenger services would be viable for the airlines on a sustainable basis and without some form of public subsidy.

Basis for Passenger Forecasting

5.1 In our November 2017 Report, we set out the basis for assessing any potential for cargo operations at Manston. Whilst we indicated that more likely passenger forecast would be of the order of half[92] of those set out in the Azimuth Report, we did not set out further detail. As the passenger market is significant in terms of assessing the potential for viable operations at the Airport taken as whole, we set out further detail on the likely passenger market in this section in order to assist the Examining Authority. We have adopted the same approach to developing these forecasts as we do for other clients operating or investing in regional airports in the UK.

5.2 Whilst the need for the Airport and its designation as an NSIP is fundamentally driven by the asserted need for a dedicated air freight hub, passenger services and the economic benefits that potentially derive from such passenger flights form part of RSP's socio-economic case. Taken in the round, then, these services form part of the need case and, hence, the demand for such services requires full justification. Passenger operations, both in terms of revenues and costs, will also be key elements that underpin the financial viability of the operation and whether the proposition is likely to be economically sustainable.

5.3 Azimuth provide no details of how the specific passenger and associated aircraft movement forecasts have been built up. It is simply postulated that a number of airlines and air services might operate. This is not sufficient nor consistent with the approach to forecasting normally required to justify an airport planning application in our experience.

[92] York Aviation, November 2017, Executive Summary, para 12.

5.4 We note that RSP's Planning Statement, at para. 9.44 asserts the passenger 'forecast' of 660,000 passengers in first year of passenger operations (Year 3) is driven by lack of capacity at other London airports. This statement appears to ignore capacity developments at other London airports, including the planning approval recently granted to Stansted to increase from 35 million to 43 million passengers a year[93] or developments such as Ryanair's decision to base aircraft at Southend Airport from summer 2019[94].

Methodology

5.5 Unlike Azimuth, our approach to forecasting the potential of Manston for passenger services is to consider the level of demand in the Airport's catchment area and how this might grow in future. We accept that there is a need to consider the airline response to this demand in terms of the frequency of flights they might offer as a basis for setting out the number of passengers they might carry. However, it is not sufficient to simply assert that IF an airline was to commence services it would carry X thousand passengers, the requirement to present a compelling case requires some evidence as to the likelihood of each airline commencing services (absent any firm documented commitment), which would normally be based on the assessment of the levels of demand and whether these would be sufficient to support viable services.

5.6 Given the importance of passenger services to the viability of airport operations, developing a robust forecast of passenger demand is critical to the assessment of the overall viability and sustainability of the operation of the Airport, which we consider further in **Section 7**. We present here an assessment in a form consistent with that which would be expected in support of an airport planning application.

Kent Passenger Market

5.7 The UK Civil Aviation Authority (CAA) undertake sample surveys of departing passengers using the main UK airports on a continuous basis[95]. This data base runs to almost 200,000 records and contains information about the passengers' home or journey origin, their end destination airport and any intermediate stops, the purpose of travel, the airline flown with and other demographic information. Summary reports are published[96] but York Aviation, in common with most other experienced aviation consultants, use the raw survey data purchased from the CAA to analyse and produce passenger forecasts for airports in the UK. This data enables the scale of the market in any individual airport's catchment area to be estimated along with the nature of that demand – business/leisure, UK outbound or foreign visitor, destination or origin of the air journey.

[93] https://mediacentre.stanstedairport.com/london-stansted-gets-the-go-ahead-to-boost-the-regions-economic-growth-and-create-5000-new-jobs/
[94] https://www.independent.co.uk/travel/news-and-advice/ryanair-southend-airport-base-easyjet-cheap-flights-stansted-a8396956.html
[95] This includes all of the main London airports but not Southend. Smaller regional airports are surveyed on a more periodic basis, typically every 3-5 years.
[96] https://www.caa.co.uk/Data-and-analysis/UK-aviation-market/Consumer-research/Departing-passenger-survey/Survey-reports/.

5.8 We have analysed the 2017 CAA Survey data to look at the scale and nature of the air passenger market in Kent. We have chosen to restrict the analysis to Kent because it is unlikely that a re-opened Manston Airport would attract passengers to any substantial degree from outside of the County due to the surface journey distance and time from Manston to areas beyond Kent, as well as the fact that most of these areas are located closer to larger airports, including London Gatwick, with a much wider range and frequency of passenger services than is ever likely to be delivered at Manston. We recognise that the planned Lower Thames Crossing may make access times quicker from north of the Thames but this will, of course, also speed up journey times from Kent to larger, more established airports with broader networks and frequencies, such as London Stansted, London Luton and even London Southend. Hence, any potential passenger gain for Manston is likely to be more than offset by passengers travelling north of the river to more easily avail of a wider range of air services. There is a real risk that the attractiveness of services from the larger airports could further reduce the pool of demand available to a re-opened Manston compared to that which we have assessed below.

5.9 In 2017, as can be seen in **Table 5.1** below, the total market size for Kent was 4.97 million passengers[97]. Over 1.2 million of these are travelling to long haul points and so, other than via a hub connection, these are unlikely to be served by a re-opened Manston Airport[98]. This leaves around 3.8 million short haul and domestic passengers in the County.

Table 5.1: Kent Passenger Demand 2017

Passenger Type	All Catchment
Domestic	372,000
Long Haul	1,221,000
Short Haul	3,373,000
Grand Total	**4,966,000**
Source: CAA Survey 2017	

5.10 However, Manston Airport's location at the eastern extremity of the Kent peninsula means that the Airport is unlikely to draw equally from all districts within the County and, as such, the total underlying market for the Airport is likely to be well below 3.8 million passengers. **Table 5.2** illustrates the time taken to drive to competitor airports from key urban centres in each district. As can be seen, Manston Airport would have the shortest drive time from only 6 of the 13 Kent districts.

[97] This figure may not include some passengers who chose to use London Southend Airport which was not included in the CAA Survey for that year. We would anticipate the figure to be relatively low given the scale of operations at Southend and the route overlap with other larger airports accessible to Kent.

[98] We note the aspiration for a small number of charter flights bringing cruise passengers to Manston

Table 5.2: Drive Time to Competitor Airports from Kent Districts				
District	Manston Airport	London Gatwick	London Stansted	Southend Airport
Thanet	14	91	111	108
Canterbury	30	65	85	85
Dover	35	70	104	105
Swale	40	50	70	65
Shepway	45	65	90	90
Maidstone	45	40	60	60
Ashford	50	55	80	80
Medway	50	45	60	60
Gravesham	55	40	45	50
Dartford	60	35	45	45
Tonbridge & Malling	65	30	80	60
Sevenoaks	65	30	60	55
Tunbridge Wells	75	40	70	90
Source: York Aviation/Google Maps				

5.11 A key differentiator for Manston Airport when compared to other UK regional airports is that its location on a coastal peninsula means that it is not surrounded on all sides by population centres from which it can draw demand, with a large part of the area surrounding Manston being sea.

5.12 In making decisions on which airport to use, passengers would be likely to weigh up three key elements, service frequency (convenience), fare price and journey time/cost to airport. Of these, Manston is always likely to be beaten on the first by larger airports in the South East, whilst fares are likely to be no better than available elsewhere due to the spread of low fares airlines across all airports surrounding London. This means that the only benefit Manston Airport could offer would be on journey time savings and, even then, this would be limited in some cases. In determining the scale of the market which may, thus, be available to Manston, we have made assumptions about how much of the market could be attracted to use the Airport if services were provided based on experience at other regional airports seeking to penetrate their local market in competition with larger airports.

5.13 It is not realistic to assume that Manston Airport would be able to attract all of the market from any district, either in totality or even at individual route level for a number of reasons, but principally because:

- for many destinations, there is insufficient demand to make operations viable for the airlines even with market stimulation from low fares, meaning these passengers must be consolidated on to services at larger airports; and
- routes operated from Manston Airport would still be competing with services from other airports which may have more attractive frequencies, flight times, or fares.

5.14 It is, therefore, necessary to determine how much demand could realistically be attracted to the Airport. In our previous work in Kent, in relation to Lydd Airport, we assumed that, in core districts adjacent to the Airport, 60% of the market could be captured if regular services are operated to any given destination and that other, more distant districts, would attract a much lower % share of the total available market given competition from other airports. In practice, this approach may now be generous to the Manston because, in the intervening years since the Lydd Inquiry in 2011, there has been significant growth of low fares services from London Gatwick that will be very appealing to passengers from much of Kent. Furthermore, given how little difference there is in journey times between airports from some key districts, the attractiveness of larger airports is likely to be far higher than Manston Airport overall other than in the very local area.

5.15 The 60% level of market capture is also higher than we observe elsewhere in the UK when regional airports are in competition with their larger, more dominant, neighbours. Nonetheless, we have adopted a 60% local market capture from districts where Manston is the closest airport in order not to understate the potential demand that Manston might attract as an upper bound. We have assumed that for all other districts in Kent, 5% of passengers could be attracted to Manston. Overall, we have erred on the optimistic side in our projections of how much passenger traffic Manston could realistically attract and sustain over a 20 year period so as to indicate a maximum potential rather than a most likely forecast.

5.16 Following this approach shows that, in 2017, the total market available to the Airport would be around 1 million passengers, across all short haul and domestic routes (point to point). However, this demand is spread across a total of nearly 240 destinations (some of which were reached via hubs rather than on direct services). On the assumption that Manston Airport will neither serve all of these destinations nor have sufficient hub connectivity, notwithstanding the possibility of an Amsterdam service, to provide competitively convenient connections to all of these destinations, the figure of 1 million passengers represents an unachievable upper bound presently. The realistic potential market is substantially below this figure if the Airport was open for passenger services today.

5.17 Further analysis of this market potential for the Airport shows how quickly the demand potential falls below levels which would be considered viable for most airlines to be interested in operating a service. For an airline, the decision whether to serve an airport is not about the total level of demand in a catchment area but whether there is sufficient demand to a particular destination to make a service viable at a frequency of service sufficient to ensure that an individual route will be competitive with services from other airports and/or whether there is sufficient demand across a bundle of routes to support the basing of aircraft.

5.18 In **Table 5.3**, we set out the 30 destinations with the highest demand based on the applied market capture rates.

Table 5.3: Top 30 Market Potential in 2017	
Destination	**Potential Demand**
Alicante	38,000
Dublin	34,500
Tenerife	32,500
Palma	32,000
Glasgow	30,500
Rome (FCO)	25,500
Lanzarote	25,000
Malaga	24,500
Faro	24,500
Barcelona	23,500
Venice	22,500
Amsterdam	22,000*
Belfast (BFS)	21,500
Geneva	21,500
Mahon	19,000
Edinburgh	19,000
Malta	17,000
Oslo	14,500
Paphos	14,000
Fuerteventura	13,000
Ibiza	13,000
Lisbon	12,000
Milan (MXP)	12,000
Bucharest	12,000
Murcia	11,500
Heraklion	11,000
Las Palmas	11,000
Corfu	10,500
Madrid	10,000
Stockholm	10,000
Note: *Excludes onward connecting passengers. KLM typically expect around one third of the route to be point to point, with the remaining two thirds to be onward connecting meaning that, if it operated a service to Amsterdam, the route would carry more passengers when those connecting in Amsterdam are included.	
Source: CAA Survey 2017 and York Aviation	

5.19 On the basis that many airlines would, in our experience, be seeking at least 30,000 passengers for a summer-only service, only one destination would have achieved this level of potential demand in 2017, Malaga (Dublin would reach this level but is a year-round type destination which would likely require greater demand to be sustainable overall). This illustrates how dependent services from the Airport would be on stimulation (or destination switching[99]) to reach viable passenger levels to make them attractive to airlines.

York Aviation Passenger Forecast

5.20 In order to project forward the market, we have applied underlying demand growth rates from the DfT's 2017 UK Aviation Forecasts[100]. In the first instance, it is worth pointing out that applying growth of 2% per annum[101] to the total underlying potential market for Manston would suggest that by 2021[102], the total potential market from which Manston could draw passengers would still be less than 1.1 million passengers. On this basis, 662,000 passengers as forecast for Year 3 of RSP's Manston Airport demand forecasts[103] would amount to the Airport capturing over 60% of all available short haul demand within its reasonable catchment area based on our assumed market capture rates set out above in the first year of passenger service operations. This is simply not credible given how few of the 240 routes are likely to reach a viability threshold sufficient for an airline to commence operations in the first year.

5.21 We have developed more realistic passenger forecasts using a market-led semi-bottom-up approach which takes into account the scale of the market at route level and overlays the bottom-up likely provision of airline capacity to meet this. This is typical of approach to demand forecasting for regional airports that we undertake for numerous airport operators and investors. However, as pointed out above, the market capture assumptions used to assess the total potential market available to Manston err on the optimistic side such that the forecast represents more of an upper bound of plausibility.

5.22 Our forecasts are derived through the following steps:

- identifying the underlying demand for all routes from the catchment area (Kent);
- determining the market capture which could be achieved if services were offered from Manston Airport and applying these to the above;
- applying stimulation to the underlying demand at a route level to reflect stimulation of the market through a new route and as a proxy for destination switching;
- growing the route level demand forward by appropriate market growth rates (usually derived from the DfT UK Aviation Forecasts);
- determining the likely airline type[104], aircraft type/size and frequency to operate each route. Relevant passenger load factors are also applied at this stage based on industry norms;

[99] Passengers choosing where to fly based on the services available rather than their underlying market preference.
[100] UK Aviation Forecasts, Department for Transport, October 2017.
[101] the DfT average growth rate for short haul and domestic passengers from 2016 to 2030.
[102] Indicated as Year 3 in the RSP Planning Statement, para 3.105.
[103] RSP Azimuth Report, Vol III
[104] Low cost, full service etc.

- ✈ growing airline frequency, capacity and load factor as underlying demand grows.

5.23 The first two steps are as previously explained, with the application of 60% market share for districts which are closer to Manston Airport than others and 5% from all others. As previously identified, we believe that the 60% may be generous for a number of reasons.

5.24 In making allowance for some stimulation of the local market associated with the introduction of new services at Manston, we have been cautious for a number of reasons, in part explained previously, but also because much of the stimulation is likely to be effectively destination switching by local passengers choosing to fly from Manston rather than elsewhere rather than pure stimulation of the underlying market[105]. Taken in the round, this does not increase the overall pool of passengers from which the Airport can draw but may result in individual routes becoming viable to the airlines at an earlier date but slowing the introduction of other routes. Typically, in our experience, the level of market stimulation seen at the individual route level can be in the order of 10-40% depending on the airline and route[106]. In order to make routes financially viable, it is likely that airlines will seek to serve well established core destinations and these will be the hardest to stimulate given the sheer level of frequency already offered from competing airports. For this reason, we have adopted a 20% market stimulation rate to reflect the impact of new passenger services at Manston on individual destination markets, which may, in practice, still be too high given the likely route structure focussed inevitably on mature markets already well served. Again, we have erred on the optimistic side so as not to understate the potential.

5.25 Our growth rates are based on the DfT growth rates from 2017 and applied to the latest 2017 CAA Survey data on the scale of the local market. No further adjustments have been made to these to account for Brexit, though clearly there may be circumstances in which the growth rates are supressed by more negative economic outcomes from the Brexit process. This demand suppression would equally apply to any projections of cargo tonnage growth. The growth rates are shown in **Table 5.4** and have been used widely by ourselves in projecting demand for other clients in the UK. These are lower than those used by Azimuth of 4%, partly reflecting a proper interpretation of annual passenger growth rates (see **Section 3**) but also because they are applied to the underlying passenger demand, not the level of growth which could be seen at the individual airport level. The growth at an individual airport could be greater in any one year as new services are launched and step changes in passenger levels from the previous year are achieved. This is taken into account in our overall analysis of the potential for Manston.

[105] High levels of market stimulation were observed with the rapid growth of low fare services in the period 2002-2008 but there is significantly less scope for continued stimulation of the underlying market for air travel through further air fare reductions.

[106] This can be much higher for a limited number of routes, but these levels tend to be for first forays into new markets from much bigger airports

Table 5.4: Applied Annual Market Growth Rates		
Year	Domestic	International Short Haul
2018	1.2%	2.2%
2019	1.2%	2.2%
2020	1.2%	2.2%
2021	1.5%	2.0%
2022	1.5%	2.0%
2023	1.5%	2.0%
2024	1.5%	2.0%
2025	1.5%	2.0%
2026	1.5%	2.0%
2027	1.5%	2.0%
2028	1.5%	2.0%
2029	1.5%	2.0%
2030	1.5%	2.0%
2031	1.2%	1.8%
2032	1.2%	1.8%
2033	1.2%	1.8%
2034	1.2%	1.8%
2035	1.2%	1.8%
2036	1.2%	1.8%
2037	1.2%	1.8%
2038	1.2%	1.8%
2039	1.2%	1.8%
2040	1.2%	1.8%
2018-2040 Average	1.4%	2.0%
Source: Department for Transport		

5.26 Projecting forward the stimulated routes on this basis, we have been able to determine routes which may over time be viable for an airline to from Manston Airport. Whether they would constitute a viable operation for the Airport, particularly given the cost of building a new passenger terminal is debatable and something we consider further in **Section 7**.

5.27 We have assumed that routes would be started when stimulated demand reaches 30,000 passengers per annum. This mainly covers leisure routes, though would also cover Amsterdam and Dublin initially notwithstanding concerns that this passenger volume may not be sufficient for year round services at a reasonable frequency of service, along with Glasgow and Edinburgh over the longer term. The choice of 30,000 passengers per annum equates broadly to:

- 3 flights per week for a 30-week summer period by a 189-seat Boeing-737-800 aircraft;
- 2 flights per week, year round for a 189-seat Boeing-737-800 aircraft;
- 5 flights per week, year round by a 78-seat Dash-8-Q400 or Embraer E175 aircraft.

It should be noted that at these levels of frequency, the 60% market capture share is very optimistic given the level of comparative frequency from neighbouring airports.

5.28 For the Amsterdam route, we have assumed that KLM would potentially return to this route and, therefore, would bring benefits of hub connectivity which would increase demand for the route. We have assumed a ratio of one third point-to-point demand, and two-thirds onward connecting. However, as we have noted in **Section 3**, RSP's detailed fleet forecasts assume the route would be operated by Fokker F70 aircraft, an aircraft type now fully retired by KLM. Given the opportunity costs are higher with newer aircraft, such as the Embraer E175, than for a fully depreciated older F70 aircraft, it is not certain that operating a more marginal route to Manston would be a priority over other route opportunities with a newer more expensive aircraft.

5.29 Overall, we have assumed the following as a basis for assessing what might actually be operated:

- Ryanair would operate the bulk of services to leisure destinations along with city points of Dublin and Belfast (both at low frequency). It would use 189-seat aircraft with a starting load factor of 90% in the first year of operation, growing by 0.5% compound until a load factor limit of 93% is reached. However, there must be considerable doubt over this in the short term given recent statements by Ryanair about reducing the number of its bases due to fuel increases and lower fares realised in the market[107];
- KLM would operate the Amsterdam route with an 88-seat Embraer E175. Load factors are assumed to start at 80% and grow by 0.5% compound per annum until a load factor limit of 88% is reached. These load factors are higher than Azimuth assume but reflect the levels that the service will need to achieve long term for the airline to commit the aircraft resource to the services. This may, hence, overstate the early year forecasts;
- Flybe would operate to Glasgow and Edinburgh[108], although would not launch these routes until both are viable so as to increase market presence in Kent. Routes would be operated with Dash-8-Q400 aircraft with 78-seats and have a static load factor of 75% throughout. Due to the timing of the Edinburgh route reaching viable demand levels, this means these routes are not launched until the end of the forecast period.

5.30 **Table 5.5** presents our forecasts by route at 5-yearly intervals (plus 2039) and indicates the assumed airline and frequencies.

[107] http://www.travelweekly.co.uk/articles/322988/oleary-extends-ryanair-contract-despite-plunge-into-red.

[108] It should be noted that there is some short term doubt as to whether Flybe will continue in operation and, assuming it does, it is not clear that the prospective new owners flying under a Virgin Atlantic brand would be willing to start services at a small regional airport given the stated intention to focus on hub connections at Heathrow and Manchester, as well as serving Southend as part of the tie up with Stobart Air. There would be few alternative airlines suitable to commence domestic flights of this nature.

Table 5.5: Route Level Forecasts for Selected Years							
Destination	**Airline**	**2021**	**2026**	**2031**	**2036**	**2040**	**Notes**
Alicante	Ryanair	41,000	53,000	54,000	54,000	71,000	Starts 2-weekly year-round, increases over time
Dublin	Ryanair	35,000	36,000	54,000	54,000	54,000	Starts 2-weekly year-round, increases over time
Palma	Ryanair	41,000	42,000	42,000	54,000	54,000	Starts 2-weekly year-round, increases over time
Tenerife (TFS)	Ryanair	35,000	36,000	36,000	54,000	54,000	Starts 2-weekly year-round, increases over time
Glasgow	Flybe	0	0	0	0	43,000	Starts as daily service year-round
Rome (FCO)	Ryanair	20,000	31,000	32,000	36,000	36,000	Starts 2-weekly summer only, increases over time
Lanzarote	Ryanair	33,000	36,000	36,000	36,000	36,000	2-weekly throughout
Malaga	Ryanair	20,000	35,000	36,000	36,000	36,000	Starts 2-weekly summer only, increases to year-round
Barcelona	Ryanair	31,000	31,000	32,000	41,000	42,000	Starts 2-weekly summer only, increases over time
Faro	Ryanair	30,000	31,000	36,000	36,000	36,000	Starts 3-weekly summer only, increases to year-round
Venice	Ryanair	0	21,000	21,000	21,000	32,000	2-weekly summer only, increases over time
Amsterdam*	KLM	0	96,000	105,000	108,000	111,000	2-daily throughout.
Belfast (BFS)	Ryanair	0	0	30,000	31,000	32,000	2-weekly throughout
Geneva	Winter Charter	0	1,000	2,000	2,000	2,000	Starts 8 flights per winter, increases over time
Mahon	Ryanair	0	0	30,000	32,000	32,000	3-weekly summer only
Edinburgh	Flybe	0	0	0	0	30,000	5-weekly
Malta	Ryanair	0	0	0	0	32,000	3-weekly summer only
	Total	**286,000**	**449,000**	**546,000**	**595,000**	**733,000**	
Note: *Includes onward connecting passengers							
Source: York Aviation							

5.31 These passenger projections are based on the stimulated market size grown forward route by route with airline capacity increases only assumed once the underlying demand grows to a level to sustain higher frequencies. Over the forecast period, no additional routes would be expected to reach the minimum threshold of 30,000 passengers sufficient to be included in the forecast.

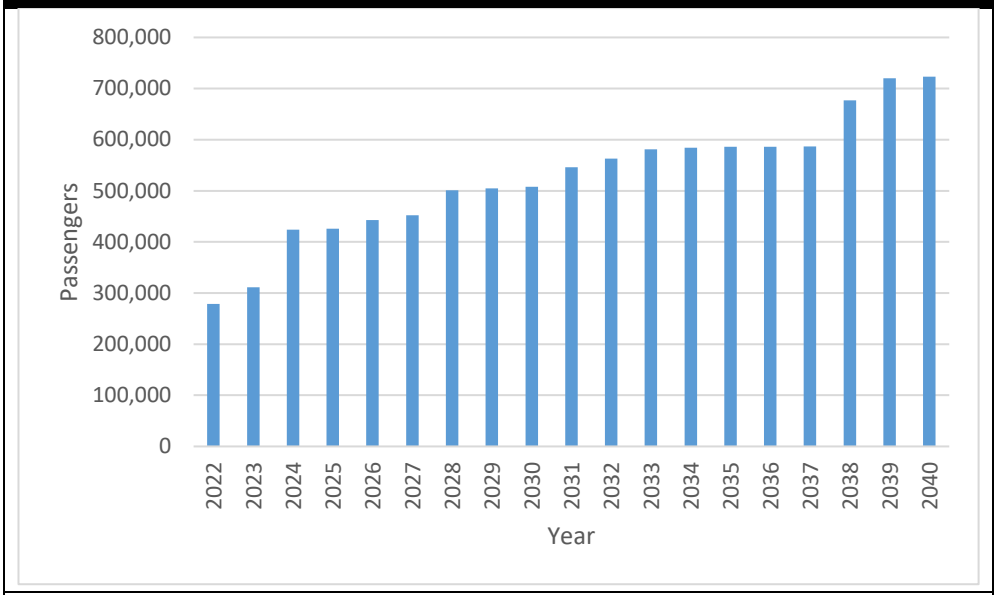
5.32 Crucially, the projected number of viable routes for the airlines and the level of activity may be insufficient to initially sustain any based aircraft by a low fares carrier (such as Ryanair) and, even in the longer term, the demand would likely only support 1 or 2 based aircraft for the summer period only. This contrasts with Azimuth's assertion that they would expect 2 based aircraft from the outset growing over time to 3. Given the nature of the underlying market, we believe this would be unsustainable which would quickly become obvious to any airline. Furthermore, for the reasons identified above, market conditions in the low cost airline sector may rule out the establishment of additional new bases in the short term unless there is a very strong local market, which is not the case at Manston.

5.33 We have not separately included outbound charter flights within the forecasts as leisure demand is already accounted for in our underlying assessment of the market so these flights would not be additional to the assessment above. Some of the routes we have identified as viable on a seasonal basis could be operated by charter airlines rather than a low fares airline; there is increasingly substitutability between the two airline types in short haul markets.

5.34 We have also not directly created a forecast for ad-hoc inbound services associated with the cruise industry. We understand the nature of these and are familiar with the historic aim of Manston Airport to attract more of these flights. It is possible that this sort of service might be attracted given the proximity to Dover but it is difficult to make a precise estimate. We note that the aircraft type assumed by Azimuth for such flights (the Boeing B757-300) has limited range and would not be able to serve Florida as indicated in the ES (Table 3.3). In any event, this aircraft is nearing the end of its operational life and any replacement aircraft is likely to be larger and with different environmental impacts. The estimate of 30,000 passengers, as shown by Azimuth, is significant and probably at the upper end of the range. Any such passengers would be additional to the forecast shown in **Figure 5.1** below, which illustrates our core passenger forecast driven by existing local demand from residents and inbound visitors for all years from 2021 to 2039.

5.35 In overall terms, our passenger forecasts suggest that by Year 20, the Airport might, as an upper bound, be able to attract around 750,000 passengers per annum but the build up to these levels of passenger throughput would be significantly slower than indicated in the RSP Application Documents. Whilst we have updated our assessment of expected levels of passenger demand to the latest full year CAA Survey data for 2017, our overall assessment of a realistic long term passenger forecast for Manston remains at around half of that suggested without supporting evidence, by Azimuth for RSP, as indicated at para. 12 of our November 2017 Report. The maximum forecast for the first year of passenger operations, Year 2, is no more than 280,000 passengers, even assuming any airline could be persuaded to commence operations at all.

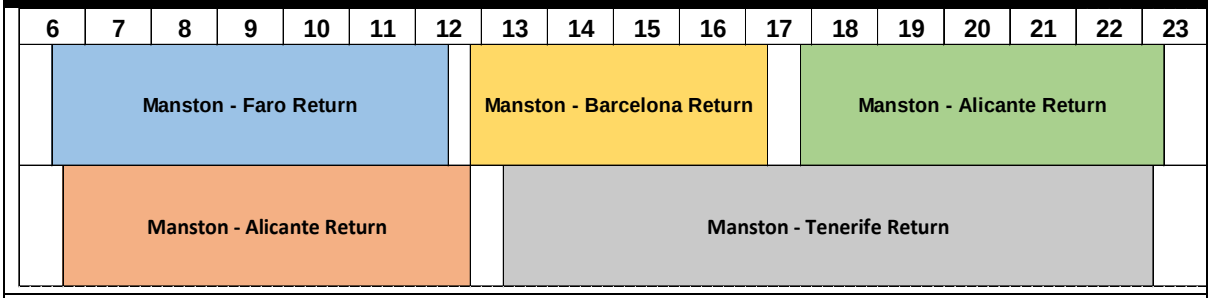
Figure 5.1: Market Based Passenger Forecasts



Source: York Aviation

5.36 Whilst the above assessment represents the potential scale of potential passenger throughput that Manston might attract if it could attract a low cost airline (LCC) to base a number of aircraft at the Airport, this is rendered unlikely given the proposed night movement restrictions in period 23.00-07.00. RSP's stated position that there would be no night flights by passenger aircraft would make it highly unlikely that an LCC would base an aircraft at Manston due to the restricted operating day over and above the market related factors highlighted above. In order to make low cost/low fare operations viable, a low cost airline would expect to be able to make their first departure before 07.00 and/or last arrival after 23.00. This is illustrated by typical aircraft rotation patterns for routes that might operate from Manston in **Figure 5.2** below, showing clearly that in order to achieve 2 or 3 rotations a day (dependent on destination) an airline would likely need to depart before 07.00 and/or arrive after 23.00. By way of illustration, Ryanair's new base at Southend has 48% of the first departures departing before 07.00 and 29% of the last arrivals arriving after 23.00. We would expect a similar pattern at Manston. However, RSP's ES suggests that there would no night movements passenger aircraft – none have been assessed for environmental impact purposes. In the alternative, night operations by passenger aircraft would crowd out freighter movements, which would further restrict the potential for viable freight operations.

Figure 5.2: Typical Low Cost Airline Aircraft Rotation Patterns



Source: York Aviation

5.37 Finally, we would note that these forecasts, whilst optimistic for a number of reasons previously explained, would only be deliverable if an airline could be persuaded to operate the services. The market is not so large, nor the competitive options sufficiently limited, that the Airport would stand out as an underserved market in its own right. Therefore, the only way in which airlines could be persuaded to operate would likely be with very attractive terms. Typically, such terms may involve:

- £0 income per passenger for one or more years from the start of services. This may be followed by gradual step changes;
- A need to underwrite new services until the routes become established, which can lead to an airport having to pay operators for a number of years;
- In addition to both of the above the airport may be expected to provide marketing support and offer accommodation and other services, such as handling, free of charge to the airline.

5.38 Terms such as these are not limited to low fares airlines and indeed major carriers such as KLM and regional airlines such as Flybe are increasingly looking for deals of this nature in the UK. If Manston were to seek to realise £2.50 per passenger as suggested in George Yerrall's 2017 analysis[109], it is more likely that no airline would be willing to take the risk of serving an airport with no track record of viable operations for the airlines or the airport as is the case at Manston. Without substantial incentives, the rational approach by the airlines is instead, to focus on continued consolidation of all regional passengers onto services from the London airports where economies of scale will allow better returns. This has implications for the revenue that could be earned from passenger services which will impact on the potential viability of the development and operation of Manston Airport, as we set out further in **Section 7**.

5.39 It is important to note that our projections are highly optimistic as the maximum passenger throughput previously handled by the Airport was 200,000 in 2005 when EUJet was the principal airline operator. This airline ceased trading as its operations were fundamentally unviable. Subsequent operations by Flybe also failed as they were not viable for the airline. The KLM service to Amsterdam which operated prior to the Airport's closure in 2014 was subject to marketing support from the County Council amounting to at least £100,000 paid via the Airport[110]. In other words, there is no track record of sustainable passenger operations for the airlines at Manston without some form of public sector support. We would expect the same to be true in future if airlines are to be attracted to commence operations in the first place and deliver the longer term passenger potential that we have assessed.

Conclusions

5.40 We have set out in full our market assessment for passenger services at Manston, in part to provide the Examining Authority with an example of the type of market analysis that it would be normal practice to present in support of a planning or development consent application. The RSP case contains no such systematic presentation of the market nor reasoned analysis of how airlines are likely to respond to the market.

5.41 Proper analysis of the market confirms that Manston is, at best, only likely to attract around half of the number of passengers claimed, without analysis, by Azimuth Associates over the 20 year period of the projections. This has inevitable implications for both the scale of facilities required and the viability of the airport operation as a whole.

5.42 It is highly likely that attracting such services will require support from the public sector as well as highly discounted airport charges. Past experience would suggest that there would remain a high risk of the airlines failing to sustain the routes on a viable basis.

[109] George Yerrall Proof of Evidence Appendix 3 submitted to the Planning Inquiry into the Application by Lothian Shelf (718) Limited relating to Buildings 1, 2, 3 and 4 at Manston Airport. (2017), Table 1.
[110] http://www.airportwatch.org.uk/2013/03/farnborough-turns-away-private-flyers/.

6 JUSTIFICATION FOR THE FACILITIES PROPOSED

The RSP Application Documents fail to set out any material that justifies the extent of facilities proposed by reference to their own 'forecasts' both for the core airport infrastructure and any claimed associated development on the Northern Grass.

In this section, we have considered the infrastructure that would be required if RSP/Azimuth's air freight forecasts were correct to assist the Examining Authority. This is without prejudice to the evidence that strongly suggests that they are unattainable. We have set out the basis for estimating the required number of stands and cargo terminal infrastructure to enable RSP's forecasts to be accommodated based on the times that airlines would wish to fly, including the required night operations.

Based on proper analysis of airline operating patterns, the maximum number of stands that would be required, even allowing a buffer for resilience, would be 10. Based on global benchmarks, the scale of cargo sheds could also be substantially reduced, probably to around 1/3 of the scale indicated.

As far as the Northern Grass is concerned, the list of airport related uses provided in response to questions from the Examining Authority is no more than a list of uses that may be required at an airport without any specific reference to whether they are actually needed at Manston or, indeed, the extent to which these uses would need to be accommodated in an airside location in any event.

Based on East Midlands Airport (EMA) and its Pegasus Business Park, despite the major freight hub activity, only around 13,000m^2 of accommodation within the business park is airport related other than hotels. The remainder of the occupiers are non-airport related and therefore not relevant to RSP's asserted used for the Northern Grass. It is simply not credible that Manston could sustain more of these airport related activities than the UK's main dedicated freighter hub at EMA.

6.1 In this section, we concentrate principally on the infrastructure required to handle RSP's projected air freight forecasts and the extent to which the scale of the proposed Master Plan has been justified. This is important in the context of the DCO and justification for the acquisition of land. Whilst we present here an assessment of the infrastructure required if RSP/Azimuth's 'forecasts' were correct, this is without prejudice the clear evidenced view within the remainder of this report that they are not. We have based our assessment here on the more detailed information set out at Appendix 3.3 of the ES, notwithstanding the discrepancies between this information and that set out in the Azimuth Reports and elsewhere as highlighted in **Section 3**.

6.2 We consider separately the extent to which the core aviation infrastructure has been justified and then the use of the 'Northern Grass'.

6.3 A further consideration is the capability of the infrastructure proposed in the RSP Master Plan as this capability is material to whether the impacts of the proposed development have been correctly assessed.

Infrastructure Required to accommodate RSP's Aviation Forecasts

6.4 The Master Plan presented by RSP for the Manston Airport site is shown at **Figure 6.1**. It makes use of the full length of the runway and provides a full length parallel taxiway. The western side of the site is dedicated to freight handling activity and has 19 full Code E aircraft stands[111] for cargo flights and 4 large cargo sheds totalling 65.500m^2 for the processing of freight supported by truck loading and parking areas. The eastern side of the site shows as a new passenger terminal and apron along with a MRO hangar and apron. The existing private aircraft handling facility (FBO) and fire station site are retained. We understand that four phases of development are planned[112] as illustrated in RSP's Design and Access Statement. Notwithstanding our view as to the significantly lower potential demand that might realistically be attracted to a re-opened Manston Airport, we focus here on the overall scale of facilities required at Year 20 based on RSP's forecasts for that year and whether there is an evidenced justification for this scale of facilities in the highly unlikely event that these 'forecasts' were deliverable.

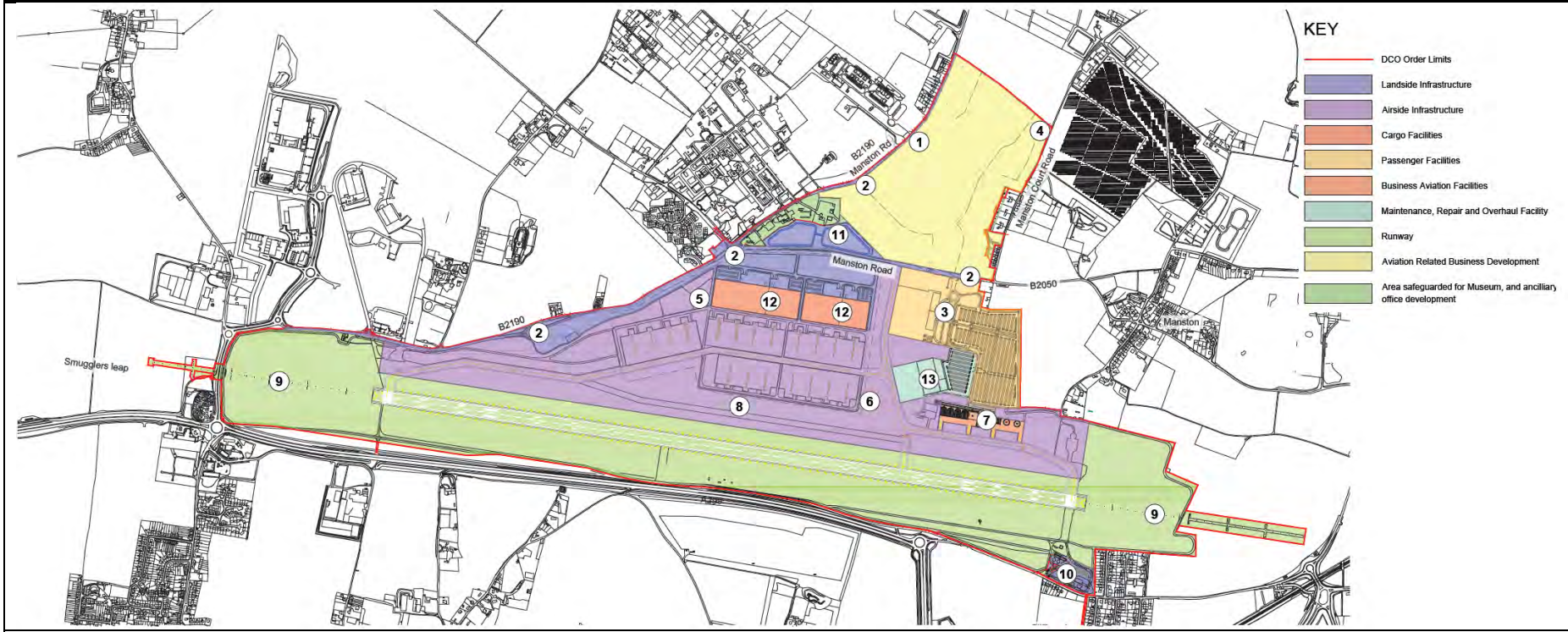
6.5 RSP projects that Manston will need to be able to handle 17,170 cargo related ATMs and that 1.4 mppa[113] will be handled by Year 20. Given that this level of throughput forms the basis of the Environmental Assessment, prima facie it would be reasonable to assume that the infrastructure shown in the Master Plan should reflect that required to handle this level of aircraft movement and passenger activity.

6.6 We note that the RSP Design and Access Statement (sections 3.01, 3.02) states that the requirement of 19 Code E stands for cargo aircraft was a given input assumption in the Client Brief, along with the requirement for 65,500m^2 of cargo facilities[114]. The Need Case for an airport development would normally be expected to set out clearly and transparently how these requirements have been derived from the demand forecasts. We would have expected the Application Documents to contain a specific justification of the scale of airside facilities proposed by way of, as a minimum:

- an indicative busy day schedule of aircraft movement by type time of day;
- a quantification of the number of aircraft stands required to handle those aircraft movements by reference to the schedule;
- the volume of cargo expected each day, the proportion expected to use the cargo facilities on-site and off-site[115], the time such cargo is expected to remain in the warehousing on-site, conversion of the volumes and dwell time to the storage space required.
- similarly for the passenger terminal requirements and number of stands required.

[111] It is unclear how the Code F aircraft shown within the fleet mix at Appendix 3.3 of RSP's ES will be accommodated.
[112] Azimuth Reports Vol III, para 5.1.2.
[113] Million passengers per annum.
[114] We note also that the DAS states that the brief was to double the size of passenger terminal facilities and add 1 passenger aircraft stand. As discussed in Section 3 of this Report, the justification for the scale of passenger terminal facilities given in the Azimuth Reports Vol III is nonsensical.
[115] Much of the cargo previously using Manston was trucked directly off-site from the aircraft side. This is common practice for some types of cargo, particularly where the integrator or forwarder has established consolidation and breakdown facilities located more centrally to the market.

Figure 6.1: RSP Masterplan – Proposed Site Layout



Source: RSP Design and Access Statement

6.7 Such information is missing from all of the key documents where it would normally be found in an airport development application, including the Planning Statement, the ES Scheme Description (Chapter 3), the Design and Access Statement and the Need Case (Azimuth Reports). As we pointed out in **Section 3**, to the extent that there is are any parameters given for the scale of facilities required in relation to the passenger terminal, these are fundamentally flawed.

6.8 Absent such a coherent explanation of how the forecasts translate into a physical requirement for infrastructure, leaving aside the validity of the forecasts themselves, the need for the facilities cannot be stated to have been justified. This is particularly relevant in the context of the required CPO which requires a compelling case to be made for the precise area of land that it is proposed be acquired.

6.9 To assist the Examining Authority, we now set out some of the key considerations in terms of the scale of facilities required relative to what is proposed in the RSP Master Plan.

Stand Requirements

6.10 As we have noted earlier, not all of the aircraft that RSP project to use Manston are Code E aircraft. Leaving aside the discrepancies between the reported aircraft mix in various parts of the Application Documents that we have highlighted in **Section 3**, 40% of aircraft movements are projected to be by smaller Code C aircraft, within which many are very small turbo-prop aircraft. It is normal practice to accommodate 2 Code C aircraft side by side within the area of 1 Code E stand. Hence, the total number of Code E stands required does not equate to the total number of aircraft requiring a stand at the same time. Furthermore, as Code C aircraft are shorter in length than Code E aircraft and, to the extent that all of the stands would not be required to accommodate Code E aircraft based on the proposed fleet mix, the length of a number of the stands could be materially shortened so reducing the overall apron area required[116]. Adoption of such principles would be consistent with ensuring efficient use of space and not over-designing the infrastructure. This would reduce the area of apron actually required to accommodate forecast demand.

Efficient Use of Stands

6.11 Taking into account that a Code E stand can accommodate more than 1 of the smaller aircraft types simultaneously and given the high proportion of such aircraft in the overall fleet mix, it is possible to assess how many aircraft a day each stand would be required to accommodate on RSP's 'forecasts' by using the phased provision of stands set out in the Design and Access Statement and the aircraft movement forecasts set out at Appendix 3.3 of the ES.

[116] The depth of a Code C stand is less than a Code E stand so the use of a Code E stand solely for 2 smaller aircraft does not use all of the stand depth as Code C aircraft are shorter nose to tail, leaving wasted space.

6.12 Using the Busy Day Multipliers set out in Appendix 3.3 to the ES, which show the extent to which the number of movements on a busy day is expected to be compared to an average day in the year, and assuming that freighter operations are typically in weekdays, i.e. only 250 days in a year, the number of peak/busy day aircraft movements by freighter aircraft that RSP claim would use Manston can be estimated. This starts at 24 (23.55) aircraft movements over a 24 hour day in Year 1, increasing to 73 (72.82) aircraft movements a day in Year 20. The number of aircraft requiring to park on a stand would be half the number of movements[117] and this can be converted to a Code E equivalent number of aircraft taking into account the projected fleet mix. Based on the 8 stands to be provided at Phase 1 rising to 19 stands by Year 20, the number of Code E equivalent aircraft that would be expected, on RSP's projections, to use each stand on a busy day would be 1.24 in Year 1 rising to 1.53 in Year 20. The number would be lower on an average day and even lower on an off-peak day. In other words, RSP are providing sufficient stand capacity for over 60% of all daily aircraft movements to be accommodated on stand at the same time. This represents a massively inefficient solution.

6.13 Based on a rational pattern of freighter aircraft operations, as set out at para. 3.44 above, we have set out an indicative stand utilisation chart based on the operating times and stand occupancy times for similar types of aircraft and types of operation (integrator, mail, general freight etc) based on equivalent operations at East Midlands. This is set out at **Appendix E**. This analysis shows an average stand occupancy time of around 3.5 hours within 24 hour period but this is affected by the assumption that, as at EMA, there may some aircraft that stay for longer than 8 hours in order to fit with EMA's integrator secondary hub role for DHL. We have assumed that there could be some similar operations at Manston in the unlikely event that it developed a hub role in order to be conservative in our assessment.

6.14 However, in practice, our analysis shows that the average stand occupancy time for freighter aircraft excluding these movements, is around 2¼ hours, consistent with the assumption of 2.5 hours set out at para. 4.5 of our November 2017 Report and as adopted by RSP[118]. On a conservative basis, our analysis shows no more than 9 Code E equivalent stands would be required to accommodate RSP's forecasts based on realistic patterns of airline operation. If the long stopping aircraft were not in the mix at Manston, as it is not realistically likely to become a secondary hub for an integrator, then it is probable that no more than 6 Code E equivalent stands would be required to meet the airline requirements.

6.15 As we have made clear in **Section 3** above, applying the proposed night movement quota would almost certainly result in a large part of RSP's freighter movement 'forecast' not operating due the effect of the restrictions on the commercial viability of the operation to the airlines, leaving aside the broader question of market viability overall. If, hypothetically, the airlines were willing to operate from Manston at commercially sub-optimal times, this would require extensive changes to the operating pattern but would still be containable within 6 to 9 Code E equivalent stands as a maximum.

6.16 RSP seek to justify the excessive provision of infrastructure by referring to the need for resilience:

[117] A movement comprising the arrival or departure of an aircraft from the runway.
[118] RSP NSIP Justification Statement, para. 22.

"The reason that the physical capability of the Proposed Development is much higher than the expected operational level is twofold. First, significant 'headroom' is required to be able to withstand operational issues that regularly arise and so is for reasons of resilience."[119]

6.17 In the first instance, allowance is typically made for a 'buffer' of time between planned operation of aircraft off of and on to a stand. This allowance is evident in the stand allocation chart at **Appendix E**[120]. This provides resilience for a normal level of operational delay. Over and above that it is normal practice in planning airport facilities to allow 10% additional stands for unforeseen events, e.g. stand outage, aircraft technical delays etc. In the case of Manston, this would require no more than 1 additional resilience stand to be available. Hence, at the very maximum, the number of stands required for 17,170 movements would be no more than 10. Furthermore, the requirement for these stands assumes that no use could be made of any of the passenger apron for cargo operations. Given the high proportion of smaller aircraft types in the fleet mix, this would also be eminently possible so reducing the required number of cargo aircraft stands further.

6.18 RSP appear to have assumed more than 100% over provision with 19 stands compared to the maximum of 9 stands operationally required. As explained earlier, this is a maximum stand requirement and, assuming that Manston could not fulfil a secondary hub role for an integrator, the required number of stands would be materially less.

Cargo Terminal Requirements

6.19 In association with proposed the 19 Code E cargo aircraft stands, the RSP Design and Access Statement Section 1.05 also states that the Brief required the provision of 65,500m^2 of cargo facilities, which is shown on the Master Plan to be 4 large cargo sheds in standard portal frame structures. Again, no justification is provided for this requirement and no explicit linkage is made to the forecasts of tonnage requiring to be processed through the facilities.

6.20 RSP themselves make reference[121], in their Masterplan Design Principles, to the objective that their development:

"'Sustains the improvements to operational efficiency for as many years as is practicable"

This appears to be something of an oxymoron given the above assessment of the efficiency with which the proposed stands would be utilised.

[119] Ibid, para. 29.
[120] We have allowed 30 mins to be cautious for freighter operations. For passenger operations a buffer of 15-20 mins would be more usual.
[121] RSP Planning Statement, para 4.14.

6.21 In the light of the claim about efficiency, we would have expected to see a calculation of the floor area of cargo facilities set out by reference to industry standards. The industry standards are set out in the IATA ADRM[122] explains that a cargo facilities size is a function of its proposed processing capability which it sets out under three categories of operation; Low Automation (mostly manual), Automated (average) and Highly Automated. The processing capability for each category is set by a tonnes per m^2 multiplier ranging from 5 to 17. It is worth noting however that some facilities across the world far exceed the top end of this range with facilities that process possibly more than 30 tonnes of cargo per m^2 of facility.

6.22 Given that Manston is intended by RSP to be a state of the art cargo handling facility, it is reasonable to assume that the tonnage per m^2 multiplier should be towards the top end of the range compared to older facilities which may not have been designed to modern standards. However, the multiplier used by RSP to size the cargo facilities appears to be of the order of 5.2 tonnes per m^2, i.e. at the bottom of the range when a more reasonable multiplier for a modern facility would be expected to be of the order of 13.5 tonnes per m^2. The cargo sheds at Manston, as with number of stands to be provided, are substantially oversized relative to the required throughput, by an order of 3 times at least.

6.23 It would appear that the scale of facilities proposed by RSP may have been based, to some extent on East Midlands Airport (EMA), which has a combined cargo shed footprint of approximately 80,000 m^2 and processed a total of over 375,000 tonnes of air cargo in 2018 at a usage multiplier of 4.7 tonnes per m^2. However, this is not a valid comparison for two principal reasons:

- ✈ Cargo handling facilities at EMA have been recently extended and are unlikely, therefore, to be operating at capacity at current tonnage levels;
- ✈ EMA operates as a hub for domestic road freight in addition to air freight given its position in the centre of the country and proximity to the M1.

For example, the Design and Access Statement for DHL's application to expand its cargo hub terminal makes clear that the primary reason for this expansion was to handle more road freight[123]. Manston is simply in the wrong place for this type of operation and, in any event, extensive road freight operations have not been assessed as part of the Transport Assessment.

6.24 Moreover, the assessment assumes that all of the cargo using aircraft at Manston needs to be handled in on-site cargo sheds. This is unlikely to be the case. Previous Manston operations were based on much of the freight being taken from the aircraft side straight off-site for distribution without entering the on-site cargo sheds, despite these sheds being underused and with ample capacity to handle all of the freight using the Airport. Given the structure of the industry and dependence on consolidated distribution centres in easily accessible locations, we would expect this pattern to continue if Manston re-opened, meaning that Manston would, in practice, require sufficient space for only a proportion of the cargo flown through the Airport to use the sheds, with the remaining freight trucked off-site in bonded trucks to be customs cleared at consolidation or distribution centres elsewhere.

[122] IATA (International Air Transport Association) Airport Development Reference Manual (ADRM) Edition 10, 2017.

[123] https://plans.nwleics.gov.uk/publicaccess/files/2928B5D0A88323F668C0208F281F5AC5/pdf/15_00319_FULM-DESIGN___ACCESS_STATEMENT_PART_1-341251.pdf, page 22.

Overall Capability of the Infrastructure

6.25 As RSP has acknowledged[124], the capability of the infrastructure applied for is at least 83,220 freighter aircraft movements a year. At a projected usage of only 17,170 freighter aircraft movements a year, this is clearly a highly inefficient development. Whilst some discrepancy would be expected between the theoretical capability of airport infrastructure and the practically achievable capacity when actual airline requirements are taken into account, the scale of the discrepancy is far in excess of what would normally be expected.

6.26 In essence, RSP plan to use only 20% of the available aircraft movement slot capability (as defined by the number of stands) that they plan to provide at Manston. As we discuss in the next section, this low utilisation rate of available capacity is highly inefficient and will inevitably result in a lack of viability of the investment. Medium sized airports in the UK typically operate at around 45 to 50% of available slot capacity when the peaks and troughs of airline demand are taken into account. Generally, operations are considered effectively unconstrained, in terms of allowing airlines the ability to operate at times at or close to when they would prefer, up to around 60% utilisation of available capacity. Beyond 70-75% utilisation, an airport is typically considered congested. Gatwick operates at well over 80% of its current capacity and Heathrow at around 99%.

6.27 By any measure, the level of utilisation proposed for Manston is below what would be reasonably expected. At 50% utilisation of available capacity, Manston as planned by RSP could accommodate almost 45,000 freighter aircraft movements a year without undue constraint on the airlines' ability to operate at commercially desirable times, leaving aside the obvious night movement constraint discussed in **Section 3**. It is important to stress that this does not mean there would be a market or need for it to handle this level of movements for the reasons outlined elsewhere in this report. Nonetheless, in order to reasonably accommodate the demand levels asserted as the need for the development and requiring to be assessed in terms of the likely significant effects[125], i.e. 17,170, this would imply a requirement for infrastructure of no more than 40% of the scale of the overall development proposed on the basis of efficient usage of the infrastructure. Any development of facilities above this level could be deemed excessive relative to efficient use of infrastructure and land in the longer term even if the 'forecasts' were correct. To the extent that the 'forecasts' are overstated, the requirement for infrastructure would come down pro-rata.

6.28 Whilst our assessment of the required number of stands takes into account realistic operating patterns which, as is made clear in our November 2017 Report[126], is necessary to assess the capacity of the infrastructure, this is not directly comparable to the theoretical capability of the infrastructure as RSP themselves accept. It remains the case that there is latent capability in the existing airport infrastructure at Manston that would be sufficient to allow it to handle the number of aircraft movements put forward by RSP as required in Year 20 without the need for RSP's development.

[124] RSP 2.3 NSIP Justification, para. 23.
[125] Ibid, para. 26.
[126] York Aviation, November 2017, paras. 4.6 and 4.7.

Passenger Facilities

6.29 As we have already noted in Section 3, the basis upon which the passenger terminal and apron facilities have been planned is unclear given the obvious errors in the design parameters set out. The proposed passenger terminal is stated in the Design and Access Statement (DAS) to have a footprint of 2,200m^2 initially, increasing to 4,500m^2 as demand requires[127]. However, there is lack of clarity as to what is actually proposed as the DAS variously refers to different footprints for the terminal. Whilst Vol 1, para. 2.01 cites the size as being 2,400m^2, the DAS also refers to there being only an extension of the existing passenger facilities rather than a new terminal (para. 1.05). The scale of the facility has not been justified even if it was clear what is proposed.

Other Aviation Facilities

6.30 RSP also cite a requirement for the Master Plan to accommodate other uses, namely General Aviation, Aircraft Recycling, and Maintenance Repair and Overhaul (MRO). As with the core air freight and passenger projections, RSP provide no assessment of the market for such activities specifically at Manston nor any justification for the scale of facilities proposed. To the extent that these occupy a material part of the site proposed to be acquired through compulsory purchase, this represents a substantial omission. As we set out at para. 2.65 of our November 2017 Report, these are highly competitive markets in terms of the number of airports seeking to attract such activities. In terms of Business Aviation, Manston is too far from London to be a major player in this market. The third opportunity, the MRO sector, other than related directly to major airline operations at larger airports, is limited in the UK as is evidenced by the recent failure of Monarch Engineering. Aircraft recycling has also been slow to develop despite active interest and operations at airports such as Newquay and Durham Tees Valley. We see very limited scope for Manston to attract these activities to any material extent so as to justify facilities beyond those that already exist on the airfield.

Northern Grass

6.31 To the north of the site, on the 'Northern Grass', a general business park development is shown. The RSP Design and Access Statement (Vol 3) shows the Northern Grass area laid out as a fairly conventional business park with a mixture of B8 warehouse units and B1 office buildings, each with their own car parking areas associated. In total, 105,100m^2 of accommodation is proposed and the DAS shows all of this being built out by Phase 2 of the development (Years 2-4). These buildings are located entirely on the landside of the B2050 and so will be unsuitable for activities integrally linked with the direct operation of the Airport.

6.32 The only justification originally given for these facilities were general statements about providing for airport related businesses "critical" to running the Airport:

"The Northern Grass area will accommodate infrastructure critical to the running of the airport including airport related businesses which do not require an airside location."[128]

[127] RSP Design and Access Statement Vol 4, para 7.17.4.
[128] RSP Planning Statement, para 3.76.

and

"A Business Park consisting of B1 and B8 units accommodating airport related businesses"[129]

6.33 These statements provided no justification for the scale of development proposed and how this relates to the operation of the Airport. RSP's Statement of Reasons simply says that this area has *"sufficient space on the Northern Grass to accommodate airport - related businesses that can be seen occupying premises in and adjacent to the vast majority of UK and European airports"*. This provides no specific justification for why any such uses would seek a site adjacent to Manston nor why they would qualify as associated development.

6.34 A further list of potential uses was set out in Appendix to the updated NSIP Justification Statement (published on 25th January 2019):

- *"radar equipment and its accompanying safeguarding clearances (these also limit the building heights across the remainder of the Northern Grass),*
- *airport management offices offering visibility over the airfield, with associated marketing suites and secure storage for equipment and materials that do not require an airside location (i.e. inside the security fence),*
- *offices and crew facilities for airlines (passenger and cargo),*
- *offices and flight planning facilities for flight schools,*
- *catering operation for passenger and business aviation flights,*
- *covered secure and valet parking operations,*
- *rental car operators – overnight garage, cleaning and office facilities,*
- *garage and offices for airside public transport providers,*
- *airport taxi company garage, cleaning and office facilities,*
- *vehicle depots and storage facilities for air cargo handlers and associated logistics*
- *companies,*
- *specialist bonded warehouses and other facilities (e.g. stables and other animal handling and veterinary facilities) that do not need to be constrained by an airside location,*
- *offices and warehousing for storage associated with MRO and aircraft recycling (including parting out) operations,*
- *office and storage facilities for outsourced contractors providing services to the airport (e.g. – maintenance, security, operations) that do not need to be airside,*
- *project offices for construction companies working on the airport, and*
- *offsite offices for Border Force, Police.*

[129] Ibid, para. 3.76.

6.35 However, this list appears to comprise not of airport-related businesses needing a landside location but of a mixture of essential airport facilities which would need to be located within the zone to the south of the B2050, e.g. airline crew offices, offices for Border Force, flight briefing facilities and facilities, garages for airside transport given that vehicles will typically not be licensed for the public highway, and those which do not appear relevant to the proposed use of Manston, e.g. airport taxi garages, covered valet parking, catering for passenger and business aviation flights. There remains a complete absence of any justification for the totality of the development proposed in this landside area save that RSP has indicated that it *"will seek to provide to the Examining Authority further examples of this type of airport-related development from other UK airports and important cargo led airports in Europe and North America."*

6.36 Taking into account the projections for Manston upon which RSP seek to base their case, the most relevant comparator, in this regard, remains EMA in the UK. East Midlands Airport has an associated landside business park, Pegasus Business Park comprised of c.52,000m^2 of accommodation. However, of this, c.16,000m^2 is comprised of 3 hotels associated with 4.9 million passengers using the Airport in 2018. Of course, hotels do not form part of the proposed used for the Northern Grass at Manston and, in any event, there is ample local supply in Ramsgate and Margate, as well as the Holiday Inn Express at Minster adjacent to the Airport, for any usage associated with the significantly lower volume of passengers projected by RSP. Of the remaining 36,000m^2 at EMA's Pegasus Business Park, many of the premises are vacant or occupied by non-airport related tenants amounting to around 23,000m^2, based on an examination on Google Earth. The proximity to the M1 and a location in the centre of the three East Midlands cities makes the site attractive to a broader range of non-aviation related business seeking proximity to the motorway. This leaves around 13,000m^{2}of accommodation occupied by what would be deemed airport-related or ancillary uses on RSP's definition.

6.37 There can be no justification for the scale of development proposed for the Northern Grass relative to the scale of operation which RSP put forward for Manston. By way of a further example, the proposed New Century Park Business Park proposed for land adjacent to Luton Airport comprises just under 60,000m^2 of accommodation, including a hotel of 6,600m^2[130]. Of the remainder, 11,100m^2 are expected to be used for airport-related business, with the remainder for general warehousing and office use. This has to be seen within the context of Luton being an airport handling over 17 million passengers a year with 1,400 freighter aircraft movements and over 22,000 tonnes of freight annually with plans for further expansion.

Conclusions on Justification for the Scale of Facilities

6.38 Without prejudice to our view that demand to use Manston is not likely to be anything like 17,170 cargo aircraft movements a year, we consider that the land required to accommodate such a number of movements would be substantially less than shown on the RSP Master Plan. The RSP Application Documents fail to set out any evidence or calculations to justify the extent of facilities proposed by reference to their own 'forecasts' both for the core airport infrastructure and any claimed associated development on the Northern Grass.

130 https://planning.luton.gov.uk/onlineapplications/files/5562977400C860F9DD68F7F243FEB90B/pdf/17_02300_EIA-Planning_Statement_Addendum_Final_V2-769078.pdf, page 31.

6.39 To assist the Examining Authority, we have set out the basis for estimating the required number of stands and cargo terminal infrastructure to enable RSP's forecasts to be accommodated based on the times that airlines would wish to fly. This does, of course, confirm the extent to which there would be dependence on night flying. Based on proper analysis of airline operating patterns, the maximum number of stands that would be required, even allowing a buffer for resilience, would be 10. Based on global benchmarks, the scale of cargo sheds could also be substantially reduced. This represents a topside estimate of the infrastructure required to handle RSP's 'forecasts' so as to provide sufficient capacity at the times that airlines would wish to fly and fully taking into account the need for resilience. This is not the same as the theoretical capability of the infrastructure, nor comparable to the capability of the existing infrastructure at the Airport if it re-opened.

6.40 As far as the Northern Grass is concerned, the list of airport related uses provided in response to questions from the Examining Authority is no more than a list of uses that may be required at an airport without any specific reference to whether they are actually needed at Manston or, indeed, the extent to which these uses would need to be accommodated in an airside location in any event. We can see no justification for the inclusion of the 'Northern Grass' within the DCO as associated development as there will be little requirement for the relocation of freight forwarding activity from adjacent to the UK's main cargo hub at Heathrow or elsewhere to Manston and any requirement could be accommodated south of the B2050. The development on the Northern Grass site appears to be speculative commercial development which, based on the precedent at East Midlands Airport – the UK's principal airport for pure freighter operations – would be expected to be largely for non-aviation related uses and, therefore, not qualify as associated development.

7 IMPLICATIONS FOR VIABILITY AND FUNDING

In the absence of any assessment of the Business Case for the development within the RSP Application Documents, in this section we have undertaken an assessment of the potential viability to assist the Examining Authority to assess the likelihood of the development plan being implemented if consented.

Our analysis shows that the RSP proposals for Manston Airport are not commercially viable even based on their optimistic traffic 'forecasts'. Fundamentally, the analysis of potential viability strongly suggests that no rational private sector investor would fund the re-opening of Manston Airport on the basis proposed by RSP. The Airport was never previously a financially viable operation and we see no reason for this to be any different in future.

When properly analysed, there is little prospect of the operation generating sufficient revenues to cover the costs for the investors nor deliver any returns on the investment for the foreseeable future. In the absence of evidence to the contrary, it is our judgement that investment would not be forthcoming to the extent necessary to even secure the re-opening of the Airport.

The upfront costs of re-opening the Airport, on the basis of a minimum initial capital spend of £145m for Phases 1 and 2, are such that EBITDA losses and a cash flow negative position are inevitable even with this lower magnitude of expenditure, i.e. replicating the position that existed historically and which, ultimately led to the Airport's closure.

Clearly, to the extent that traffic growth does not materialise as RSP envisage following the initial investment, it is clear that the financial position of the Airport would be materially worse.

Introduction

7.1 RSP's Funding Statement provides no information regarding the viability of the operation of the Airport on the scale proposed, nor sufficient information for an investor to consider whether it would be willing to contribute towards the funding of the investment. The only statement regarding the viability of the project is at para. 20 of the Funding Statement relating to capital costs estimates at para. 15:

"RiverOak has taken expert advice from RPS on the cost estimate for the project that is the subject of the application. The initial phase of the project, which will bring the airport back into use, is estimated to cost about £100 million. The cost of developing the remaining phases of the project over a 15-year period is estimated to be an additional £200 million, i.e. a total of £300 million. This cost estimate includes the cost of implementing the project, the cost of construction and the funding of the acquisition of the necessary rights over land, including any interference with rights"

"RiverOak has assessed the commercial viability of the project in the light of this information and is confident that the project will be commercially viable and will therefore be fully funded if development consent is granted"

7.2 As Altitude Aviation Advisory set out in their Addendum Report[131], this falls far short of the information that investors or lenders would require in order to consider whether or not to provide finance for the re-opening of the Airport. A full Business Plan and Business Case, accompanied by detailed financial modelling and sensitivity testing would be required. The information that would normally be expected within a Business Plan sufficient to secure investment are set out in Altitude's Addendum Report[132]. This accords with our experience in preparing such advise for investors in airports.

7.3 Although as noted in para, 2.5 above, the Planning Statement and ES assert that the Business Case and Business Plan are set out in the Azimuth Reports, these reports contain no financial analysis at all. Indeed, the Azimuth Report Vol II (para. 6.1.1) expressly refers to RSP needing to draw up a future marketing and development plan, which would necessarily need to form a crucial part of the Business Plan to inform the viability assessment. Hence, the Examining Authority has no basis for assessing the likelihood of the development being viable on an ongoing basis or whether it is likely to attract investment such that it would proceed at all. These matters are further explored in the Altitude Addendum Report.

7.4 The RSP Planning statement also claims, at para. 6.47, claims Funding Statement complies with Airports NPS requirement that development will be cost efficient for users. This would clearly not be the case if the costs of the excessive infrastructure, as discussed in the previous section, were passed onto users. A key issue that we go on to consider in this section is whether the development would be viable and at an efficient or competitive price for users even based on RSP's overstated 'forecasts'.

Assessment of the Financial Viability of Re-opening Manston Airport

7.5 In this section, we consider the financial viability of RSP's proposals for Manston Airport. The assessment of viability is crucial, as unless the operation of the Airport can be financially viable, it cannot survive in the medium to long term. If it cannot survive, it makes the investment and development superfluous and the Airport will not deliver any of the economic benefits claimed by Azimuth in Volume IV (albeit we believe these to be substantially overestimated in any case). Nor would the opening of an airport on an interim basis before failing comprise of a compelling case in the public interest for the development. A non-viable airport operation would in fact act as a drag on the economy as it would be abstracting resources that could be used more efficiently for other purposes.

7.6 Our assessment of potential viability has been undertaken using a range of information:

- we have been provided with historic and projected financial information on the operations of the Airport when it was still operating and used this information, along with the published accounts, to assess the potential EBITDA[133] performance of the Airport, taking into account the scope for material improvements in financial performance;
- we have used historic operating data provided to us along with CAA Statistics to identify key metrics for the Airport;

[131] Altitude Aviation Advisory, Analysis of the Freight Market Potential of a Reopened Manston Airport – Addendum: UK Regional Airport Financial Performance and Debt Funding Characteristics, February 2019.
[132] Ibid, Section 4, Figure 3.
[133] EBITDA – Earnings before Interest, Tax and Depreciation/Amortisation.

- we have examined the financial analysis of the RSP proposals prepared by George Yerrall on behalf of RSP[134]. This includes, in particular, assumptions around the potential capital expenditure relating to RSP's plans and its phasing. There is no more recent information on capital expenditure phasing has been brought forward by RSP so we have retained this as our basis for assessing the costs of development;
- our experience of unit revenues for aeronautical activities (including cargo handling) at UK and European airports;
- the traffic forecasts for the Airport set out by Azimuth, albeit, as described in **Sections 3**, **4** and **5**, we do not believe that these forecasts are anywhere close to being achievable.

7.7 We note that, whilst the RSP Funding Statement[135] asserts confidence in the Business Plan for the Airport, we have seen no other explanation of this than is contained in George Yerrall's 2017 analysis which we, therefore, assume represents the basis upon which this assertion is made.

7.8 We have structured this section as follows:

- Previous Financial Performance;
- Economics of Attracting Operations;
- Airport Profit & Loss;
- Covering the Costs of Investment.

Previous Financial Performance

7.9 The poor financial performance of Manston Airport previously was, ultimately, the reason for its closure. The Airport had been loss making for a considerable period of time. Our analysis is based on the Airport's report and accounts and financial information provided to us by the current owners which sets out the Airport's Profit & Loss performance for the financial years 2011/12 and 2012/13. Key parameters from this analysis are set out in **Table 7.1**.

[134] George Yerrall Proof of Evidence Appendix 3 submitted to the Planning Inquiry into the Application by Lothian Shelf (718) Limited relating to Buildings 1, 2, 3 and 4 at Manston Airport. (2017)
[135]RSP Funding Statement, para. 20.

Table 7.1: Manston Airport Historic P&L Performance (£000s)		
	FY2011/12	**FY2012/13**
Freight Related Revenue	£1,275	£1,398
Passenger Related Revenue	£105	£23
Fuel	£575	£280
Other	£700	£450
Property Revenue	£248	£155
Concession & Retail Revenue	£68	£16
Total Revenue	**£2,971**	**£2,322**
Operating Expenditure	**-£5,724**	**-£4,496**
EBITDA	**-£2,753**	**-£2,174**
Depreciation	-869	-£749
Amortisation		£105
EBIT	**-£3,622**	**-£2,818**
Interest and Similar Charges	-720	-£731
Net Profit before Tax	**-£4,342**	**-£3,549**
Source: York Aviation analysis of Report & Accounts and Stone Hill Park data.		

7.10 The extent of losses was significant at between £2.2 million and £2.8 million per annum on an EBITDA basis. It should also be recognised that these were years in which Manston's freight throughput was close to its historic peak.

7.11 There are several points to drawn out from this analysis that are important in considering Manston's future potential viability. We contrast these with the only financial information relating to the potential viability of a re-opened Manston put forward by RSP, contained in George Yerrall's Proof of Evidence to the Manston Change of Use Inquiry in 2017[136]:

- this historic analysis gives significant clues as to what revenues might be achievable in Manston's market place. The analysis suggests that Manston was achieving around £45 per tonne of cargo, which appears to include both landing fees and cargo handling revenue. We understand that these figures may have been inflated in the short term due to temporary contract that was lucrative for the Airport and that the underlying earnings potential per tonne was below this figure. £45 per tonne is approximately what George Yerrall has assumed for landing fees alone at Manston in his modelling. He then assumes a further £63 per tonne (at Year 5) for cargo handling. This does not appear credible given historic performance[137];

[136] George Yerrall Proof of Evidence Appendix 3 submitted to the Planning Inquiry into the Application by Lothian Shelf (718) Limited relating to Buildings 1, 2, 3 and 4 at Manston Airport. (2017)
[137] Ibid, Page 3.

- in 2011/12, when the Airport was handling around 35,000 passengers, it was achieving passenger related aeronautical charges income of around £3 per passenger. This, however, reflects rates being paid by Flybe and a small number of charter operations, which typically pay higher charges. George Yerrall assumes £2.50 per passenger will be attained in Year 5[138]. However, this is almost certainly too high, for the reasons outlined in **Section 5**, in the light of the significant incentive payments Ryanair, and probably the other carriers, will require to commence operations and based on our experience of the charges that they are prepared to pay at small airports;
- retail and concession revenue was around £1.95 per passenger in 2011/12. In our experience, this seems reasonable given the scale of operations and we would expect some growth in passenger income over time to reflect improved retail offer and similar as the passenger numbers grow. George Yerrall uses a £3 per passenger figure over the whole period[139]. This appears optimistic in all but the later years of the RSP's 'forecasts';
- operational expenditure (OPEX) per workload unit[140] was around £17.50 in 2011/12. This is exceptionally high and we would not expect this to be reflective of the OPEX per workload unit that could be achieved in the unlikely event that the levels of throughput projected by RSP/Azimuth were achieved. George Yerrall's analysis suggests OPEX per workload unit of around £11 in Year 5 dropping to around £8 in Year 25[141]. Our modelling based on the financial information we have reviewed and experience at other small regional airports suggests that these assumptions may actually be slightly too high.

7.12 It is clear from this analysis that there are substantial challenges in making Manston Airport commercially viable. This is partly about volumes, in that in its previous guise operations were too small to cover its fixed costs and realise economies of scale, but volumes in themselves are a significant challenge as has been set out earlier in this report. However, it is also about yields. To the extent that any figures have been produced by RSP (in George Yerrall's 2017 Proof of Evidence), they appear, in our experience, to rely on assumptions around the yields that the Airport can achieve that are substantially out of line with its historic performance, especially in the cargo market, even with significant investment in the product offered by the Airport, and taking into account the assumption that low fares airlines are expected to deliver much of the passenger throughput.

Economics of Attracting Operations

7.13 Prior to presenting our own assessment of the Airport's viability, it is important to consider the economics of attracting operations to Manston Airport as these clearly influence the assumptions made, particularly those around revenues.

[138]Ibid, Page 3.
[139] Ibid, Page 3.
[140] Workload Unit or WLU is a method of standardising combined throughput of an airport. 1 WLU comprises 1 million passengers or 100,000 tonnes of cargo per annum.
[141] Ibid, Page 4.

7.14 Fundamentally, an airport's attractiveness is about the market that it provides access to, the price at which it offers its services and the availability of other options (competition). Other factors are clearly important, such as the quality of infrastructure, but these are less important than the fundamental drivers identified. It is worth considering Manston's position in relation to these factors in both the cargo and passenger market.

7.15 In relation to cargo, Manston is not well located. It is on a peninsula at the periphery of the UK. Its local market is very limited and it is, in reality, peripheral to the London and south east markets, with relatively poor links to the motorway network. In terms of competition, although it has no competition locally, there are a wide range of airports better placed to serve the London and South East market. As we have seen above, although there may be some very minor and fleeting capacity issues in London in the very short term, capacity for additional cargo at these airports is unlikely to be an issue until well beyond 2040. This suggests that Manston's only lever for attracting traffic is price. It needs to offer its services at a significantly lower price in the market than its better geographically placed competitors (which it should be noted also have first mover advantages as well as the overwhelming advantages at Heathrow with a third runway and with its concentration of forwarding and consolidation activity).

7.16 Based on discussions with Manston's previous cargo management, we understand that this is precisely the situation that the Airport was in before it closed. Its only way to attract cargo traffic was to 'buy' it in by significantly undercutting charges and handling rates at other airports. There is no reason why this is likely to have changed given our analysis of the market set out in **Section 4**. We, therefore, believe that its historic cargo revenue performance is probably a strong guide to the future. However, we have assumed that, in the highly unlikely event that the Airport is able to establish itself in the market to the degree suggested by RSP, it may be able to begin to raise prices in the longer term.

7.17 The situation in the passenger market is essentially the same. The Airport has a very limited local market, particularly given that a significant proportion of its natural catchment area is sea. It is peripheral to the London and South East market and there are a wide range of airports better placed to serve this market. Once again, therefore, its only lever to attract traffic is price. Azimuth's passenger 'forecasts' (and indeed our own) essentially identify a low fares intensive airport, with a single hub service and some charter activity. This is likely to be an airline market heavily driven by price and potential market incentives, such as marketing support. This means that net revenues to the Airport from direct passenger charges are likely to be very low, particularly in the first few years of operation when start up incentives will undoubtedly need to be in place.

7.18 Overall, any assessment of the commercial viability of Manston Airport needs to be realistic about its situation and the yields that it is likely to be able to achieve. It should also be recognised that, however low its pricing, it still suffers from fundamental weaknesses that will mean attracting traffic will be very difficult. It remains our assessment that the Airport, if re-opened, would be unlikely to attract more movements by dedicated freighter aircraft than it previously handled and certainly no more than 2,000 such movements per year even in the long term.

Manston Airport Profit & Loss

7.19 Notwithstanding the lack of credibility of the 'forecasts' presented by RSP, York Aviation has undertaken an assessment of the commercial viability of re-opening Manston Airport based on the traffic 'forecasts' that underpin RSP's proposals (as presented in the Azimuth reports).

7.20 In the absence of any specific information provided by RSP in connection with the Application other than an estimate of £100 million to bring the Airport back into operation and a further £200 million of investment over the remaining period, we have based the phasing of the capital expenditure on that set out in George Yerrall's 2017 Proof of Evidence and taking into account the phasing information set out in RSP's Design and Access Statement. This has been adjusted to remove the development costs of the Northern Grass, as these should not be considered within an assessment of the core Airport operation's viability, albeit that they may provide a source of cross subsidy to support any losses that the Airport makes.

7.21 As noted above, RSP's Funding Statement[142] that states that the cost of Phase 1 is £100m, which we estimate comprises of:

- £25m is the minimum to reinstate the airfield to usable condition, including refurbishment works to the runway and re-equipping existing facilities such as the Control Tower and Fire Station;
- each stand, of which 8 are specified for Stage 1[143], is expected to cost £2.84m[144];
- the passenger terminal to be available for the commencement of operations in Year 2.

It is also assumed that this will need to include other costs, such as S106 payments and the cost of the other facilities, including the fuel farm, that RSP claim are necessary for the Airport to be operational[145].

7.22 The remaining costs are stated as a further £200m over 15 years, of which Stone Hill Park estimate £80m would be required to fund the B1/B8 development and associated infrastructure development on the Northern Grass. We have excluded this cost for the purpose of assessing the viability of the Airport in its own right absent any facilities providing a cross subsidy to core airport operations. On this basis, we estimate the indicative phasing of capex required to be:

- Years 0/1 £100m
- Years 3/4 £45m
- Years 9/10 £29m
- Year 13 £16m
- Year 16 £15m
- Year 19 £15m

[142] RSP Funding Statement, para. 15.
[143] RSP Design and Access Statement, Section 5.
[144] RSP Funding Statement, Appendix 3.
[145] This list of requirements is not necessarily accepted by Stone Hill Park as being strictly necessary for the Airport to re-open based on its previous operations.

7.23 To the extent that we have omitted the costs associated with any facilities essential for the operation of the Airport, we may have understated the capex costs required to secure the level of operations claimed. We have used the capital cost phasing as set out above within our assessment of the potential cash flow implications of the development to inform an assessment of the likelihood of the development attracting private sector investment. We have assumed that any costs already incurred by RSP are sunk costs and not included within our analysis.

7.24 Central to this assessment has been the development of a 'bottom up' P&L model for the Airport, based on the previous financial performance of the Airport taken from previous report and accounts, financial information about the previous operations provided to us, as well as assumptions around potential revenue metrics based on our broader market experience.

7.25 In developing this model, we have made a number of core assumptions:

- in relation to cargo revenues, we have taken the average revenues per tonne from the previous financial reports, including projections for 2014/15 as the basis for performance in the first seven years from the re-opening of the Airport, which is the point at which it is handling over 100,000 tonnes per annum. At this point, we have assumed that the airport has gained enough market power to introduce a freight handling fee of £5 per tonne in addition to the basic landing fee related revenue. This is assumed to step up by £5 every five years until Year 20 so increasing revenues. Given that the historic revenues included handling and given that we expect a substantial part of any tonnage to be trucked directly offsite, this is likely to be a highly optimistic assumption;
- passenger revenues are assumed to be £3.50 per passenger for the Hub Service, £1 per passenger for low fares airlines, net of incentive payments, and £5 per passenger for charter airlines. These are in line with our experience of what airlines are paying at UK airports currently. All are subject to discounts in the early years of operation to reflect the fact that Manston will need to offer significant incentives to airlines to offset risks in the early years;
- we have assumed fuel revenues will grow with total aircraft movements. However, we are aware that previous fuel prices at the Airport were higher than elsewhere given the relatively low volumes sold and that most customers bought fuel elsewhere. Hence, using historic fuel prices may overstate the revenue potential or the total revenues if price deters airlines from purchasing fuel;
- in relation to the 'Northern Grass', we have excluded this revenue from our analysis as it is not a core airport operation. As described above, we have also removed the capital expenditure relating to the development;
- in relation to other activities that might develop on site as proposed by RSP (such as MRO, aircraft dismantling etc.), we have not examined these propositions in detail. We have instead assumed that the Airport will receive ground rent from existing floorspace and that GA activity will reach similar levels to previously by around Year 5. We do not believe that any income from other activities is likely to be significant in the overall scheme of RSP's proposals and that, in most cases, the ability to secure these activities is little more than speculation.

7.26 The results of our analysis of the potential profitability that Manston could attain in the highly unlikely event that the RSP/Azimuth 'forecasts' of usage could be attained are set out for a number of representative years below in **Table 7.2**[146]. Our assessment suggests that Manston Airport could, on this basis, achieve total annual revenues of around £29.9 million by Year 20. Over the period, whilst the Airport is able to achieve significant economies of scale, with operating expenditure going from around £7.6 million in Year 2 to £22.9 million in Year 20, the core airport operation is only just EBITDA positive in Year 15. This performance immediately raises considerable doubts about the viability of RSP's proposals given the high levels of capital expenditure required to bring the Airport into full operation.

Table 7.2: Manston Airport Profit & Loss Assessment (£ million)

	Year 2	Year 5	Year 10	Year 15	Year 20
Aviation Revenue	**£4.5**	**£9.9**	**£13.5**	**£18.0**	**£25.6**
of which Freight Landing Fees	*£4.0*	*£7.3*	*£8.9*	*£11.3*	*£14.3*
of which Freight Handling	*£0.0*	*£0.0*	*£1.1*	*£2.7*	*£6.8*
of which Passenger Related	*£0.0*	*£0.9*	*£1.4*	*£1.7*	*£2.0*
of which Fuel	*£0.2*	*£0.6*	*£0.7*	*£0.8*	*£0.9*
of which Other	*£0.3*	*£1.1*	*£1.3*	*£1.4*	*£1.6*
Property Revenue Existing Portfolio	£0.2	£0.2	£0.2	£0.2	£0.2
Concession & Retail Revenue	£0.0	£1.5	£2.3	£3.1	£4.1
Total Revenues	**£4.8**	**£11.6**	**£16.0**	**£21.3**	**£29.9**
Operating Expenditure	**£7.6**	**£14.9**	**£16.6**	**£20.6**	**£22.9**
EBITDA (Airport Operations)	**-£2.8**	**-£3.3**	**-£0.6**	**£0.8**	**£7.0**
EBITDA Margin	**-58%**	**-28%**	**-0%**	**4%**	**23%**

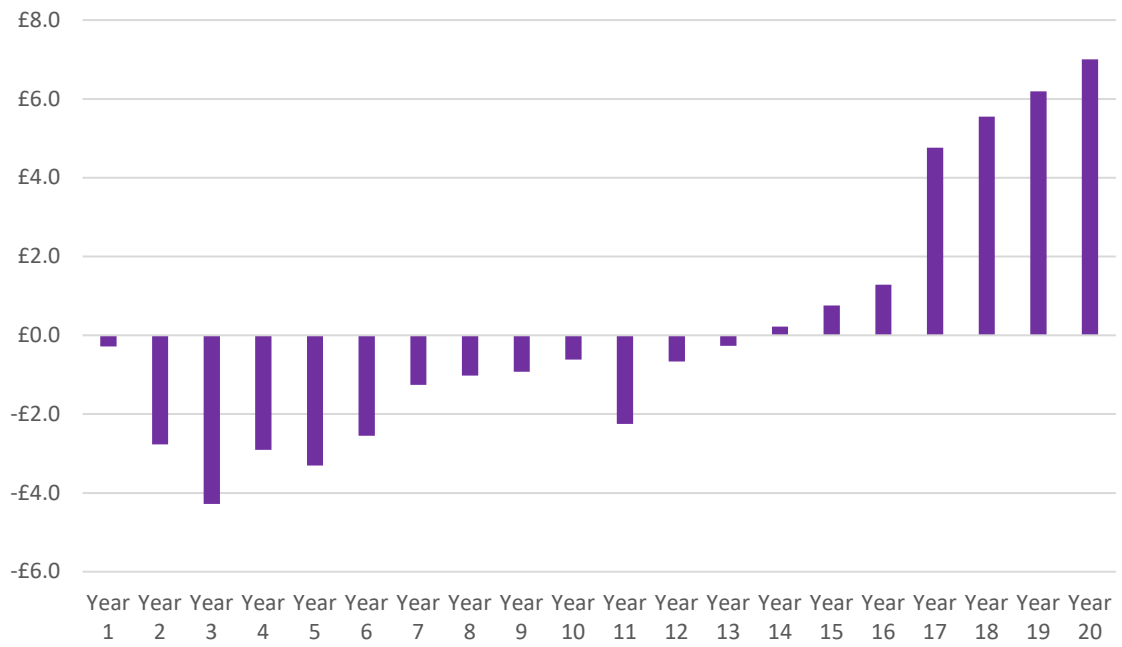
Source: York Aviation

7.27 It is important to note that, if we have been over optimistic in terms of our assumptions particularly in relation to the ability of Manston to earn cargo handling income in addition to landing fee related income, or in relation to the ability to achieve positive airport charges income from passenger flights, then the EBITDA will have been overstated. In particular, we have taken no specific account of the factors identified by Azimuth in relation to the costs of attracting traffic to Manston (as set out at para. 3.27 above) nor, it would appear did George Yerrall in his 2017 assessment. These would need to be reflected as additional costs or as revenue foregone. By way of illustration, stripping out cargo handling revenues would result in a net EBITDA of £0.2m even by Year 20, with greater losses in the early years. This highlights the extreme fragility of the expected financial performance of Manston even if RSP's highly optimistic throughput forecasts could be attained. There are a significant number of downside risks to the achievement of even this level of income and returns.

[146] We have assessed profitability at EBITDA (Earnings before Interest, Tax and Depreciation) level as this is a key metric used by investors and funders to consider the attractiveness of an airport investment. This, by definition, excludes interest charges on any debt, depreciation charges and tax payments.

7.28 The EBITDA performance over time is illustrated in **Figure 7.1**. The core airport operation is EBITDA negative for the great majority of the forecast period even assuming RSP/Azimuth's forecasts are delivered in full. It is important to note, as emphasised above, that the ability for the operation to deliver any profits, even in Year 14 and beyond, depends on a series of highly optimistic assumptions that may not be realisable in the market so we would emphasise that what is presented here is an upper bound estimate to illustrate the commercial risks that the investment would face even on a highly optimistic set of assumptions, i.e. this is very much a 'high case' position and not representative of the downside risks that an investor would certainly need to factor in before deciding if and how much it was willing to invest. These downside risks would become very apparent in any due diligence process ahead of investment and an investment case would, in all probability, have to be based on little or no prospect of operating profits even by Year 20.

Figure 7.1: EBITDA of Manston Airport by Year Scenario (£ million)



Source: York Aviation

7.29 This performance is in stark contrast to the position put forward by George Yerrall[147] on behalf of RSP in 2017, which remains the only information on the potential viability of the scheme put forward by RSP. That assessment sees the Airport EBITDA positive from Year 2 and achieving an EBITDA of £35.5 million by Year 20. Ultimately, we believe that this is driven by the unrealistic assumptions around revenues adopted, particularly in relation to revenues from cargo handling. If, as we believe strongly, the demand projections for the Airport are unrealistic, any assessment of profitability will be substantially overstated, i.e. the potential for viable operations to be attained will be significantly worse.

[147] George Yerrall Appeal Proof of Evidence Appendix 3. (2017), Page 9.

7.30 It should be noted that the financial performance that we project is not out of line with what is seen across the UK Regional Airport sector, as set out in Altitude's Addendum Report[148]. Indeed, based on 3.1m Workload Units identified in the Altitude Report, the EBITDA per Workload Unit of £2.25 would place Manston at the upper end of the range of performance, exceeded only by Humberside, Norwich and Southampton – all airports with high dependence on more lucrative business related travel and with strong markets serving the north sea oil and gas industry. This only serves to emphasise the optimism within the assumptions that we have used.

Covering the Costs of Investment

7.31 Below, we have used our analysis of Manston Airport's ability to generate cash in terms of EBITDA to consider whether it could support the costs of RSP's investment at the Airport and provide a commercially viable return. It is important here to note that George Yerrall himself, even though asserting that Manston would have pricing power, recognised that EBITDA may not be the most relevant measure when it comes to considering an investment with a high dependence on capital expenditure up front.

"Similarly profit margins mean nothing in isolation. The quid pro quo for profit margin in the Airport business is Capital Expenditure ("CapEx"). Whilst the market "Wisdom" around an airport EBITDA margin refer to an excess of 40%, this must be qualified by understanding the CapEx requirements, costs and most importantly the CapEx cycle. Passenger Airports require less CapEx at the outset, but thereafter require similar amounts deployed at more frequent intervals than their Cargo relatives"[149]

7.32 George Yerrall goes on[150] to make the point that:

"Net Income is a better guide than EBITDA to the profitability and inherent value of the Cargo business as it includes the normalisation of CapEx through our true depreciation curves."

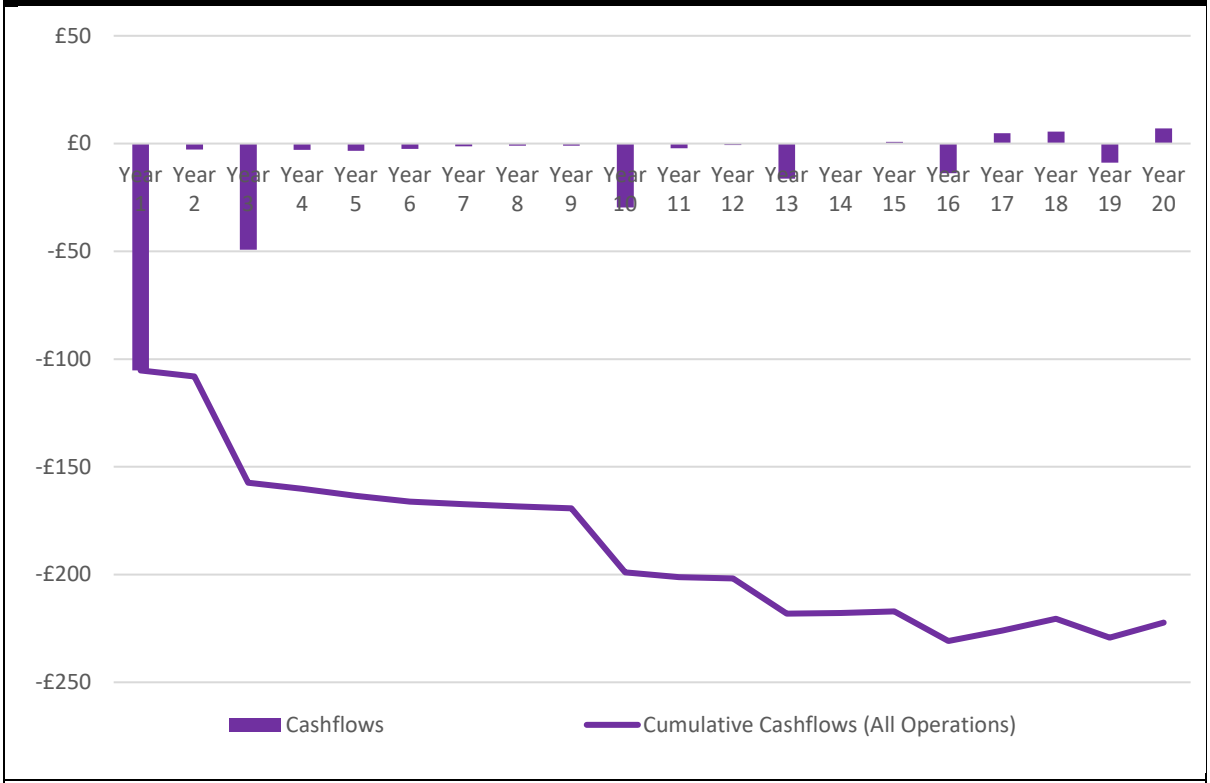
We do not have sufficient information regarding the specific assets and their costs to prepare depreciation curves for RSP's proposed investment in Manston so, for illustrative purposes, we have set out a cash flow analysis. The results are in stark contrast to the picture painted by George Yerrall as set out in his Figure 10.

7.33 In undertaking our analysis of the cash flow implications, we have used the RSP capital expenditure programme set out in George Yerrall's analysis[151] as a basis, as set out in para. 7.22 above, adjusted for capital expenditure relating to the Northern Grass. It should be noted that we have not made any explicit allowance for the substantial land acquisition or blight costs in relation to the re-opening of the Airport which are likely to become payable, in the main, before development could commence.

[148] Altitude Aviation Advisory, Analysis of the Freight Market Potential of a Reopened Manston Airport – Addendum: UK Regional Airport Financial Performance and Debt Funding Characteristics, February 2019, Section 4.
[149] George Yerrall Appeal Proof of Evidence Appendix 3. (2017), para. 5.
[150] Ibid, para 27.
[151] Ibid, Page 5.

7.34 **Figure 7.2** shows the yearly cashflows and cumulative cashflows for Manston Airport over the 20 year forecast period. The results of this analysis suggest very strongly that RSP's proposals, even on their own highly optimistic traffic forecasts and with revenue assumptions that may not be capable of realisation in the market, are nowhere close to being commercially viable. The cumulative cash position is still substantially negative in Year 20 (-£222 million). An investor would have to bear a negative and deteriorating cash position for well over 20 years even on our most optimistic set of assumptions. This would simply not be rational behaviour for a commercial investor.

Figure 7.2: Scenario 1: RSP Proposals Cumulative Cashflows for Manston Airport (£ million)



Source: York Aviation

7.35 The financial performance is in fact so poor that it is not actually possible to calculate an Internal Rate of Return (IRR). This is further evidence that no rational commercial investor would fund RSP's plans. By way of reference, it is worth noting that the allowable return at Heathrow set by the CAA is currently 5.35%. This is the rate of return allowed for one of the most stable, established and low risk airport assets in the world. We would typically expect an IRR of between 7% and 9% for an established UK regional airport. For a high risk investment such as re-opening a previously failed small regional airport, we would expect rates of return substantially in excess of that.

7.36 For Manston to offer a rate of return that would be commercially attractive to an investor or funder, perhaps around 15%, average aeronautical charges at the airport would need to be 275% higher throughout the forecast period than we have assumed. This would mean average aeronautical charges per workload unit of around £18. For comparison, aeronautical charges per workload unit at East Midlands were around £2.80 and around £5.10 at Stansted in the last available year. In other words, charges would have to be so high that it would render completely uncompetitive and it would become even more certain that RSP's traffic 'forecasts'. could not be achieved.

7.37 Further considerations relating to the fundability of the proposed development are set out in full in Altitude's Addendum Report.

Conclusions

7.38 In the absence of any assessment of the Business Case for the development within the RSP Application Documents, we have undertaken an assessment of the potential viability to assist the Examining Authority to assess the likelihood of the development plan being implemented if consented.

7.39 Our analysis shows that the RSP proposals for Manston Airport are not commercially viable even based on their unreasonably optimistic traffic 'forecasts' and taking a number of optimistic revenue assumptions. Fundamentally, the analysis of potential viability strongly suggests that no rational private sector investor would fund the re-opening of Manston Airport on the basis proposed by RSP. The Airport was never previously a financially viable operation and we see no reason for this to be any different in future. When properly analysed, there is little prospect of the operation generating sufficient revenues to cover the costs for the investors nor deliver any returns on the investment for the foreseeable future. In the absence of evidence to the contrary, it is our judgement that investment would not be forthcoming to the extent necessary to even secure the re-opening of the Airport.

7.40 Even if the Airport re-opened on the basis of a minimum initial capital spend (£145m for Phases 1 and 2), this would inevitably limit the operation to a scale where ongoing EBITDA losses were inevitable, i.e. replicating the position that existed historically and which, ultimately led to the Airport's closure.

7.41 Clearly, to the extent that traffic growth does not materialise as RSP envisage following the initial investment, it is clear that the financial position of the Airport would be materially worse.

8 CONCLUSIONS

8.1 This report updates and adds to the analysis of the flaws in RSP's Need Case, as set out principally in the Azimuth Reports, as presented in our November 2017 Report. In practice, the Azimuth Reports are little changed and, to the extent that new material has been added, do not address or rectify the substantial errors that we identified in the analysis contained therein.

8.2 Our November 2017 Report made clear that:

- RSP's analysis of our earlier work for the Freight Transport Association (FTA) and Transport for London (TfL) was flawed and this work did not support RSP's conclusion that there would be a substantive or sustainable role for Manston in the UK air freight industry.
- The remaining evidence relied on by RPS to justify its Need Case is almost entirely based on circumstantial evidence related to the shortage of airport capacity principally for passenger flights, that can also carry bellyhold cargo, in the circumstances where no additional capacity is provided at any of the London Airport. This is simply irrelevant, particularly given that it is Government policy to promote the development of a third runway at Heathrow.
- The analysis presented by Azimuth to support RSP's case shows a lack of understanding of the economics of the air freight market, especially in failing to recognise the economic drivers that prioritise the use of bellyhold capacity over dedicated freighters.
- Manston's past operation was economically inefficient due to the inherent lack of viability. Reopening the Airport has no realistic prospect of success as there are more economically efficient alternatives available for any freight displaced from Heathrow in the short term, pending the development of a third runway.
- Azimuth's 'forecasts' rely strongly on the attraction of an integrator but Manston is too peripheral for integrator operations serving the UK.
- Azimuth's interview survey, used as further justification for RSP's freight movement forecasts, relies on a small list of mainly local companies with something of a vested interest in seeing Manston re-opened and does not provide a basis for the specific aircraft movement forecasts upon which the case relies, not least as it is not possible to relate the proposed services to be operated with the responses by the interviewees. There is simply no explanation for, or justification for, the services postulated by Azimuth. There is a total lack of credibility in the approach adopted.
- To illustrate this lack of credibility of the forecasts, in Year 2 (the first operational year), a cargo throughput of nearly 100,000 tonnes is forecast by Azimuth. This would make Manston the 5th largest freight airport in the UK in its first year after re-opening. It would make Manston the 3rd busiest airport in the UK in terms of tonnage carried on dedicated freighter aircraft. This is simply not a credible proposition.
- Proper analysis of the UK air freight market showed that there is plenty of freighter capacity at Stansted and East Midlands Airport to accommodate any growth required in dedicated freighter operations such that there will be no shortage of capacity across the UK and no role for Manston in accommodating traffic spilled from other airports. These airports are better located relative to the market and the key locations for distribution within the UK.
- Our estimate was that Manston would, at best, be able to attain 2,000 annual air cargo aircraft movements by 2040 and it is equally plausible that it might not achieve more than 750 such movements annually as operated when it was previously open.

- Our initial assessment of the passenger market was that the throughput might, at best, be around half of that projected by RSP and, hence, given the dependence on passenger related income for the financial viability of airport operations, this would impact substantially on the viability of the proposal.
- Our assessment was that the existing infrastructure at Manston Airport, if made good, would be capable of handling 21,000 annual air cargo aircraft movements. The actual usage of that capability would depend on the pattern of operation and how the infrastructure was used on a day by day basis.
- We also gave provisional consideration to the land required to accommodate future forecast demand. Without prejudice to our view that demand to use Manston is not likely to be anything like 17,171 cargo aircraft movements a year, we considered that the land required would be substantially less than shown on the RSP Master Plan and that the proposed land take is excessive and without justification in terms of the compulsory acquisition of the land, particularly given the inherent implausibility of the demand forecasts upon which the assessment was made.
- We could see no justification for the inclusion of the 'Northern Grass' area within the DCO on the basis of it being for associated development. There will be little requirement for or likelihood of the relocation of freight forwarding activity from adjacent to the UK's main cargo hub at Heathrow or elsewhere to Manston.
- Azimuth made errors in the assessment of the socio-economic implications of the proposed development, particularly in terms of the use of inappropriate multipliers, the assessment of impacts a national scale, rather than the local scale in East Kent as implied by Azimuth, and should have taken displacement of activity from other UK airports fully into account, reducing the impacts well below those stated.

8.3 Our overall assessment in November 2017 was that RSP's case lacked any real credibility. Nothing has fundamentally changed and to the extent that there have been changes, for example in the formal designation of the Airports NPS and the progress towards the development of a third runway at Heathrow, the need for Manston is even less than we previously assessed.

8.4 In updating of our previous work, we have taken particular cognisance of the requirement for RSP to present a compelling case in the public interest to justify the compulsory acquisition of land. This goes beyond the theoretical test of the capability of the infrastructure proposed but must, necessarily, consider the likelihood and extent of the level of usage of that infrastructure and the extent to which there would be wider public benefit from the land being used in that way.

Aviation Policy

8.5 The whole of the RSP need case for the development of an air freight hub at Manston is based on the Azimuth Reports. A flawed interpretation of Aviation Policy is still set out in Azimuth's Volume I, which seeks to infer support for the development of a mainly freight airport at Manston based on the evidence before the Airports Commission of the potential damage to the UK economy if no additional hub airport capacity for passengers was provided at Heathrow (or a reasonable alternative to Heathrow). This was never a relevant basis for considering whether there was a case for re-opening Manston as a primarily air freight airport, as the vast majority of the economic benefit cited relates specifically to the benefits to passengers in the main using global passenger services from an expanded hub Heathrow – a need that Manston patently cannot and does not claim that it will be able to meet.

8.6 The clear decision by Government in favour of the building of an additional runway at Heathrow will transform capacity available to the air freight sector. There can be no doubt that the use by RSP of pre-NPS evidence on the need to address the shortage of airport capacity overall to serve London is misleading and incorrect. Properly interpreted, Government Aviation Policy makes clear that expansion of capacity at Heathrow, allowing more global air connections providing additional bellyhold capacity and scope, if required, for more dedicated freighter movements at Heathrow, is the identified means of meeting future air freight demand, along with the continued role for East Midlands and Stansted as air freight gateways with ample spare capacity.

Errors and Inconsistencies of Analysis

8.7 In this report, we have identified further inconsistencies and mathematical errors in the 'forecasts' presented by Azimuth and others in the RSP team to justify the proposed development at Manston. Whilst individually some of these errors and discrepancies might seem small in scale and impact, others are highly significant and serve to undermine the credibility of the whole approach outlined in the Azimuth Reports and throughout RSP's Application Documents. The combined implications are significant in terms of whether a) the application should actually have qualified as an NSIP; b) in terms of the level of demand that Manston might attract if it re-opened as an Airport and the viability of the proposed operation; and c) whether the environmental assessments undertaken are robust.

8.8 The most significant of these errors relate to:

- the lack of any soundly based forecasts – instead of forecasts based on an understanding of markets, costs and real potential, RSP's case is founded on a flawed list of airlines that it claims will definitely operate at Manston and then grow their business at Manston. Several of these airlines do not operate air freight services at all and others would be unlikely to operate to Manston for the reasons we set out. Hence, the list presented no more than a 'guesstimate', without any supporting evidence. These are not 'forecasts' in the sense that is normally recognised in the industry;

- ✈ the lack of realism in the fleet mix overall and the assumed pattern of day/night time operations, particularly in relation to the implications for the prospect of integrator and mail operations being attracted to use Manston at all. This further undermines the credibility of the short term 'forecasts' as, contrary to what RSP claim, airlines would not be able to operate to Manston on an unconstrained basis to meet their own commercial requirements but would be so constrained during the night period as to make the majority of the operations claimed by Azimuth unviable for the airlines;
- ✈ the overstatement of longer term demand projections through the use of unjustified growth rates due to mathematical errors made by Azimuth.

8.9 These errors and inconsistencies render the so-called 'forecasts' completely unreliable as a basis for assessing the extent and nature of any usage of Manston in the event that the Airport re-opens.

Understanding the Air Freight Market

8.10 Examination of market trends and the structure of the air freight market make clear that there is no role for Manston, other than possibly as a niche cargo operation, as with its historic operation. The trend in favour of bellyhold for the carriage of general air freight is clear. This freight forwarding sector is heavily concentrated around Heathrow for this very reason and the associated consolidation activity essential drives the choice of airport based on the most economical freight rates available for any consignment. This is highly unlikely to be a dedicated freighter option from an airport remotely located in East Kent.

8.11 R3 will provide for a doubling of air freight capacity at Heathrow, mainly in bellyholds of passenger aircraft but also scope for dedicated freighters to the extent that these are required to feed the hub at Heathrow. Indeed, the ability to provide a step change in capacity for air freight was one of the principal reasons why the Government chose the specific proposal for the development of a new runway. Freight facilities at Heathrow are actively being modernised and extended in anticipation of that growth of cargo activity there.

8.12 The integrators are already well established at East Midlands Airport in particular as well as using Heathrow and Stansted to serve the main markets in England. Manston is too far from the distribution centres along the M1/M6 axis to function as an integrator base, leaving aside that the proposed night movement restrictions would render any such operation unviable for the airline/integrator.

8.13 This leaves niche/specialist cargo operations as the only possible market for Manston. This would be consistent with the types of cargo that Manston used to handle. Ultimately, this is a very small market and unlikely to result in Manston handling more freighter movements than it did historically. This has profound implications for the Need Case as a whole, not least as it seems likely that any freighter activity would in fact need to be displaced from elsewhere through price incentives as there are few, if any, natural market drivers which would make Manston the first choice location and given the switching costs identified by Azimuth.

Air Passenger Forecasts

8.14 As with the asserted air freight 'forecasts', Azimuth provide no quantified analysis of the market to justify the passenger forecasts. The passenger element of the forecasts will be a vital element in considering the potential viability of the Airport as, generally, passenger operations offer better margins for an airport than cargo operations given the ability to earn revenue from shops and car parking. Furthermore, much of the asserted economic benefit from the Manston operation stems from passenger flights rather than cargo operations.

8.15 To assist the Examining Authority, we have set out in full our market assessment for passenger services at Manston. We have undertaken this analysis on the same basis as we would for any UK regional airport and presented it in a form that would be normal practice at an airport planning inquiry. Such analysis is completely missing from the Azimuth Reports.

8.16 Proper analysis of the market confirms that Manston is, at best, only likely to attract around half of the number of passengers claimed, without analysis, by Azimuth Associates of the 20 year period of the projections. This has inevitable implications for both the scale of facilities required and the viability of the airport operation as a whole. It is highly likely that attracting such services will require support from the public sector as well as highly discounted airport charges. Past experience would suggest that there would remain a high risk of the airlines failing to sustain the routes on a viable basis.

Infrastructure Requirements

8.17 Without prejudice to our view that demand to use Manston is not likely to be anything like 17,170 cargo aircraft movements a year, our analysis shows that the land required to accommodate such a number of movements would be substantially less than shown on the RSP Master Plan. The RSP Application Documents fail to set out any material that justifies the extent of facilities proposed by reference to their own 'forecasts' both for the core airport infrastructure and any claimed associated development on the Northern Grass.

8.18 To assist the Examining Authority, we have set out the basis for estimating the required number of stands and cargo terminal infrastructure to enable RSP's 'forecasts' to be accommodated based on the times that airlines would wish to fly. This does, of course, confirm the extent to which there would be dependence on night flying. Based on proper analysis of airline operating patterns, the maximum number of Code E equivalent stands that would be required, even allowing a buffer for resilience, would be 10. This is an assessment of the required capacity to handle flights at the times airlines would wish to operate which is not the same as the assessment of the theoretical capability of the existing or planned infrastructure at Manston.

8.19 Based on global benchmarks, the scale of cargo sheds could also be substantially reduced to may be no more than 1/3 of the size proposed by RSP. Overall, even in the highly unlikely event that RSP/Azimuth's 'forecasts' were realised, the overall scale of development required would be no more than of the order of 40% of that proposed in RSP's Master Plan.

8.20 As far as the Northern Grass is concerned, the list of airport related uses provided recently by RSP is no more than a list of uses that may be required at an airport without any specific reference to whether they are actually needed at Manston or, indeed, the extent to which these uses would need to be accommodated in an airside location in any event. We can see no justification for the inclusion of the 'Northern Grass' within the DCO as associated development as there will be little requirement for the relocation of freight forwarding activity from adjacent to the UK's main cargo hub at Heathrow or elsewhere to Manston and any requirement could be accommodated south of the B2050.

8.21 The development on the Northern Grass site appears to be speculative commercial development. The total extent of landside airport related uses at East Midlands Airport, other than hotels which do not feature as part of Manston's plans, is 13,000m^2, or 13% of the scale of development proposed for the Northern Grass by RSP. Hence, based on the precedent at East Midlands Airport – the UK's principal airport for pure freighter operations – the extent of the proposed development on the Northern Grass means that it would be expected to be largely for non-aviation related uses unconnected to the operation of the Airport.

Viability

8.22 In the absence of any assessment of the Business Case for the development within the RSP Application Documents, we have undertaken an assessment of the potential viability to assist the Examining Authority to assess the likelihood of the development plan being implemented if consented. Our assessment is inherently optimistic and represents a 'high case' not the most likely outcome.

8.23 Our analysis shows that the RSP proposals for Manston Airport are not commercially viable even based on their unreasonably optimistic traffic 'forecasts'. Fundamentally, the analysis of potential viability strongly suggests that no rational private sector investor would fund the re-opening of Manston Airport on the basis proposed by RSP as the development is likely to deliver negative returns to investment for the foreseeable future.

8.24 The Airport was never previously a financially viable operation and we see no reason for this to be any different in future. When properly analysed, there is little prospect of the operation generating sufficient revenues to cover the costs for the investors nor deliver any returns on the investment for the foreseeable future. In the absence of evidence to the contrary, it is our judgement that investment would not be forthcoming to the extent necessary to even secure the re-opening of the Airport.

8.25 Clearly, to the extent that traffic growth does not materialise as RSP envisage following the initial investment, it is clear that the financial position of the Airport would be materially worse. It is our assessment that, even if initial investment was forthcoming, which we doubt, it is inevitable that the Airport would close again in the medium term due to lack of inherent viability.

Overall Conclusion

8.26 Fundamentally, the whole Need Case for the development of Manston as an air freight hub is infected with flaws and errors of understanding such that the so-called 'forecasts' of air freight and passenger demand have no credibility at all. Even if they were credible, the scale of development proposed is unjustified and excessive. The development and operation of the Airport would simply be unviable and incapable of attracting competent investors.

APPENDIX A: CV FOR LOUISE CONGDON

Louise Congdon
Managing Partner

Curriculum Vitae

- Louise is an experienced airport planner and strategist with 42 years' experience in the aviation industry for the UK Civil Aviation Authority, Birmingham and Manchester Airports; at a senior management level for 17 years. She set up York Aviation as Managing Partner in September 2002.
- At Manchester Airport, Louise played a key role in influencing UK and European aviation policy debates and was responsible for corporate strategy, business planning, forecasting, and overall aviation policy development, including the strategy and concepts behind the Airport's Development Strategy, the second passenger terminal, and the second runway. Louise gave the principal evidence on Need at the Public Inquiry into the Second Runway and also presented evidence on the need cases at Public Inquiries into Liverpool Airport and Doncaster Sheffield Airport.
- During this time, Louise chaired committees and represented both the UK Airport Operators Association and ACI EUROPE (the relevant trade bodies for airports) in discussions with the UK Government and European Commission in relation to slot allocation, ground handling, airport capacity and airspace. Louise was a member of the Government working party (RUCATSE) which previously recommended the development of a third runway at Heathrow in 1993. Louise was actively involved in the preparations for the Future of Air Transport White Paper of 2003, including acting as chair for a number of consultation events both before and after leaving Manchester Airport to set up York Aviation.
- Louise has also given evidence on need and economics at Public Inquiries into Stansted Airport Generation 1, Farnborough Airport Weekend Movements, London Ashford Airport, Redhill Airport, Belfast City Airport Seat for Sale Limit and London City Airport Development Programme.
- Louise has a BA (SOC SCI) Hons in Geography, Class 2.1, from the University of Sheffield 1974, and a Master of Transport Design, from the University of Liverpool 1976 (including thesis on National Airport Planning). Louise was appointed specialist adviser to the House of Commons Transport Select Committee from 2011 to 2014.

Selected Personal Relevant Experience with York Aviation

- Department for Transport: Advice in connection with technical issues relating to the Airports National Policy Statement (2017-9);
- London Luton Airport Ltd – Ongoing (since 2006) assignment to provide advice to the local authority owned company on air traffic forecasting and strategic airport development options for Luton and the potential financial and commercial implications;
- London City Airport – ongoing support in relation to air traffic forecasting and capital expenditure proposals, technical due diligence in respect of refinancing, development of the need and economic case for the City Airport Development Programme, due diligence connected with the acquisition of the Airport in2006 and in 2016, development of an updated Master Plan (ongoing since 2005);
- Transport for the North - support for an international connectivity study to identify the future strategic role of international air services and passenger sea travel in supporting economic growth across the Northern Powerhouse (2016);
- Transport for London – support in relation to the development of air transport policy and submissions to the Airport (2011 and 2013/14);
- Civil Aviation Authority (with Europe Economics) – advice in relation to Heathrow Airport's surface access strategy and the relationship to airport charges;
- Scottish Enterprise/Scottish Government – socio-economic assessment of Prestwick Airport and strategic options (2012/13), support for route development activity (2018);
- Leeds Bradford Airport – vendor due diligence in relation to the sale of the Airport (2006/7) and vendor diligence on refinancing (2016/2017)
- Belfast City Airport – economic and forecast advice in relation to the Seat for Sale Limit (2013-2015), support to 3i on the acquisition of the Airport (2016);

- Technical Airport Capacity Advice to the London Assembly Transport Committee (2013);
- Northern Ireland Government – contribution to air connectivity research (2014);
- Durham Tees Valley Airport – Business Plan advice to local authority shareholders (2013/4 and 2018);
- City of Gloucester/Cheltenham Borough Council – Review of Gloucestershire Airport Asset (2014); subsequent commissions to review airport governance and assist in the preparation of a Strategic Business Plan (2014/15) and Viability Assessment (2017);
- Advice to the Welsh Government in connection with the acquisition of Cardiff Airport (2013) and subsequent route development advice (2014/5);
- Support to an investor in Belgrade Airport (2017);
- Development of an Aviation Strategy for England's Regional Development Agencies (2002/5);
- Other clients include:

  States of Jersey

  States of Guernsey

  Isle of Man Government

  Blackpool Council

  Ryanair

  Birmingham Airport

  City of London Corporation

  Aberdeen Airport

  Edinburgh Airport

  Liverpool Airport

  Antin Infrastructure Partners

APPENDIX B: YORK AVIATION NOVEMBER 2017 REPORT

York Aviation

STONE HILL PARK LIMITED

SUMMARY REPORT ANALYSING USE OF YORK AVIATION MATERIAL BY RIVEROAK STRATEGIC PARTNERS LIMITED AND ASSESSMENT OF CAPABILITY OF MANSTON AIRPORT

NOVEMBER 2017

York Aviation

Originated by: Louise Congdon/James Brass/Niall Gunn/Richard Connelly

Dated: 10th November 2017

Reviewed by: Richard Kaberry

Dated: 13th November 2017

STONE HILL PARK LIMITED

SUMMARY REPORT ANALYSING USE OF YORK AVIATION MATERIAL BY RIVEROAK STRATEGIC PARTNERS LIMITED AND ASSESSMENT OF CAPABILITY OF MANSTON AIRPORT

Contents

EXECUTIVE SUMMARY

1. York Aviation was appointed by Stone Hill Park Limited (SHP) in September 2017 to review the evidence presented by RiverOak Strategic Partners Limited (RSP) in connection with RSP's prospective application for a Development Consent Order (DCO) for the redevelopment and re-opening of Manston Airport as a hub for international air freight services, which also offers passenger, executive travel and aircraft engineering services.

2. We were the authors of two specific reports upon which RSP seek to rely in making their case, namely a report for the Freight Transport Association (FTA) and Transport for London (TfL) in 2015 and a note on Freight Connectivity for TfL in 2013. The first of these documents was used by RSP in its public consultation and this may have led respondents to believe that we were supporting the re-opening of Manston, which is not true and, as we go onto explain in this report, our analysis in these documents for the FTA and TfL does not support RSP's conclusion that there would be a substantive or sustainable role for Manston in the UK air freight industry.

3. The RSP case is principally based on circumstantial evidence presented in the Volumes I to IV of *Manston – A Regional and National Asset* prepared by Dr Sally Dixon of Azimuth Associates (June 2017 consultation version). Much of the material upon which Azimuth seek to rely as the basis of RSP's case relates to the economic costs to the UK if additional passenger hub capacity is not provided in the South East of England by 2050. This is not relevant to the specific question as to whether there would be sufficient demand for pure freighter movements to be operated to/from Manston in the foreseeable future or by their assessment year 2040.

4. The analysis presented by Azimuth shows a lack of understanding of the economics of the air freight market. This leads to a misinterpretation of our work, upon which Azimuth seek to rely to support RSP's case. Just because there could be excess air freight demand in 2050, compared to the bellyhold capacity available in the absence of further runway capacity at the UK's main hub, it does not follow that displaced bellyhold freight will seek a more expensive pure freighter service from a relatively nearby airport over the use of available bellyhold capacity from a more distant airport which can be provided at a lower cost to the shipper with only a marginal penalty in terms of the overall shipment time.

5. Fundamentally, Manston's past operation was economically inefficient due to the inherent lack of viability. Hence, reopening the Airport, in the face of a very limited niche market, has the potential to damage the productivity of the UK aviation sector overall, particularly, as we have demonstrated in our own assessment of cargo demand for Manston in Section 3 of this report, that there are more economically efficient alternatives available for any freight displaced due to specific capacity constraints at Heathrow both now and in the future.

6. Manston is too peripheral for integrator operations serving the UK. Integrators have a strong preference for locations more centrally located in the UK with good road access to all of the major markets. The availability of land for warehouses, for example as suggested in terms of the use of the 'Northern Grasslands' part of the overall Airport site, is far less important than a location central to the market and the availability of good road access, neither of which are characteristics of Manston. It is simply in the wrong place to serve the market being located at the far south east at the end of a peninsular, away from the main centres of population and distribution in the UK.

7. In the absence of hard market evidence of the need for Manston Airport, Azimuth undertook an interview survey to supplement RSP's case and to inform the forecasts. However, the list of interviewees was small, dominated by mainly local companies with something of a vested interest in seeing Manston re-opened. Even so, if anything, the views of those interviewed by Azimuth suggest that there would, at best, be a limited role for Manston. The one airline interviewed made clear that *"success at Manston depended upon identifying a niche market and becoming known for excellence. In particular, suggestions included a perishables centre, handling of live animals, easy access for charter flights, and handling cargo that is not necessarily straightforward"*. The scale of this opportunity was never quantified by Azimuth. It is clear, however, that the realistic expectation for Manston is for a small niche operation rather than as a general 'overspill' cargo airport for London.

8. The outputs from these interviews are then used by Azimuth as a basis for postulating a number of cargo aircraft movements that might operate at Manston. However, it is not possible to relate the proposed services to be operated with the responses by the interviewees. There is simply no explanation for, or justification for, the services postulated by Azimuth. At the very least, there is a lack of transparency in the approach adopted.

9. In our view, the Azimuth cargo movement forecasts simply lack credibility. To illustrate this lack of credibility of the forecasts, in Year 2 (the first operational year), a cargo throughput of nearly 100,000 tonnes is forecast by Azimuth. This would make Manston the 5th largest freight airport in the UK in its first year after re-opening (compared to 2016 actual throughput at the other airports). This would place it close to the scale of freight operations at Manchester Airport, which includes a substantial amount of bellyhold freight. It would make Manston the 3rd busiest airport in the UK in terms of tonnage carried on dedicated freighter aircraft. This is simply not a credible proposition. This lack of credibility is important in reaching any decision under section 23 of the Planning Act 2008 (as amended).

10. We have updated and further developed our analysis of the UK air freight market from that previously undertaken in 2013 and 2015 for TfL and for the FTA and TfL (RSP seek to rely on our 2013 and 2015 work as corroboration of their own cargo movement forecasts). When properly interpreted, our forecasts of air freight demand and capacity across the UK as a whole, taking the role of bellyhold fully into account, show that, to the extent that there is any need for additional pure freighter movements, there is plenty of freighter capacity at Stansted and East Midlands to accommodate any growth. These airports are better located relative to the market and the key locations for distribution within the UK. Overall, we conclude from this analysis that there will be no shortage of freighter capacity in the UK in the period up 2040 (RSP's assessment end date) and that overspill from other airports would not provide a rationale for re-opening Manston.

11. Taking the most optimistic basis for assessing its potential role, we have estimated that Manston might be able to achieve at most 4,470 annual air transport movements by cargo aircraft by 2040, but this is highly unlikely given its location and the clear market trend away from the use of dedicated freighter aircraft. Our more likely projection is that it might attain 2,000 annual air cargo aircraft movements by 2040 and it is equally plausible that it might not achieve more than 750 such movements annually. These are all far below Azimuth's projection, upon which RSP rely, of 17,171 annual cargo aircraft movements.

12. Our initial assessment of the passenger market is that the throughput might, at best, be around half of that projected by RSP and, hence, given the dependence on passenger related income for the financial viability of airport operations, this will impact substantially on the viability of the proposal. The other activities suggested by RSP, such as business aviation, maintenance, repair and overhaul, and aircraft dismantling are highly competitive markets and, to the extent that Manston might attract any such operations, these are unlikely to contribute substantially to the overall viability of the Airport.

13. The existing infrastructure at Manston Airport, if made good, is capable of handling 21,000 annual air cargo aircraft movements[1]. The actual usage of that capability would depend on the pattern of operation and how the infrastructure was used on a day by day basis. Our assessment, therefore, provides essential missing information from RSP's materials to date which is necessary for the purposes of section 23 of the Planning Act 2008 (as amended), for assessment purposes under the Environmental Impact Assessment Regulations and for consultation purposes.

14. Without prejudice to our view that demand to use Manston is not likely to be anything like 17,171 cargo aircraft movements a year, we have considered the land required to accommodate such a number of movements. Our assessment is that the land required would be substantially less than shown on the RSP Master Plan and that the proposed land take is excessive and without justification in terms of the compulsory acquisition of the land. Any development required to handle 17,171 annual movements by air cargo aircraft can all be accommodated to the south of the B2050 and, even allowing for passenger operations and other activities, would not require all of the airfield land to the south of the road. Obviously, on the basis of more realistic forecasts of future demand, the area required to support the ongoing operation of the Airport would be materially smaller.

15. We can see no justification for the inclusion of the 'Northern Grasslands' area within the DCO on the basis of it being for associated development. There will be little requirement for or likelihood of the relocation of freight forwarding activity from adjacent to the UK's main cargo hub at Heathrow to Manston, as suggested by RSP, and any requirement for such activity specifically to support the proposed level of freight activity at Manston could easily be accommodated on land to the south of the B2050. The development on the 'Northern Grasslands' site appears to be speculative commercial development which, based on the precedent at East Midlands Airport – the UK's principal airport for pure freighter operations – would be expected to be largely for non-aviation related uses.

[1] Based on an 18-hour operational day. Should a night time noise policy be agreed with Thanet District Council pursuant to the existing planning agreement that enabled a longer operational day and/or a number of scheduled night movements, then the capability could, in theory, be higher than 21,000 annual cargo aircraft movements.

16. In terms of the socio-economic implications of the proposed development, Azimuth have shown a lack of understanding of how such impacts should properly be calculated. Leaving aside the use of inappropriate multipliers, the impacts have been assessed at a national scale and should have taken displacement of activity from other airports fully into account, reducing the impacts well below those stated. Furthermore, the assessment should have considered the impact on alternative uses of the site, including SHP's proposed mixed use development and the socio-economic benefits deriving therefrom. We have set out a more realistic and robust assessment, which shows that the local impacts within Kent, even on Azimuth's forecasts, would be substantially less than claimed and it is these lower order effects which would need to be balanced with the environmental and other impacts in assessing the acceptability of the proposed development against the alternatives.

17. Unsurprisingly, the socio-economic impacts associated with the Airport are lower still on the basis of more realistic forecasts of likely usage if it re-opened. The operation is simply of a much smaller scale such that, in Year 2, it would generate only 452 jobs, 17% of Azimuth's estimate of 2,654. By Year 20, the differential is even larger, with the Azimuth estimates reaching over 30,000 jobs compared to our estimate of just over 1,000 jobs. Once again, the evidence presented by Azimuth on behalf of RSP cannot be relied upon. It is infected with the flaws in the traffic forecasting methodology identified previously but also the approach to identifying socio-economic impacts is, in itself, badly flawed. The socio-economic impacts are, as a result, massively overstated. In any event, these benefits would not be realised if the Airport ceases operation again due to it not being commercially viable.

18. As well as the Azimuth reports which form the basis of RSP's case, we have also reviewed a number of other reports on the potential for Manston. In overall terms, we agree with Aviasolutions for Thanet District Council that there is little realistic prospect of the re-opening of Manston Airport being a commercially viable proposition. We have reviewed their original report and the more recent reports and concur with their views on the overall structure of the UK air cargo market, noting that they, unlike Azimuth, have correctly understood the implications of our 2015 work for the FTA. We do not accept Northpoint's rebuttal of the Aviasolutions work. Like Azimuth, Northpoint's work is largely aspirational without any robust evidence or analysis of the market. Northpoint, too, misinterpret our previous work for the FTA and TfL.

19. In overall terms, we do not consider that the case that the re-opening of Manston Airport would constitute a Nationally Significant Infrastructure Project has been robustly made or substantiated. In any event, given that the baseline capability of Manston Airport is at least 21,000 annual cargo air transport movements (see section 4), this means that RSP must, effectively, be seeking to increase the capability of Manston Airport from 21,000 annual air transport movements by cargo aircraft to at least 31,000 such movements each year, a level of activity which has not been consulted on or assessed in RSP's Preliminary Environmental Information Report (PEIR). Indeed, RSP's consultation material does not provide any detail as to what the increase in capability would be as a result of its proposals (i.e. the increase in capability as a result of its proposed alteration to Manston Airport). As a minimum, the increase in capability would be to 31,000 annual air transport movements by cargo aircraft, but in our view their proposals would result in a significantly higher 'new' capability which is not revealed or assessed by RSP.

20. Our overall assessment is that RSP have failed to provide their own evidence of the capability of Manston Airport and the amount by which their proposals would increase that capability by. Rather, the only information that they present is a forecast of future freight demand, which has no credibility as explained in this report. There are, hence, major omissions in RSP's consultation material. This failure means that, in our opinion, the requirements in section 23 of the Planning Act 2008 (as amended) have not been satisfied. In essence, we would have expected RSP to be able to show:

- the capability of Manston Airport of providing air cargo transport services;
- the amount by which RSP is proposing to increase that capability by and thus the "new" capability; and
- a credible forecast for why that 'new' capability is required.

None of this information is provided by RSP.

1 INTRODUCTION

1.1 York Aviation was appointed by Stone Hill Park Limited (SHP) in September 2017 to review the evidence presented by RiverOak Strategic Partners Limited (RSP) in connection with RSP's prospective application for a Development Consent Order (DCO) for the redevelopment and re-opening of Manston Airport as a hub for international air freight services, which also offers passenger, executive travel and aircraft engineering services.

1.2 York Aviation is a specialist air transport consultancy that focusses on airport planning, demand forecasting, strategy, operation and management. The company was established in 2002. We offer a broad range of services to airports, airlines, governments, economic development organisations and other parties with an interest in air transport. Our team is a mixture of experienced air transport professionals and economists. Key members of the team have substantial experience of airport operations and development gained through working for Manchester Airports Group. Our core services include:

- business planning and strategy;
- capacity and facilities planning;
- master planning and planning application support;
- demand forecasting;
- economic impact assessment and economic appraisal;
- policy and regulatory advice;
- route development;
- transaction support.

1.3 Our clients include:

- Transport for London;
- Transport for the North;
- Department for Transport;
- Scottish Enterprise;
- Northern Ireland Government;
- Manchester Airports Group;
- Birmingham Airport;
- London City Airport;
- London Luton Airport;
- Ryanair;
- Freight Transport Association.

As well as numerous investors in airports and other parties with an interest in the development, operation and management of airports in the UK and abroad.

1.4 Louise Congdon, Managing Partner of York Aviation has provided evidence in relation to the need for and economic impact of airport development at several airport public inquiries, including Manchester Runway 2, Liverpool Airport, Doncaster Sheffield Airport, Stansted Generation 1, London Ashford Airport (Lydd) and London City Airport.

1.5 We were the authors of two specific reports upon which RSP seek to rely in making their case, namely a report for the Freight Transport Association (FTA) and Transport for London (TfL) in 2015 and a note on Freight Connectivity for TfL in 2013. The first of these documents was used by RSP in its public consultation and this may have led respondents to believe that we were supporting the re-opening of Manston, which is not true and, as we go onto explain in this report, our analysis in these documents for the FTA and TfL does not support RSP's conclusion that there would be a substantive and sustainable role for Manston in the UK air freight industry.

Historical Position

1.6 Manston Airport closed to commercial operations in May 2014, following several unsuccessful attempts to attain commercially viable operations. In the decade prior to closure, the Airport did manage to attract some cargo and passenger activity but not to levels that could ensure financial and commercial viability for its owners. The historic traffic performance is set out in **Table 1.1**. The Airport's cargo traffic peak was in 2003.

Table 1.1: Historic Commercial Traffic at Manston Airport

	Passengers	Cargo (tonnes)	Air Transport Movements[2] (excl. Air Taxis)	of which, Cargo Aircraft Movements[3]	Total Aircraft Movements
2003	3,256	43,026	1,106	1,081	24,934
2004	101,328	26,626	3,333	730	23,324
2005	204,016	7,612	4,631	177	21,358
2006	9,845	20,841	461	322	16,687
2007	15,556	28,371	608	444	21,521
2008	11,625	25,673	540	412	19,269
2009	5,335	30,038	583	485	18,902
2010	25,692	28,103	1,151	491	16,260
2011	37,169	27,495	1,472	419	18,695
2012	8,262	31,078	687	432	14,688
2013	40,143	29,306	1,640	511	17,504
Source: CAA Airport Statistics					

[2] Air Transport Movements (ATMs) are those services sold to the public as distinct from private flights or those operated on behalf of individual companies using their own aircraft. All substantive cargo operations in the UK would be treated as air transport movements. Aircraft movements are all aircraft movements at an airport, including 'touch and go' landings by flying school aircraft.

[3] Based on more detailed records maintained by the former airport operator, it would appear that CAA data may not record all empty cargo positioning flights. However, we do not have complete data. The total number of cargo flights could, hence, be somewhat greater than shown.

1.7 Table 1.1 shows that the number of air cargo movements and the tonnage carried was fairly consistent over the last 10 years of the Airport's operation, but these operations were not sufficient to support a commercially viable operation at the Airport.

1.8 We address the realistic levels of freight demand that Manston Airport might attract if re-opened in **Section 3** of this report.

The Application

1.9 RSP's prospective DCO application is predicated on its proposed alterations to the Airport's infrastructure, the effect of which is expected to increase by at least 10,000 a year the number of cargo air transport movements (CATMs) a year that the Airport is capable of accommodating. In practice, the case set out in the consultation documents produced by RSP and used in the Preliminary Environmental Information Report (PEIR) are predicated on it being able to attract and handle a forecast of 17,171 CATMs and 1.4 million passengers per annum (mppa) by 2039 and all of the assessments are made on this basis.

1.10 In order for RSP's proposals to be considered a Nationally Significant Infrastructure Project (NSIP), which can be taken forward using the DCO procedure under the Planning Act 2008 (as amended), it must comprise of an alteration to an airport which would *"increase by at least 10 million per year the number of passengers for whom the airport is capable of providing air passenger services"* or *"increase by at least 10,000 a year the number of air transport movements of cargo aircraft for which the airport is capable of providing air cargo transport services."*[4] [5] In this case, the relevant criterion relates to air transport movements for cargo aircraft. It is clear, therefore, that validating the capability of Manston Airport of providing air cargo transport services is vital to determining the legitimacy of a DCO.

1.11 RSP's prospective DCO application does not provide any explanation or understanding of the capability of the Airport before its proposed alteration is made. The capability of the Airport is a necessary component of Section 23(5) of the Planning Act 2008 (as amended), as it is from that figure that a prospective applicant must consider the effect of its proposed alteration, which must be expected to have the effect of an increase of at least 10,000 annual air transport movements by cargo aircraft. Without identifying the capability of Manston Airport, one does not have all of the components required under section 23 of the Planning Act 2008 (as amended) for a decision to be made as to whether the proposed alteration falls within section 23. In addition, an applicant must then explain what the 'new' capability would be following its proposed alteration in order to then assess the effects of the proposed alteration. We consider this further in **Section 4**.

[4] Section 23(5) of the Planning Act 2008 (as amended).

[5] It is noted that the Planning Act 2008 (as amended) also refers to an increase in permitted use as a relevant criterion. In this case, the existing planning consent under which Manston operated contained no limit on the number of annual aircraft movements permitted although there was a prohibition on night movement of aircraft between 23.00 and 07.00 in force, pending agreement to a night movement policy with the local planning authority, Thanet District Council. In any event, the increase would still need to be at least 10,000 per year in the number of air transport movements of cargo aircraft for which the airport is permitted to provide air cargo transport services.

1.12 A further consideration is the extent of development proposed in terms of its capability of supporting the projected number of movements but, more importantly, given that RSP is seeking to compulsory acquire the entirety of the Manston Airport site from SHP, whether the land area proposed is actually necessary in order to handle the projected number of aircraft movements and whether there is a *"compelling case in the public interest"* for its acquisition[6]. This requires consideration as to whether the case for the development and re-opening of Manston Airport is *"compelling"* and whether the full extent of land required has been fully justified. We consider this in Section 4 of this report.

1.13 We consider the socio-economic case for the development in **Section 5** of this report.

This Report

1.14 RSP sets out its strategic case and need for the re-opening of Manston Airport as a hub for international air freight in 4 volumes prepared by Dr. Sally Dixon of Azimuth Associates (Azimuth), namely '*Manston Airport - a Regional and National Asset, Volumes I-IV; an analysis of air freight capacity limitations and constraints in the South East and Manston's ability to address these and provide for future growth; June 2017'.* **Section 2** of this report reviews this analysis and the extent to which the analysis presented by Azimuth justifies the forecast cargo and passenger activity projected for Manston. This is important for the purposes of section 23 of the Planning Act 2008 (as amended) and whether the analysis presented by Azimuth provides a compelling case in the public interest for the acquisition of the site through compulsory acquisition procedures.

1.15 Within this report, we address, in particular, the use made by Azimuth of analysis that we undertook for Transport for London[7] and for the Freight Transport Association[8] in connection with the work of the Airports Commission and the need for new hub airport capacity for London. For reasons which will be made clear, the York Aviation work relied upon by RSP does not, and cannot be taken to, support RSP's proposed alteration to Manston Airport and, therefore, cannot be relied upon by RSP, the Planning Inspectorate, the Secretary of State and any future appointed Examining Authority (should RSP submit the application and the Secretary of State accepts the application). Given the errors in the interpretation and use of our work by Azimuth, we are concerned that the consultation carried out to date has not properly informed the public in respect of the valid interpretation of our work regarding the prospects for the viable operation of Manston as a freight airport.

1.16 We also review independent reports produced variously by Aviasolutions (Avia) for Thanet District Council in September 2016 and August 2017 and Northpoint Aviation Services (Northpoint) for RSP. This peer review of the other reports is at **Section 6** of this report. To the extent that we agree with these other reports, we do not repeat the detailed analysis in this report but reference the corroborating evidence as appropriate.

[6] Department for Communities and Local Government, *Guidance on compulsory purchase process*, October 2015, page 6.

[7] Referenced by Azimuth as Transport for London (TfL), *Note on Freight Connectivity*, unpublished paper 2013. For the avoidance of doubt, this note as made available by TfL under a Freedom of Information Request is appended to this report at **Appendix A**.

[8] York Aviation (2015), *Implications for the Air Freight Sector of Different Airport Capacity Options*.

1.17 Our conclusions are presented in **Section 7**.

2 CRITIQUE OF RSP APPROACH TO FORECASTING

2.1 In this section, we review the work of Azimuth that forms the justification for the DCO and was part of RSP's consultation documents in June and July 2017. The work is presented in 4 volumes:

- Volume I: Demand in the south east of the UK
- Volume II: A qualitative study of potential demand
- Volume III: The forecast
- Volume IV: The economic and social impact of airport operations

This section also addresses the basis of the demand forecasts for Manston as set out in Volumes I, II and III, focussing principally on air freight in this summary report. We address the socio-economic assessment in Volume IV in Section 5 of this report. Given the repetition of much of the material across the first three volumes of Azimuth's work, we have grouped issues broadly under the appropriate volume in this section.

2.2 We do not, in the main, dispute the accuracy of the factual detail, some relevant and some not, set out in the Azimuth reports or the veracity of the secondary evidence presented. We do, however, have serious and considerable issues in relation to the interpretation and the completeness of this evidence base, in particular relating to the use of previous York Aviation reports, and the inferences and conclusions drawn from it. Ultimately, we consider that the case put forward by Azimuth is weak and unsubstantiated as the extensive evidence base presented does not, in reality, support the conclusions drawn which, in many cases, go well beyond what can reasonably and sensibly be inferred from the information presented. Much of the information is effectively circumstantial and falls far short of making a compelling case, or indeed any case, that the demand forecasts would be capable of being realised.

2.3 Although Azimuth state at paragraph 1.2.1 of Volume 1 *"RiverOak, who specialise in identifying profitable market opportunities, has identified the substantial need for additional and specialised airport capacity for dedicated freighters in the southeast of England"*, we are unaware of any other research upon which RSP rely. All other documents produced in support of the prospective DCO appear to rely on the work of Azimuth.

2.4 In essence, the work of Azimuth sets out to address three key questions, which they assert provide the answer as to whether there is a compelling case in the public interest for the development of Manston Airport sufficient to meet the test for the inclusion of compulsory acquisition powers as part of the DCO. These are largely addressed in Volumes I and II, and lead on to the preparation of demand forecasts set out in Volume III. The three tests put forward by Azimuth are:

- *Does the UK require additional airport capacity in order to meet its political, economic, and social aims?*
- *Should this additional capacity be located in the South East of England?*
- *Can Manston Airport, with investment from RiverOak, relieve pressure on the UK network and meet the requirement of a nationally significant infrastructure project?*

2.5 At the outset, we query whether these are the correct questions to be addressed in terms of the case that RSP seek to make for the use of Manston as a major freighter hub. As is clear from the draft Airports National Policy Statement (NPS)[9], the first two questions relate to the requirement for more capacity at the UK's main passenger hub airport at Heathrow. The updated draft NPS makes clear at paragraph 1.30 that, in relation to the Government's preferred solution of a new northwest runway at Heathrow:

"Consideration has been given to alternative solutions to the preferred scheme, and the conclusion has been reached that there are no alternatives that would deliver the objectives of the Airports NPS in relation to increasing airport capacity in the South East and maintaining the UK's hub status."

2.6 Hence, these first two questions are not relevant to considering whether there is a need for dedicated freighter capacity at Manston sufficient to meet the tests for a DCO. Manston would make no contribution to meeting the identified requirement of passenger hub capacity for the UK or for the South East of England. Furthermore, the draft NPS makes clear, at paragraph 1.39 in relation to any other development consent application for airport development, that:

"Nevertheless, the Secretary of State considers that the contents of the Airports NPS will be both important and relevant considerations in the determination of such an application, particularly where it relates to London or the South East of England. Among the considerations that will be important and relevant are the findings in the Airports NPS as to the need for new airport capacity and that the preferred scheme is the most appropriate means of meeting that need."

2.7 This confirms that the proposed northwest runway at Heathrow addresses the identified need as set out by the Airports Commission for new airport capacity in the South East of England and that this provides a context against which any other DCO application would need to be assessed.

Demand in the South East of the UK (Volume I)

2.8 As has been noted above and in the most recent 2017 reports from Avia, much of the analysis presented by Azimuth relates to the evidence for a shortage of airport capacity overall in the South East of England and, specifically, the work of the Airports Commission relating to the need for additional hub airport capacity serving both the needs of passengers and of air freight. Much of the evidence presented by Azimuth to justify the existence of an airport capacity shortfall in the South East of England relates to the shortfall in capacity for passenger aircraft and, specifically, a shortage of capacity at the main aviation hub at Heathrow as noted above. This does not provide any underpinning justification for the specific development that RSP proposes at Manston, which comprises a specialist freight airport with a small number of low fare, regional and charter flights for passengers.

[9] Department for Transport, *Revised Draft Airports National Policy Statement: new runway capacity and infrastructure at airports in the South East of England*, October 2017. Note that the provisions referred to have not changed since the original draft as of February 2017, which pre-dated RSP's consultation.

2.9 Azimuth cite a number of reports which highlight the potential shortage of airport capacity, not just in the UK but across Europe, and the economic costs of not addressing these shortfalls. Azimuth then seek to imply that Manston could provide part of the solution and contribute to delivering these benefits. This is not justified and creates a false impression of the potential economic significance of RSP's proposals. A key point is that the reports relied on by Azimuth need to be seen in the context in which they were written, namely to set out the economic consequences of the failure to address the shortage of hub airport capacity principally for passengers but also providing bellyhold capacity for freight in the UK. All of the reports pre-date the Government's decision to promote an additional runway at Heathrow and were largely directed at ensuring that a positive decision was taken regarding the development of additional runway capacity.

2.10 Furthermore, the reference at paragraph 5.1.4 to concern expressed in the Aviation Policy Framework[10] regarding the implications of capacity shortfalls on the range of destinations served does not, as Azimuth infer, indicate a need for additional aircraft movements by dedicated freighter aircraft as these would require a concentration of freight flows to a specific destinations to fill a single aircraft at a time. Rather, the Aviation Policy Framework refers to the need for a wide range of global destinations being available at the UK's national hub airport, offering passenger and bellyhold capacity so as to maximise the choice and convenience for both passengers and shippers[11] of airfreight. It is this variety of destinations and, importantly, the high frequencies of service that lead the market to favour a bellyhold hub and spoke system so that freight can reach its end destination in the most efficient and cost effective way possible.

2.11 In the light of the Government's support for the provision of a third runway at Heathrow and the potential for further development of airport capacity beyond 2030[12], the use of these economic assessments of a constrained situation to 2050 is no longer relevant, if indeed it ever was, as a context for the potential re-opening of Manston as a freight airport. The use of this data by Azimuth to support RSP's proposals is disingenuous at the very least.

Reliance on York Aviation work

2.12 Ultimately, Azimuth rely heavily on two existing pieces of research undertaken by York Aviation during the Airports Commission process. The first an unpublished note for Transport for London (TfL) prepared in the early stages of that process (see Appendix A), and a later more detailed piece of research undertaken for the Freight Transport Association (FTA), in conjunction with TfL[13]. Both documents considered the overall position of the air freight market in the London system and what might be the circumstances of that market in 2050 under different assumptions regarding runway capacity development in the South East. Whilst we continue to believe that, in the very long term, there will be excess demand for air freight and that existing infrastructure in the London area will struggle to service this demand, more recent developments lessen the capacity pressure.

[10] Department for Transport, *Aviation Policy Framework*, 2013.
[11] Shippers are the originators of the airfreight, i.e. the exporters or importers.
[12] Department for Transport, *Beyond the Horizon The future of UK Aviation*, Call for Evidence, July 2017, paragraph 7.23.
[13] The FTA report being included explicitly in RSP's consultation documents on its website.

2.13 The key point, however, is that, to the extent that there is excess air freight demand in the long term, it does not follow that there will be a market for Manston, as asserted by Azimuth, as any excess demand at the Heathrow hub does not lend itself to being displaced onto dedicated freighter operations at Manston, for reasons we explain later in this section. To the extent that there is any role for additional freighter aircraft to accommodate some part of the displaced demand, there is ample spare capacity at other airports in the short to medium term at least. Thus, the York Aviation work relied upon by RSP does not, and cannot be taken to, support the need for a re-opened Manston Airport as a freight airport and cannot be so relied upon by RSP, the Secretary of State, the Planning Inspectorate and any appointed Examining Authority (should RSP submit its application and the Secretary of State accepts the application).

2.14 Specifically, Azimuth seek to rely on estimates presented in our reports of the number of freighter movements which might be required to carry the freight tonnage that could be displaced from the London airports in 2050 if there is no additional capacity provided by that date. It is important to note that our reports for TfL and the FTA went on to explain why there were other alternatives, such as regional airports or trucking to Europe, which would be favoured to meet demand ahead of any residual use of more dedicated freighters.

2.15 Despite the reports being very clear, when read in their entirety, that the solution to any shortage of capacity would not be extensive use of pure freighter aircraft, Azimuth rely on the freighter movement equivalents from our reports as justification for their projections of freighter movements at Manston both in the short to medium term and up to 2039. There are a number of problems with this approach:

- The analysis as at 2050 is not representative of the position at 2039 or any earlier date;
- The Government is committed to there being a third runway at Heathrow, with a major justification being the increase in bellyhold freight capability at the UK's principal freight hub;
- Gatwick has increased its effective hourly movement capacity, enabling more passenger aircraft and associated bellyhold capacity, particularly related to recent expansion of the long haul network;
- Stansted has 20,500 annual movements that are reserved for freighter aircraft, of which only around half are currently used. The Airport's Sustainable Development Plan[14] sets out an aspiration to grow cargo, including on dedicated freighter aircraft, to 400,000 tonnes annually;
- Regional airports have developed additional long haul services, providing additional bellyhold capacity, and have plenty of spare capacity to accommodate additional freighter aircraft movements to the extent that there is any need for more pure freighter capacity;
- The Government has not ruled out the provision of further additional airport capacity beyond 2030.

2.16 Fundamentally, the use of theoretical levels of excess air freight demand at 2050 cannot be used to underpin short to medium term forecasts for the expected usage at Manston or an assessment as to whether it could be viably developed in the meantime, regardless of the precise timing of the delivery of the third runway at Heathrow.

[14] Stansted Airport Ltd, *Sustainable Development Plan 2015*, Summary.

Transport for London

2.17 At the outset, it is important to note that our 2013 paper for TfL (referenced by Azimuth as an unpublished TfL note[15]) points out the UK did not then appear to be disadvantaged in terms of air freight capacity and that there was still substantial capacity for freighter movements remaining at Stansted. This is an important consideration in terms of short term forecasting and should have informed Azimuth's thinking.

2.18 In this paper for TfL, we estimated the excess air freight that could not be accommodated in bellyhold capacity on passenger aircraft under different scenarios of additional capacity at the London airports and converted that excess to an equivalent number of freighter movements. The 54,000 potential additional freighter movements that Azimuth (and Northpoint) cite at paragraph 3.4.5 are the additional freight carrying capacity required in the event of there being no further runway capacity at any of the London airports[16] (a severely constrained scenario) that is simply no longer realistic as we have set out above. Azimuth's (and Northpoint's) use of this figure as a potential market for Manston is misleading.

2.19 The note then goes on to set out how this requirement for additional freight capacity might be met and the economic consequences. In the first instance, we noted that around 14,000 additional freighter movements could be accommodated in the London system if no capacity expansion takes place, and this included the use of additional available freighter slots at Stansted. Azimuth appear to have taken our inclusion of Manston, as an example of a smaller airport in the South East that could accommodate some movements, as an indication that it could play a substantial role, wrongly stating in the Executive Summary and at paragraph 3.4.5 that we said that Manston was expected to handle 14,000 freighter movements. Manston was given simply as an example of an airport with freighter activity at the time of writing (2013) with the potential to accommodate some additional movements (as we set out in Section 4 of this report, the capability of Manston Airport is 21,000 annual cargo aircraft movements before allowing for any night operations).

2.20 In essence, our assumption was that, across the London airports (including Manston albeit on the periphery of the South East of England), it was plausible that, by 2050, double the number of existing freighter movements could be accommodated compared to 2012. If anything, the correct inference to draw from this is that we expected the number of freighter movements to double from 2012 levels, i.e. to around 1,000 movements a year at Manston.

2.21 Beyond this, the question of how excess freight demand in the London system in the future will be served is largely left open in our 2013 note but we made clear, at paragraph 26, that we believed the two most likely options would be greater use of bellyhold capacity and freighter operations at UK regional airports, noting Birmingham, East Midlands and Manchester particularly, or the trucking of freight to major European hub airports with substantial route networks and bellyhold capacity. This reflects the growing role of regional airports in serving their local freight markets (avoiding the need to truck to London), while balancing particularly the attractiveness of the substantial bellyhold capacity, lower air freight rates, and flexibility offered by the major continental hubs. We discuss this further below in relation to the economics of the air freight sector.

[15] See Appendix A.
[16] Based on the Airports Commission capacity assumptions.

2.22 Our TfL note also makes clear (paragraph 25) that, to the extent that there was a capacity constraint, the first consequence might well be less capacity for transit freight through the UK airports, prioritising freight to and from the UK. Ultimately, our TfL note concludes that:

"In the constrained, max use, case, there would be severe limitations of pure freighter movements at the London airports, which could amount to around 26% of the required air freight capacity to/from London. The extent to which this would act as a limitation on overall air freight volumes would depend on the extent to which the freight is still carried from regional airports or by truck. Clearly this would impact on the cost/efficiency of shipment, which in turn could impact on freight volumes carried. Again, it is outside the scope of the current exercise to assess these effects.

Overall, in assessing the economic value for air freight between the scenarios, the main difference is likely to lie in producer costs passed through to users and the impact that would have on business costs and hence output/freight generated. It would not be safe to assume that the reduction in cargo ATMs at the London airports necessarily translates to lost shipment value in its entirety."

2.23 Azimuth, at paragraph 3.3.2, incorrectly characterises our note to TfL as expressing a concern about the amount of trucking to Europe. Significantly, the last part of paragraph 9 is omitted by Azimuth. When looked at in its entirety, it is evident that we were noting that trucking is an inevitable part of the market, for reasons which we explain later in this section:

"However, the role of the low countries and Germany in acting as the major freight centre in western Europe is noticeable. In total, the main German freight airports handled almost 4.2 million tonnes of freight in 2012 which, when combined with the Netherlands and Benelux countries, amounted to 7.2 million tonnes of air freight flown. These airports have developed major and specialist air freight roles, with freight being trucked from all over Europe to feed these freight hubs. The integration of trucking with air freight should not be overlooked, even within the UK. In practice, it is unlikely that the UK could replicate this role, even with unconstrained airport capacity, due to its island location on the western edge of Europe."[17]

2.24 In other words, our assessment was that there would not, in effect, be a shortage of capacity for freight, albeit that there would be some loss of producer efficiency by way of increased trucking and time related costs, which would be small in the context of the overall cost of air freight transport. Our summary conclusion in this note makes this clear:

"The key difference between these two scenarios would be in terms of the efficiencies and economies of scale gained by the industry arising from the concentration of freight activity at a single hub. In both cases, the overall volume of air freight to and from the UK is expected to be broadly the same, although the actual freight carried including transit freight would be higher in the hub case. However, under the new hub scenario, savings from greater efficiency may be passed onto users, so reducing shipping costs and facilitating trade leading to higher freight volumes, but it is beyond the scope of the current exercise to assess this. "[18]

[17] See Reference 6, paragraph 9.
[18] Ibid, paragraph 30.

2.25 We were cautioning against the assumption that there would be a requirement for more capacity for dedicated freighter aircraft in a constrained scenario as there would be other more cost effective routes by which the freight would be carried, albeit at a higher cost than with the availability of more bellyhold capacity under a 4-runway hub scenario as being advocated by TfL at the time. Use of more dedicated freighter aircraft would represent a further increase in cost for shippers as we explain further later in this section.

Freight Transport Association

2.26 Our work for the FTA and TfL in 2015[19] again identified the potential for excess demand for air freight in the London system by 2050 and converted this number to freighter movements to demonstrate the point that a four runway hub could house this excess demand in one place. If this demand could not be served in the London system, the report makes clear our belief that it would then be trucked to alternate airports that offer significant options in terms of bellyhold freight or freighter operations. In this context, the bellyhold capacity and destinations offered by the continental hubs are a decisive factor in determining how the market will be served due to the range of destinations served and the lower costs inherent in using bellyhold freight. These continental airports act as freight consolidation hubs for the whole of Europe given their more central locations and, hence, offer consolidation advantages and more competitive freight rates.

2.27 Azimuth's interpretation of our work for FTA appears to erroneously assume that excess demand in the London system will need to be met by additional freighter movements from an airport in the vicinity of London. For instance, at para 4.2.3, they state that *"Even so and as York Aviation figures show, there will be a shortfall of slots for dedicated freighters, likely to be in the region of 45,000 by 2050"*. Whilst our report does estimate that the excess air freight demand with a third runway at Heathrow would be around 1.2 million tonnes by 2050, equivalent to 45,000 additional freighter movements, at no point does our report say that this is how the market could or should be served. Indeed, as we state on Page 20 of our FTA report *"we have assumed that freighter aircraft primarily act as a means to supplement bellyhold capacity where insufficient bellyhold capacity is available"* and our later analysis of how the market might react to this excess tonnage focusses on this assumption by considering the attractiveness of alternative airports in terms of both passenger and freight services on offer. We continue to be of the view that bellyhold capacity elsewhere will be the primary alternate given the price advantages, the flexibility offered by the long haul networks of major airports, including those on Continental Europe, and the low cost of trucking as our report for FTA makes clear.

2.28 By the time of this report for FTA, Manston had closed but, even if it had not and had been included within our modelling work, the lack of bellyhold capacity and limited overall market presence would have meant it could only be projected to capture a very small percentage of the excess demand. For instance, East Midlands, an airport with around 10 times the freight throughput of Manston, and only 1 hour further away from London than Manston (and substantially closer than Manston to many of the major regional markets and manufacturing centres) captured only 8% of the excess demand in our 2015 modelling. In the Heathrow 3rd runway scenario, this equates to around 100,000 tonnes in 2050. This would equate to around 3,600 additional freighter movements in 2050.

[19] See paragraph 1.14 above.

The Economics of the Air Freight Industry

2.29 Throughout the analysis, Azimuth appear to assume complete interchangeability between bellyhold freight, pure freighter operations and express/integrator operations without any analysis of the economic drivers for the use of each type of freight transport and the economics of trucking of air freight between the UK and Europe. This is a fundamentally unrealistic assumption and leads to a misrepresentation of the market opportunity for pure freighters.

2.30 In our work on international connectivity for Transport for the North (TfN) in 2016 (in conjunction with MDS Transmodal[20]), we identified the key characteristics of the air freight market. We identified that air freight can, in principle, be broken down into three main sectors:

(i) bellyhold, where cargo is carried principally in wide-body long-haul passenger jets[21]. Shippers are able to take advantage of flights to a wide variety of destinations from the main hub airports such as Heathrow and from other major European hubs, e.g. Frankfurt and Paris, similarly offering a wide range of global destinations on passenger flights;

(ii) freight only services, which are viable on only a handful of routes and/or for specialist commodities on an ad hoc basis. This is an increasingly limited sector in the UK due to the variety of bellyhold routes available and the strong presence of the integrators in the market;

(iii) express 'parcel' type services that operate on a hub and spoke network basis by 'integrators' (typically DHL, Fedex and UPS). These services increasingly carry larger consignments and East Midlands and Stansted Airports dominate the UK market, feeding bigger hubs located more centrally within Europe.

2.31 In general, air freight is seeking door to door journey times of the order of 4-5 days, which is possible using bellyhold through major hub airports, whilst integrator freight will generally seek a door to door journey time of no greater than 2 days.

2.32 The majority of tonnage moves by bellyhold as, in essence, this capacity is sold at marginal cost, with the majority of the airlines' operating costs covered by the passengers carried. The market is dominated by Heathrow and the other major European passenger hub airports because the sheer range and frequency of services provides a competitive environment which typically delivers the lowest freight rates and the greatest range of destinations served. There is high locational inertia in the air freight sector, which is likely to remain focussed around Heathrow for the foreseeable future as it is expected to remain by far the largest UK airport for cargo. In our TfN work, we estimated that around 70% of freight from the North of England in 2015 was trucked to or from other hubs for uploading, with some freight trucked to Heathrow for consolidation by the freight forwarders before being trucked back to Manchester to avail of bellyhold capacity there. Assuming similar proportions from other regions of the UK, it is clear that at least a part of any excess demand at the London airports is likely to be satisfied at regional airports, not least as airports such as Manchester, Birmingham and Edinburgh increase their range of direct long haul services offering bellyhold capacity.

[20] Transport for the North, *International Connectivity Evidence Report*, York Aviation/MDS Transmodal July 2016, Appendix C.

[21] Short haul flights provide small amounts of bellyhold capacity but, generally, low fares airlines do not carry cargo within their operating model.

2.33 The integrator sector carries more urgent parcel traffic based upon hub and spoke networks offering (typically) two day intercontinental transits. Spoke services from the UK from East Midlands and Stansted serve central European hubs at airports such as Brussels and Frankfurt. The need for frequency tends to mean that, typically, only one 'spoke' can be justified per integrator per country and these spoke services tend to be centrally located to maximise accessibility from all parts of Great Britain. East Midlands Airport is ideally placed in this regard. The integrators are increasingly using bellyhold capacity as well, essentially acting as freight forwarders in this regard.

2.34 A handful of freight only services complement bellyhold and integrator services where there is sufficient cargo to justify dedicated aircraft to a particular destination. There are a small number of scheduled freighter services which circumnavigate the globe, picking up and dropping off cargo at each point. More often, dedicated freighter services, other than those linking with major cargo hubs such as Hong Kong, Seoul or Dubai, operate on an ad hoc basis dealing with special consignments, such as large loads, or specific commodities where time is of the essence, such as the perishables trade, which was previously the principal cargo usage at Manston. Whilst there is some cascade from bellyhold to pure freighter operations where capacity is not available or time is critical, ultimately, it is the economics of the operation which is key. It does not follow that displaced bellyhold freight will seek a more expensive pure freighter service from a nearby airport over the use of available bellyhold capacity from a more distant airport.

2.35 In particular, we identified that the high cost of air freight leads to a pressure to be cost effective and the role of freight forwarders[22] in consolidating loads in order to secure the lowest possible freight rates. Cargo, other than integrator operations, tends to be assembled by specialist air freight forwarders, which cluster around the major hub airports so as to avail of the competitive freight rates on offer. As the road transport costs are very low compared to the value of the cargo and the air freight costs, air cargo is often trucked long distances to find capacity (at a lower freight rate). This forms an important driver in how freight moves from its origin to the actual airport of uploading and applies both within the UK and between the UK and Europe.

2.36 The charges levied per tonne of cargo for the long haul flight leg are high relative to inland haulage costs so that a relatively small difference in air freight rates between different airports will easily cover any additional costs for road haulage. It is for this reason that the majority of air freight will always gravitate towards bellyhold where there is capacity available, even if there is a substantial road haul as part of the journey. Given the wide range of bellyhold services available from the UK, which will increase following the development of a third runway at Heathrow and long haul service growth elsewhere, it is reasonable to expect that pure freighter operations will continue to make up a declining share of the market.

[22] A freight forwarder, forwarder, or forwarding agent is a person or company that organizes shipments for individuals or corporations to get goods from the manufacturer or producer to a market, customer or final point of distribution. For example, the freight forwarder may arrange to have cargo moved from a plant to an airport by truck, flown to the destination city, then moved from the airport to a customer's building by another truck.

2.37 Trucking of air freight is not a new phenomenon. The work by Steer Davies Gleave for the Department for Transport (DfT) in 2010[23] estimated that over 50% of air freight leaving the UK for Europe was trucked rather than using the bellyhold of passenger aircraft. In other words, airlines are using trucks rather than aircraft to distribute freight arriving on and connecting to their global passenger (bellyhold) and freighter operations. At the time of this analysis, Manston was still operational. If it was more economical to use a pure freighter service from Manston rather than trucking over the Channel, this would have been happening in 2010 but it was not. Other than the potential additional border checks as a consequence of Brexit, Azimuth advance no reasons why freight would switch from the cheaper trucking/bellyhold model to expensive pure freighter operations. We believe that the economics of air freight will continue to favour the use of bellyhold freight, other than for a minority of consignments, to and from the UK even if there is a lengthy trucking leg.

Manston in the context of the drivers of air freight

2.38 At Para 4.0.2, Azimuth suggest the reasons why cargo airlines choose airports. In reality, Manston does not fulfil a number of these key criteria meaning that, even in the most favourable circumstances, it can never be more than a niche player in the market. Specifically:

- It does not provide convenient access to the main markets;
- The drive time to Central London is nearly two hours[24];
- The great majority of the Airport's natural catchment is sea and there is very limited evidence of any local demand base;
- Competition is strong from the London airports, with already established freight forwarding and a wide range of bellyhold capacity;
- Given that the Airport is closed and staff dispersed, Manston would not provide any advantages in terms of experience of cargo handling and is likely to offer only marginal advantages in terms of the speed of transit through the Airport;
- Manston could potentially offer lower airport costs, albeit this would impact on the viability of the Airport, but these lower airport costs and any reduction in flying time would not offset the additional cost of freighter transport compared to bellyhold;
- It is also unclear as to what extent night time operations will be an option at Manston given the operating constraints under which the Airport formerly operated which prohibited scheduled night flying[25].

[23] Steer Davies Gleave, *Air Freight: Economic and Environmental Drivers and Impacts*, March 2010

[24] Based on Google maps standard driving speeds.

[25] Azimuth Vol 1 paragraph 7.1.6 quotes from a 2005 MORI survey that people were not impacted by night flights but this would reflect that there were no scheduled night flights when the airport was operational. Local resident support for re-opening (paragraph 7.1.1) needs to be seen in this context. We note that RSP's Consultation Overview Report states (on page 11) that *"Air freight operations would be predominantly during the daytime, in accordance with operations at other similar air freight airports. There may be a requirement for a small number of night-time flights, the details of which will be determined as part of the on-going project design, taking account of feedback from the Statutory Consultation, and presented with the DCO and assessed within the Environmental Statement. For the purpose of the PEIR assessment, and as a worst case, the working assumption is that there might be a maximum of eight (8) aircraft movements at night between the hours of 2300 and 0600."*

2.39 A key consideration is Manston's geographic position substantially away from the economic spine of the UK and with very limited local demand. It is remote from most markets with a journey time to the M25 of nearly 1 hour and accessibility beyond would be subject to the general levels of traffic congestion in the London area. Azimuths's suggestion (paragraph 1.2.2) that Manston might effectively serve as a 4th runway for Heathrow for air cargo flights is merely fanciful given the journey time of 1¾ hours, which is little shorter than the time from Heathrow to East Midlands Airport with an already well developed infrastructure for handling air freight and more likely to fulfil such a role in relation to freight overspill from Heathrow that is time critical or of such a special nature as to warrant the use of pure freighter aircraft.

2.40 Many of the other points raised by Azimuth regarding security, e-commerce and just-in-time delivery are all factors relating to the overall efficiency of the industry. If anything, what the analysis presented by Azimuth demonstrates is the importance of developing efficient freight networks serving the whole of the UK rather than the need for a re-opened freight focussed airport in the South East of England. Manston could only recapture economic benefits from cargo being trucked to the continent, as asserted at paragraph 4.8.4, to the extent that it provides a more economically efficient solution. Manston was not viable in the past and there do not appear to be significant changed circumstances that would make it viable in the future. This lack of inherent viability is indicative of the fact that it did not provide an economically efficient solution.

2.41 One of the key reasons that the UK aviation sector is so productive, as cited by Azimuth at paragraph 5.2.1, is that it allows the market to work. Inefficient and unnecessary actors in the market are allowed to fail. There is a strong argument to suggest that the closure of Manston is simply a part of the process of the market working and delivering more efficient solutions. The argument around the importance of the sector and Manston's role only applies if it is commercially viable (and makes an adequate return to shareholders) and represents an economically efficient allocation of resources. Otherwise, it will in fact damage the productivity of the UK aviation sector.

2.42 Azimuth asserts, paragraph 6.2.2, that the perceived lack of investment in Manston by the previous owners was an impediment to freight growth. However, this is at odds with previous statements by former operators of the Airport and comments by interviewees, in Azimuth's Volume I, on the quality of service received by customers at Manston. In its 2002 results, the Wiggins Group plc claimed that, following investment, Manston was capable of handling 200,000 tonnes of cargo a year[26]. The subsequent owners, Infratil, published a Master Plan in 2009[27] which identified triggers when there might need to be some increase in cargo aprons or warehousing at 100,000 tonnes and 200,000 tonnes of cargo annually. Given that peak tonnage was 43,000 tonnes, this does not suggest that lack of capacity or shortage of investment was an impediment to increasing cargo volumes at Manston in the past, rather the limitation was the market.

[26] https://www.investegate.co.uk/wiggins-group-plc---230-/rns/final-results/2002073007004526862/
[27] Manston, *Kent International Airport Master Plan*, November 2009, page 62.

2.43 The only specific impediment to increasing throughput cited by Azimuth is a limitation to 1 aircraft being handled at a time but we understand that this was not the case, albeit supervised taxi-ing procedures had to be put in place when there were 2 aircraft using the apron at the same time. In practice, it does not appear that lack of investment was an issue which impacted on freight throughput. Rather, it must be assumed that the previous owners did not believe there was a viable economic case for investment. Lack of investment does not necessarily mean constrained demand and it may simply be that there was not sufficient demand to justify investment and that the market was functioning properly.

Qualitative assessment of demand (Volume II)

Forecasting Methodology

2.44 Volume II of Azimuth's work begins with an assessment of different forecasting approaches for cargo, noting that forecasting of cargo is not as well developed as that for passenger activity. We agree that air freight forecasting is difficult and that there is a lack of hard data. However, we do not agree with Azimuth's assertion that quantitative methods are, therefore, not suitable and that qualitative methods are more appropriate. The evidence cited by Azimuth at Table 3 does not support this conclusion and suggests that causal methods (regression analysis) remain the most appropriate for forecasting demand for cargo and freighters. Such an approach is far more akin to the type of analysis undertaken by York Aviation in its work for TfL and FTA and upon which Azimuth seek to rely as a basis for the scale of activity that Manston might attract.

2.45 Whilst we understand the reason for Azimuth's assertion that it <u>may</u> not be appropriate to extrapolate Manston's future performance from its historic performance, this does not take away from the importance of grounding any future forecast in quantitative evidence of the drivers of the market and how these might change in the future. In any event, the assertion is at odds with the reliance placed by Azimuth on our quantitative assessments of 'spill' from the London airports at 2050, in the circumstances of no additional runway at Heathrow, as corroboration of their qualitative projections for Manston to 2039. To reiterate, reliance on these estimates is not appropriate for considering the potential role for Manston, not least as they relate to 2050 and cannot be applied to 2039, or any earlier year, without working through from first principles how any constraints in the London system might bite and the likely market reaction.

2.46 As well as reviewing forecasting methodologies, Azimuth sets out some air freight growth forecasts produced by others. At paragraph 3.6.1, Azimuth cite the DfT's assumption for growth in freighter movements in its 2013 UK Aviation Forecasts at 0.4% p.a[28]. The DfT makes clear that the growth in freighter flights is seen as a residual, representing the share of freight on pure freighter flights after allowance is made for bellyhold cargo being the primary mode. It is clear that the DfT is expecting the share of the market using pure freighters to and from the UK to continue to decline. Indeed, the most recent UK Aviation Forecasts published by the DfT[29] suggest that there is expected to be no growth in the number of pure freighter movements to and from the UK above 2016 levels in the period to 2050. Hence, any increase in freight movements at Manston would have to come at the expense of other airports. We discuss the ability of other airports to handle such movements in Section 3.

2.47 Given the existence of a definitive 'official' UK forecast for freighter movements over the period to 2050, it is not clear why Azimuth rely on global forecasts for air freight produced by the manufacturers Boeing and Airbus for the purpose of selling aircraft (paragraph 2.1.10) as a basis for the longer term projections of freighter movements at Manston in their Volume III (paragraph 2.3.2). The global growth rates cited by Azimuth are inappropriate for projecting growth in freighter movements at Manston for several reasons:

- They relate to RTKs (Revenue tonne kilometres) (Boeing[30]) and FTKs (Freight tonne kilometres) (Airbus[31]) and will reflect increased tonnage per aircraft, including freight carried in the bellyholds of passenger aircraft, and longer sector lengths as well as any growth in aircraft movements;
- The projections relate to growth in air cargo at the global level and lower growth is clearly shown as expected to/from and between more advanced economies such as the UK;
- In the case of Airbus, specific lower growth rates are cited for growth in freight tonne kilometres in freighter aircraft (2.6% p.a. compared to 3.8% per annum in their latest forecasts which are lower in any event than the previous forecasts used by Azimuth). Even then, this growth rate relates to FTKs not to freighter movements.

2.48 Taken together, these reports point to a declining market share for freighter aircraft in mature markets such as the UK, where there is a good supply of bellyhold capacity. It is, hence, not reasonable to use the Boeing and Airbus growth rates as a basis for projecting future growth in movements by pure freighter aircraft to and from the UK, particularly given the existence of DfT projections for such movements. Rather than being conservative, as suggested at paragraph 2.3.2 in Volume III, the use of a 4% per annum growth rate for years 10 to 20 at Manston is highly optimistic, and is certainly not supported by the DfT's analysis of the UK market.

[28] Department for Transport, *UK Aviation Forecasts 2013,* paragraph 3.49.
[29] Department for Transport, *UK Aviation Forecasts*, October 2017, paragraph 2.56. The decline in pure freight movements since 2001 is illustrated in Figure 4.5.
[30] Boeing, *World Air Cargo Forecast 2016-2017*, page 2.
[31] Airbus, *Growing Horizons – Global Market Outlook 2017/2036*, page 101. Note that the 2016 version to which Azimuth refer is no longer available on the Airbus website.

Interviews

2.49 Having rejected the recognised methodologies for forecasting freight demand at an airport, Azimuth rely on interviews with 24 individuals and/or organisations as set out in Table 4 of their report. To a large extent, these are people with past connections with Manston and who may not have a totally unbiased view on the desirability of it re-opening. It is notable that few cargo airlines or large scale air freight operators were interviewed, rather the list is dominated by local interested parties and logistics firms, not all of which are still in business. In some cases, throughout the remainder of Volume II, individuals are referred to who are not listed in Table 4 and, in other cases, individuals or organisations are referred to in different terms to those listed in the table. This does not suggest a very robust or rigorous approach to setting out the potential for Manston. Although the framework of questions is set out at paragraph 4.3.1, we are unable to identify any questions that would enable an assessment to be made of future passenger or freight volumes that would be likely to use Manston and which could be used as the basis for any forecast of future usage.

2.50 In the light of this, the remainder of Volume II is largely a qualitative description of current problems experienced in transporting cargo in general in the UK and in terms of past operations at Manston. These do not, however, provide any insight into the potential scale of demand for freight or passenger services at Manston. Essentially, it constitutes a speculative description of where there might be opportunities if Manston re-opens. We highlight the speculative nature of some of these comments relating to freight activity below. Taking Azimuth's categories in turn:

Process and Issues associated with airfreight

2.51 This analysis is generic and of no direct relevance to the potential for Manston. In particular, no linkage is drawn between the commodities which typically use air freight set out at paragraph 5.1.2 and the economic sectors active in Kent. Significantly, at paragraph 5.1.5, Azimuth cite a respondent that made clear that *"tendered"* prices determine how air freight moves. This is a powerful reason why bellyhold will in most instances win over pure freighter operations. Issues of price for pure freighter operations are reinforced at paragraph 5.1.10, particularly in relation to the risks associated with higher fuel prices.

2.52 There are then a number of comments regarding the current difficulties of operating at Heathrow at paragraph 5.1.6ff. It is recognised that there are few realistic slots available for additional freighter operations at Heathrow so unsurprisingly Coyne Airways cite a difficulty for them if they sought to fly to Heathrow on an ad hoc basis. However, in reality, this airline is not a major player in the UK or Europe, operating a small number of weekly flights from Amsterdam to feed its network of flights within the Caspian Sea region[32]. Comments from ACC Shipping and Active Transport need to be read in the context that they are local Kent shippers and transporters of cargo that have a vested interest in seeing Manston re-opened.

[32] http://www.coyneair.com/caspian_schedule.htm

Future trends in airfreight

2.53 To some extent, the issues highlighted here regarding security relate to the specific issues around Calais at the time when the interviews were carried out but the situation has now changed since October 2016. It is recognised that security of air freight is an increasing concern globally but this would apply at Manston as well as elsewhere.

2.54 Again, paragraph 5.1.15 highlights the dominance of bellyhold freight. Whilst noting that the A380 aircraft has more limited space for bellyhold cargo than B747s at paragraph 5.1.14, Azimuth neglect to point out that other new aircraft, such as B787 and A350 aircraft, do not suffer from similar reductions in space and capacity and continue to offer substantial bellyhold opportunities and capacity.

Motivation to use Manston

2.55 The response cited at paragraph 5.1.19 makes clear that the most important factor in considering freighter operations is *"cost, speed and access to road networks"*, which is not a condition which Manston can meet for the majority of the UK. The local transport firms (paragraph 5.1.21) clearly saw an advantage for them in Manston re-opening but it is far less clear that this was reflected by the broader industry. Significantly, paragraph 5.1.20 does not address the operational reasons why major freight forwarders seek to locate close to Heathrow, Stansted or East Midlands, except possibly for their city centre sales offices.

2.56 The response quoted at paragraph 5.1.23 makes clear that for Manston to be an attractive option to freighter operations, it would need to offer night operations. In the light of the past ban on scheduled night flying, this would be a major change to operating mode, with consequential environmental impacts. Furthermore, RSP's position in relation to whether scheduled night flights will be allowed or not is ambiguous (see paragraph 2.37 above) and we understand that some supporters of the re-opening have said that such operations would not be allowed. In the event that night flights are not allowed or heavily restricted, this would further diminish the attractiveness of Manston for pure freighter operations (comparisons with the major European freight hub at Frankfurt as included by Azimuth are simply not realistic).

Demand model and data for Manston Airport

2.57 This section does not, in fact, contain any data for Manston nor set out a view on how future demand might be modelled.

Freight focussed findings

2.58 The one airline interviewed made clear (paragraph 5.2.3) that *"success at Manston depended upon identifying a niche market and becoming known for excellence. In particular, suggestions included a perishables centre, handling of live animals, easy access for charter flights, and handling cargo that is not necessarily straightforward"*. We would have expected the remainder of the report to concentrate on quantifying the size of this niche market, including any Brexit implications for exports (paragraph 5.2.1). It is clear, however, that the realistic expectation for Manston is for a small niche operation rather than as a general 'overspill' airport for London.

2.59 The spurious suggestion that freight might be *"banned"* from Heathrow (paragraph 5.2.6) and Manston might benefit is clearly nonsense in the context of the Government's support for a third runway to provide capacity for freight in the bellyholds of passenger aircraft as much as for passengers.

2.60 Whilst the suggestion from Coyne Airways about the potential for Manston to offer fuel cost savings when flying south from the UK (paragraph 5.2.11) is interesting, it appears not to take any account of the locations where freight is generated in the UK or where it is consolidated into viable loads. It does not seem likely that Coyne Airways would itself relocate its one European feeder service from Amsterdam to Manston given this would increase rather than decrease fuel burn. As noted earlier, the real reason freight is trucked across the channel is to avail of cheaper freight rates available at the main European hub airports, which act as focal points for cargo for the whole of Europe.

2.61 Azimuth also claim that the bellyhold model is broken and that there is about to be a shift back to pure freighter operations at paragraph 5.2.25 but this is pure speculation and at odds with other industry commentators (see Airbus freighter forecasts which project an increasing share of bellyhold globally[33]) and the UK Government's view as expressed by the Department for Transport.

2.62 Whilst paragraph 5.2.24 says there was underinvestment in facilities by the previous owners, the quotation from Finlays at paragraph 5.2.26 makes clear that Manston previously offered a good level of service. Hence, there is little evidence to suggest that underinvestment was any impediment to Manston attaining its natural share of the market in the past. Although Finlays have now relocated their operation back to Stansted, we would accept that they might choose to return to Manston with a similar number of movements as previously if the facilities were re-instated and provided the cost of operating was competitive compared to Stansted. There may also be scope for some humanitarian and military flights (paragraph 5.2.48) but these will be small in number and not the basis for a viable operation of the Airport.

2.63 At paragraph 5.2.45, Fedex's criteria for an airport to be attractive to an integrator are set out and these seems to describe the characteristics of their main UK base at Stansted. There is then a discussion about some of the problems DHL perceive at Heathrow but, of course, DHL's principal UK operation is focussed at East Midlands where they have an extensive operation. From our work with the integrators and with the Freight Transport Association, we know that Manston is too peripheral for integrator operations serving the UK. Integrators have a strong preference for locations more centrally located in the UK with good road access to all of the major markets. The availability of land for warehouses (paragraph 6.2.6) is far less important than a location central to the market and the availability of good road access, neither of which are characteristics of Manston. This would apply equally to the suggestion that Amazon might locate there or that the Airport could become a base for drone operations (6.3.24-27). It is simply in the wrong place to serve the market being at the far south east at the end of the country on a peninsula.

[33] See Footnote 31.

2.64 The comparisons to Frankfurt Airport, in terms of the ability to sustain a freight operation without night movements, are simply irrelevant given that Frankfurt carries the second highest freight tonnage of any European airport and acts as a major cargo hub for air and road freight given its highly central location. Much of Frankfurt's cargo is carried in the bellyholds of passenger aircraft and this underpins the freight hub role. Given that Manston does not have anything like the overall market attractiveness of Frankfurt, for many reasons, any constraint on night operations would be a major impediment to freighter operations.

2.65 We do not discuss the passenger market in this report, albeit we have reviewed Azimuth's forecasts and disagree with their conclusions, which we can report upon should any application be made by RSP. The latter parts of Azimuth's Section 5 mention opportunities around ancillary activities such as MRO, aircraft recycling, flying schools and business aviation. We would simply highlight, at this stage, that these areas are highly competitive markets and it is not immediately obvious why Manston would provide an attractive option for operators in these markets when compared to what is often global competition. Nor is it evident that such activities would contribute substantially to the viability of Manston.

Analysis and Conclusions

2.66 Sections 6 and 7 of Azimuth's Volume II, go on to discuss what this means for Manston and draw conclusions. In general terms, Azimuth seek to draw conclusions about the cargo performance of Frankfurt, Heathrow and Stansted airports which are not consistent with the actual facts.

2.67 Again, there is reliance on our work for TfL and the FTA (paragraph 6.1.8) to justify the conclusions reached. As stated above this work does not support RSP's case.

2.68 Azimuth then identify that there are sectoral and geographic markets for which Manston has potential but there is no quantification of the scale of these markets. This is a fundamental gap if the scale of any potential opportunity is to be understood.

2.69 At paragraph 6.3.1, Azimuth set out 9 potential scenario drivers for Manston. However, it is not clear how these scenario drivers have been taken forward to the forecasts set out in Volume III, which do not set different potential scenarios for growth. If we take each of these drivers in turn:

1. *The UK's position in Europe* – Azimuth appear to assume that there will be an opportunity for multi-hop freighter services from Manston but it is far from clear that the traffic rights for such services will continue to be available post-Brexit.
2. *Changes to fuel prices* – in the face of the decline in the value of sterling, these are more likely to work against the operation of more freighter aircraft.
3. *The availability of more efficient aircraft* – the introduction of B787 and A350 aircraft will increase bellyhold capacity rather than reduce the capacity.
4. *Onshoring of manufacturing in the UK* – it is not clear how this is relevant given Kent does not have a strong manufacturing base.
5. *Changes to logistics and transport systems in Kent* – this is a circular argument as it relies on the re-opening of Manston driving a step change in the logistics and transport sector in Kent.

6. *Dramatic changes to economic performance* – it is noted that these are not factored into the forecasts but to the extent that there are Brexit effects on the economy, these would reduce trade and demand for air freight.

7. *Manston becomes a major integrator/forwarder base* -

8. *Manston becomes an Amazon base* -

9. *Manston becomes a hub for drone activity* –

for the reasons noted above, all three of these seem highly unlikely and are, at best, pure speculation with no evidence base whatsoever.

2.70 Section 7 sets out the conclusions from Volume II. According to Azimuth (paragraph 7.1.1), the key issues that are seen to favour Manston are:

- Lack of available slots at other South East airports;
- Bumping of freight from passenger aircraft;
- Security issues particularly with outsized cargo;
- Speed of turnaround.

However, our analysis of the factors would suggest that, other than perhaps the last two factors, there are few factors which would favour Manston and, in any event, these could be replicated by other airports closer to the main UK distribution centres, such as Doncaster Sheffield Airport, if these were deciding factors in the market.

2.71 Based on their analysis, Azimuth then set out (at paragraph 7.1.2), the markets which it believes that Manston could attract:

- Parcels and packages through an integrator;
- Perishables including fruit, vegetables, flowers, fish, and shellfish;
- Outsized freight;
- Formula One and luxury cars;
- Live animals;
- Time sensitive items such as aircraft [parts] and the oil and gas industry;
- Humanitarian and military flights.

In addition, some passenger operations along with a number of ancillary activities such as recycling, MRO[34] etc. are postulated for Manston.

[34] Maintenance, repair and overhaul of aircraft

2.72 Whilst, except for integrator operations, they are plausible markets for some potential operations from Manston, Azimuth make no assessment of the potential quantum of local demand as a basis for assessing how big a market there is. Whilst seeking to discredit analytical methods for projecting future demand at Manston, at the same time, Azimuth rely heavily on estimates made by us and using such methods that suggest there would be excess demand in the London system at 2050 if there is no new runway at all. Fundamentally, Azimuth make no assessment of the viability of what might be on offer or address any concerns as to why such operations have not secured a viable future for the Airport previously.

2.73 The key conclusion drawn by Azimuth is that *"This report demonstrates the potential demand for Manston Airport, indicating its viability and clearly showing that Manston Airport is a valuable local, regional and national asset, providing airport infrastructure badly needed by the UK."* (Paragraph 7.0.1) There is, quite frankly, no factual basis for Azimuth to make this claim. Azimuth claim that the capacity is *"badly needed by UK"* but this is linked to erroneous use of the economic costs of there being no further runway capacity in the UK (see paragraph 2.6 of this report) and a lack of understanding of the air freight market.

2.74 In summary, Azimuth's insistence that Manston's past market performance is not a relevant consideration in understanding how it might perform in the future is both erroneous and contradictory to the evidence put forward to support the qualitative market forecasting approach. The interview findings presented are clearly focussed towards operators that have used Manston in the past and would be pleased to be able to use it again but the evidence presented does not suggest that operators would do more than reinstate past operations. This did not result in an airport that was viable and certainly did not result in annual cargo air transport movements predicted by Azimuth. In our view, and having regard to the evidence, it is unlikely that circumstances have changed so dramatically in the intervening period since the Airport was last operational that there is likely to have been a fundamental change in its ability to capture market share. Its previous cargo performance remains the best starting point from which to consider its future.

2.75 In defence of their position, Azimuth cite lack of investment by the previous owners as being a key cause of Manston's inability to fulfil its potential previously but this is not borne out by the interview responses as the quality of service was noted as good. Fundamentally, the failure to consider the drivers of the Airport's previous performance effectively is a key error which infects the subsequent forecasts presented. The limited size of the market is perhaps the best explanation as to why there was not still further investment in developing the facilities as the operation was fundamentally not viable and it would have been imprudent to invest further.

Forecasting (Volume III)

2.76 The forecasts set out in Volume III draw extensively on the analysis in Volumes I and II. Although stated to be derived on a 'bottom up' basis (Executive Summary Page 1) and claimed to be more conservative than top down, econometrically driven, projections, reliance is still placed, at paragraph 1.1.1, on our quantitative work for TfL/FTA to justify/verify the overall quantum of movements projected, stating *"Rather than merely extrapolating past activity, studies that have focused on the 'lost' or suppressed demand include York Aviation's work (2015, p. 19)."* This work was itself fundamentally top down, based on examining past activity and its implications for the future. Azimuth rely on this as, effectively, the only quantitative evidence presented of a possible level of future demand which might be available to Manston. However, for the reasons set out earlier, Azimuth has incorrectly interpreted our findings and their use of our data to support RSP's case cannot be relied on.

2.77 Paragraph 2.1.2 again suggests that the literature review undertaken showed that *"a qualitative approach was the most appropriate method through which to gather data on the potential demand for an individual airport"*. Whilst we agree that freight forecasting is difficult, as Azimuth themselves note, at paragraph 2.1.4, qualitative forecasts still need to be based on *"market data"* and, at paragraph 2.1.6, Azimuth go on to refer to the anecdotal information collected in the interviews as primary market data. Overall, this anecdotal evidence does not provide a basis for the development of a forecast of future usage nor for the presentation of a business case of the proposed development.

2.78 To further justify the approach to forecasting, Azimuth claim that the Airports Commission recommended the use of a Delphic approach. This is not strictly true as what the Airports Commission actually said was:

> *"In cases where there is limited or no data available, judgement based forecasting, using techniques such as the 'Delphi Method' is applied. This approach involves experts in the field considering historical patterns to predict future trends and is often used in conjunction with both naïve and causal models to compare forecast trends. The Delphi method is considered especially useful for long term forecasting (20-30 years) and is effective in drawing on existing knowledge to identify areas of agreement and disagreement in forming the forecast. However, for complex themes the Delphi Method is not always considered appropriate as there is no way of testing different outcomes e.g. through scenario testing."*[35]

2.79 First of all, the Delphi Method involves a number of independent experts considering historic patterns of data and forming a judgement based forecast. Results are shared and refined until a consensus is reached amongst experts. This is not the same as a single judgemental based forecast as Azimuth have presented, based not on historic data but some unquantified estimate of 'lost' demand. In any event, we would question the appropriateness of this methodology, for the reasons that the Airports Commission cite, namely the importance of scenario testing in the context of a forecast to be used for a planning application, particularly one where the applicant is purporting to promote a NSIP under Section 23 of the Planning Act 2008 (as amended) and seeking to demonstrate that there is a compelling case in the public interest for the compulsory acquisition of the Airport site.

[35] Airports Commission, Discussion Paper 01, *Aviation Demand Forecasting*, February 2013, Paragraph 2.8

Freight Forecasts

Short to Medium Term (10 years)

2.80 Azimuth place reliance on both the overspill argument (paragraph 2.2.2) and that there will be a reversal away from the existing preference for bellyhold for most types of air freight, despite the overwhelming evidence that this is likely to remain the case in future due to the lower freight rates available. Azimuth's claim is not supported by the facts, current market trends or by other industry observers including the DfT and Airbus.

2.81 Furthermore, Azimuth appear to assume that, to the extent there is overspill seeking freighter capacity as an alternative, that Manston would be the only solution. This is not the case given available capacity for freighters at airports such as East Midlands (particularly well placed for the distribution of goods across the UK), Stansted and Doncaster Sheffield. These airports are already established and operational and, therefore, well placed to deal with any such requirements in the short to medium term using their existing infrastructure and without the need for any compulsory acquisition of land.

2.82 At paragraphs 2.2.6 and 2.2.7, Azimuth set out the methodology they have used for deriving freight movements and tonnage for Manston. In essence, these movement forecasts are entirely based on claimed confidential discussions with airlines, airports and others involved in the industry, which are then converted to freight tonnage based on the capacity of each aircraft and assumed load factors. These discussions would appear to be different from the list of interviewees reported in Volume II, which included only 1 airline (unlikely itself to relocate its single European operation to Manston) and no other airports. Although it is claimed (paragraph 2.2.9) that switching costs have been taken into account, there is no explanation as to how these costs have been factored into the assessment of what operations Manston might attract. It is likely that RSP would need to incentivise such a switch of activity and this would impact on the overall viability of the Airport, particularly in the early years. A further consequential issue arising from this is the economic cost of displacement of activity, which we discuss further in Section 5, as this needs to be accounted for in economic assessment of RSP's proposal.

2.83 A vague list of potential operations is set out at paragraph 3.2.3, albeit with specific assumptions then stated about the loadings on each. However, the basic information regarding the likely annual frequency of each operation is not given, which is essential to enable an understanding of the likelihood of such operations using Manston in the context of the UK air cargo market as a whole and taking into account ongoing operations at other airports. Paragraph 3.2.3 appears to set out simply a list of generic airlines that might offer services if Manston is re-opened. It provides no insight into whether the demand to fill those services will be there or whether the services could be operated viably by the airlines concerned and at what weekly or annual frequency. This is simply not an appropriate or robust basis for a forecast.

2.84 Whilst accepting that there may be confidentiality concerns in revealing the specific plans of any individual airline, this is all the more reason why there needs to be some underpinning analysis of the potential scale and viability of each specific market identified in the forecast in order to provide some basis for asserting that any of the airlines might operate to the destinations postulated. As presented, the aircraft movements and the consequential tonnage forecasts are entirely hypothetical with no obvious linkage back to any of the evidence presented in the earlier volumes. This is not acceptable given the implications and importance of any proposed application for a DCO and the requirement that a compelling case be demonstrated for the purpose of compulsory acquisition. At the very least, there is a lack of transparency in the approach that needs to be explained so that consultees can understand the forecast and in order to determine whether or not the proposed DCO application falls within Section 23 of the Planning Act 2008 (as amended).

2.85 To illustrate the lack of credibility of the forecasts, Table 1 shows for Year 2 (the first operational year), a throughput of nearly 100,000 tonnes. This would make Manston the 5th largest freight airport in the UK in its first year after re-opening (compared to 2016 actual throughput at the other airports). This would place it close to the scale of freight operations at Manchester Airport, including bellyhold freight. It would make Manston the 3rd busiest airport in the UK in terms of tonnage carried on dedicated freighter aircraft. This is simply not a credible proposition. It is simply at odds with the verifiable evidence and contrary to all experience there is of operations at Manston. If there is a short term market of that scale available for Manston, why did it historically not exceed 43,000 tonnes (2003)? Without full explanation of the scale of each of the markets and a reasoned justification for the number of movements assumed for each of the operations identified at paragraph 3.2.3, the forecasts as presented cannot be considered robust and substantial further evidence is required to validate the basis of the RSP DCO proposal.

Long Term (10-20 years)

2.86 As noted earlier in this section, the long term forecasts wrongly apply a 4% per annum growth rate as a basis for deriving the longer term freighter aircraft movement forecasts for Manston. To reiterate, this is inappropriate and unrealistic given that it is based on forecasts by Airbus for freight tonne kilometres at the global level[36]. Even if the short term forecasts were credible, which they are not, their extrapolation is on an unrealistic basis. At most, any extrapolation should more realistically have been based on the 2013 DfT freighter movement growth rate of 0.4% per annum and the latest DfT estimates[37] suggest that even this may be too high.

2.87 Table 6 then sets out the infrastructure requirements for cargo, which are based entirely on the forecasts put forward. However, even then, we are not told how these infrastructure requirements have been derived in terms of the operating pattern over the day, turnaround times, the number of night movements and other key assumptions for each aircraft type stated or indeed how they relate to the capability of Manston Airport with its existing infrastructure. Such information is critical to validate the infrastructure required (if indeed any is required given our assessment of the capability of Manston Airport), as well as to carry out the assessment of the environmental impacts.

[36] Now reduced to 3.8% in the latest Airbus forecasts.
[37] Department for Transport, UK Aviation Forecasts, October 2017, paragraph 2.56.

Passenger Forecasts

2.88 Although not the main focus of this summary report, we note that the passenger forecasts, set out by Azimuth in Section 2.4, suffer from many of the same problems as the freight forecasts. They appear to be based almost entirely on supposition and inferences that cannot be relied upon. There appears to be no consideration of what is known about market sizes, nature or previous performance, nor a recognition of the extent to which growth will need to be incentivised through discounting of airport charges and marketing support payments. Similarly to the freight forecasts, and for reasons that are not given, Boeing global growth rates appear to be used by Azimuth for passenger operations beyond year 10 rather than the UK specific forecasts produced by the DfT[38], which are substantially lower. This, once again, is a substantial overstatement of the potential for growth.

Overall Conclusions on Forecasts

2.89 Azimuth's entire analysis of the air freight market is focussed on the existence of a theoretical opportunity based on estimates of spill from London in the event of the third runway at Heathrow not being built or being delayed, an unsupported hypothesis that there is a trend away from bellyhold freight, and based on a small sample of interviews with largely marginal players in the UK air freight sector and/or local interests.

2.90 Azimuth's reports do not at any point provide any substantive evidence or analysis as to whether Manston Airport can effectively, viably and sustainably compete in that market. Azimuth's reports do not explain how Manston Airport will be able to price effectively against the bellyhold rates offered by growing established and operational UK regional airports or the continental hubs. Azimuth's reports do not explain how Manston Airport will compete against the range of destinations offered by the long haul passenger networks of the continental hubs or the much greater freighter network offers of East Midlands or Stansted airports. We agree that there may be a niche market for Manston, just as there was previously, and that this market will probably grow in the future in line with the pure freighter market overall (noting that the DfT does not see growth in this market to 2050), but we cannot see how Manston will provide a sufficiently attractive alternative in a broader freight market to attract a market share sufficiently large as to reach the volume and movement numbers envisaged by Azimuth and required to justify RSP's proposals to be considered under the Planning Act 2008 (as amended). Indeed, if we look at past history, it seems highly unlikely that commercially viable operations for the Airport would be attainable for the foreseeable future.

2.91 In overall terms, the forecasts presented by Azimuth at Table 1 of Volume III are simply not credible and do not provide a robust basis for promoting a DCO. We present analytically derived cargo movement forecasts in Section 3 of this report to evidence and support this conclusion that any future projected use of Manston Airport would be significantly lower than that asserted by RSP.

[38] Department for Transport, UK Aviation Forecasts 2013 and 2017.

2.92 In terms of Azimuth's key questions, as set out at paragraph 2.3 at the start of this section, the first two tests may well be met in terms of the need for more airport capacity in the South East of England. That is why the draft Airports National Policy Statement is promoting the development of a third runway at Heathrow as a solution in the period up to 2030. The first two questions are, therefore, irrelevant to RSP's proposals. However, in relation to the third test, the key point is that for Manston to be a long term solution to the UK's capacity problems, it must be a sustainable, commercial proposition, capable of attracting airlines, passengers and shippers to use it. Azimuth's analysis ignores the history at Manston and does not provide any evidence to conclude that any future projected use of Manston Airport would require an increase in the capability of the Airport.

2.93 Indeed, whilst we have provided in this report our assessment of the capability of Manston Airport (Section 4), we note that nowhere has RSP done the same exercise. The failure of RSP to provide their own evidence of the capability of Manston Airport and the amount by which the proposals would increase that capability by is a major omission in RSP's consultation material. Rather, the only information that they present is a forecast of future freight movement demand, which has no credibility as explained in this report. This failure means that, in our opinion, the requirements in Section 23 of the Planning Act 2008 (as amended) have not been satisfied. In essence, we would have expected RSP to be able to show:

- the capability of Manston Airport of providing air cargo transport services;
- the amount by which RSP is proposing to increase that capability by and thus the "new" capability; and
- a credible forecast for why that 'new' capability is required.

None of this information is provided by RSP.

3 FREIGHT FORECASTS

Introduction

3.1 In this section, we present our view of demand in the UK air cargo market at present and consider how this market will develop in the future, setting out a number of potential cargo forecast scenarios for Manston Airport specifically over the period to 2039/40 (RSP's assessment year). This is a more robust approach than the qualitative approach adopted by Azimuth and builds on the approach adopted in our work for TfL and the FTA, by updating this work and assessing Manston's potential share of the market. This is the correct way to use our earlier work to inform an assessment of the potential at Manston.

3.2 The analysis presented here builds on our previous work but supersedes it and extends it in terms of:

- considering changes in the market and circumstances since the time of the previous research, notably the decision to move forward with a third runway at Heathrow, the increasing long haul passenger operations at regional airports and the continued commitment from Stansted Airport to the freight market through its future plans;
- examining the demand and capacity position not only in London but across the UK as a whole;
- analysing potential cargo capacity growth in more detail using Airports Commission traffic forecast data, not available at the time of our previous work;
- more explicitly considering the nature of air cargo that might be affected by any form of constraint within the London airport system or in the UK;
- providing some indication of how cargo demand is spread geographically in the UK to aid consideration of how it might be served in the future.

3.3 Our previous work did not consider in detail the role that might be played by Manston Airport or indeed other UK regional airports. It considered, in broad terms, the effect of a constrained London system capacity on freight demand and how this demand might be met within the confines of the capacity position at the time, noting particularly the role that might be played by the major continental hub airports, given the price advantages that they might offer through the availability of bellyhold capacity.

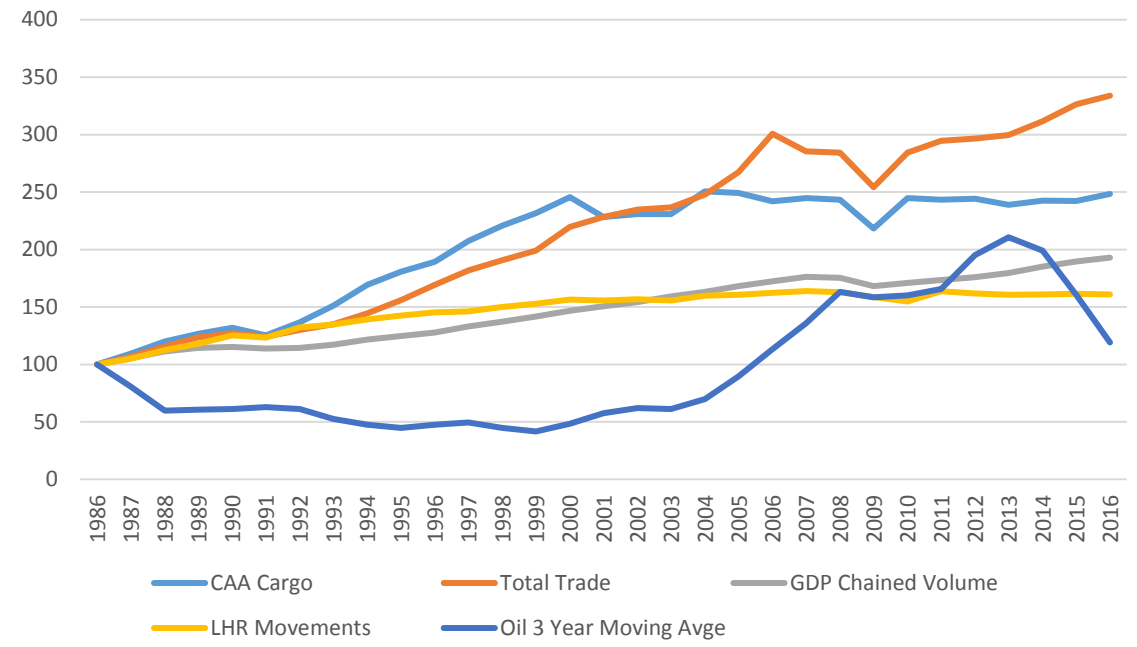
3.4 In this report, we now consider specifically the potential role for Manston by way of a scenario analysis that draws on the analysis of the overall market and the past performance of the Airport. The use of scenarios rather than a single forecast is intended to show a range of possible outcomes for Manston, allied to an assessment of the likelihood that the scenarios might be achieved in a manner which properly reflects the uncertainties identified in air freight forecasts.

Historic Performance of the UK Air Cargo Market

3.5 Our assessment of the quantum of air freight demand in the UK is fundamentally driven by analysis of the past performance of UK air cargo against a range of key economic and market indicators, notably UK trade in goods, GDP, oil price and ATM numbers at Heathrow. **Figure 3.1** shows the indices for these various metrics over time (with each indicator set to 100 in 1986).

3.6 This analysis reveals a number of interesting patterns. Until around 2000, UK air cargo was strongly related to UK trade in goods, with what would appear to be some stimulus provided by falling oil prices that would have made the cost of air cargo relatively more competitive with other cheaper modes. However, in around 2000, the market changed and this relationship appears to break. UK trade in goods continues to grow but growth in air cargo essentially stalls.

Figure 3.1: UK Air Cargo and Economic Metrics (Index: 1986 = 100)



Source: CAA Statistics, ONS

3.7 It is, therefore, helpful to look at why this might have happened. There are two main factors that need to be considered. The first is the oil price, which, through much of the late 80s and 90s, had been on a relatively benign downward trend. However, in around 2000, it started to rise again, accelerating through the mid-2000s and peaking in around 2013. The price of fuel is a key factor in the attractiveness of air cargo compared to other modes, particularly for pure freighter services, where the full direct operating costs of the flight must be borne by the cargo being shipped (as opposed to bellyhold freight where direct operating costs are largely covered by passenger operations, with cargo revenue essentially treated as a marginal benefit). This change in oil prices slowed demand for air freight globally and, in particular, drove users towards bellyhold rather than freighter options[39]. We set out the effect in the UK further below.

[39] Department for Transport, *UK Aviation Forecasts 2013*, paragraph 3.48, Steer Davies Gleave for Department for Transport, *Air Freight: Economic Drivers and Environmental Impacts*, 2010, Executive Summary.

3.8 The second point to note is the relationship to Heathrow ATMs. Up until around 2000, Heathrow was still growing its annual ATMs, which ultimately was driving the availability of bellyhold capacity in the UK air freight market. However, with runway capacity constraints biting, from around 2000, the rates of growth in ATMs at Heathrow initially slowed dramatically then stalled as it reached its consented limit.

3.9 When these two factors are combined, it is possible to understand what has happened in the UK air cargo market. It also has two key implications for considering the growth of the air cargo market moving forward and specifically in relation to Manston:

- ✈ it is reasonable to assume that the fundamental link between economic or trade growth and air cargo still exists and that, ultimately, with economic growth and increasing trade, demand for air cargo will grow. However, with oil prices remaining higher than seen in the past, it is likely that the growth path will be lower. We have assumed that it is likely to be more in line with the growth in real GDP over time;
- ✈ the capacity position at Heathrow is clearly a constraining issue for UK air freight demand but it is noticeable that this constraint has not resulted in significant gains being made by other airports in the London system. This suggests that, while there is probably a degree of constrained demand in the London system at present, this is affecting bellyhold air cargo and that is not translating through into substantially greater freighter growth at, for instance, Stansted or East Midlands. We examine this issue further below.

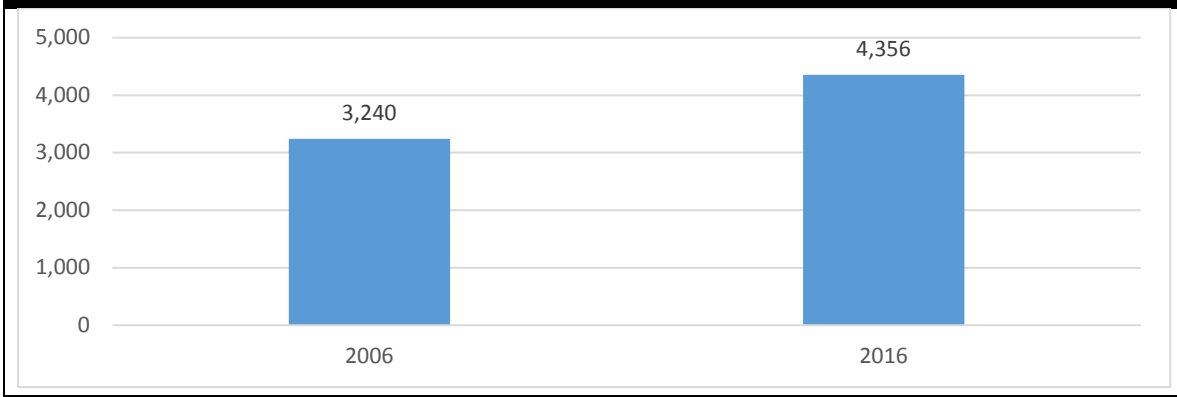
3.10 This is particularly important as it suggests that the market for bellyhold freight is different from that for pure freighter traffic. This is a function of price and urgency in relation to general air freight, as opposed to either express freight or niche products. For express freight or niche products, shippers are prepared to pay a premium which allows the use of freighters because either speed is of the essence or the destination is hard to reach or the cargo is difficult to handle in some way. For general air freight, these drivers are not the same. Accepting that all air cargo is to some degree sensitive to speed of delivery, it seems that what is likely to be being pushed from bellyhold capacity, in a capacity constrained environment, is less time sensitive and shippers' willingness to pay is lower. Hence, in the current market with relatively high fuel prices, freighter options are not an adequate substitute.

3.11 This is very important from the perspective of considering the potential role of Manston. It suggests that it will be very difficult for the Airport to compete effectively for any traffic displaced as a result of constraints in the London market as it cannot and will not be able to provide the price, frequency and breadth of destination advantages that bellyhold freight can offer. The airports competing for cargo traffic being pushed away from Heathrow, now and in the future, are the large UK regional airports with growing long haul passenger networks and the near European global hub airports, which offer the closest substitutes to Heathrow and are within easy trucking time of, certainly, the London and South East market. In any event, bellyhold capacity at Heathrow is expected to increase substantially once the third runway becomes operational so driving down the competitive prices in the market, making it even more difficult for freighters to compete. Even if there are delays to the provision of additional runway capacity at Heathrow, we would not expect a change to the pattern of behaviours observed since 2000, namely that cargo displaced from Heathrow will be trucked to other airports with available competitively prices bellyhold capacity.

3.12 Whilst the volume of air cargo flown to/from the UK's airports over the past 15 years has remained relatively static, there have been considerable changes in the way that demand has been serviced, which again reflect the drivers and constraints on demand described above. Essentially, the market has been consolidating to a small number of airports and bellyhold cargo has become more dominant.

3.13 The Herfindahl-Hirschman index (HHI) is a commonly accepted measure of market concentration[40]. **Figure 3.2** shows the HHI for the UK air cargo market in 2006 and in 2016. The change in the concentration level in the market over the last 10 years has been marked. The HHI for the UK air cargo market has increased by around 34%. The consolidation in the UK air cargo market in the last 10 years has resulted in an increase in the HHI of nearly 1,100. This continued concentration in the market can also be seen by examining the drivers of change in UK air cargo over the last decade. **Figure 3.3** sets out a bridge diagram between 2006 and 2016 showing the change in freight handled via bellyhold and pure freighter at major UK freight airports.

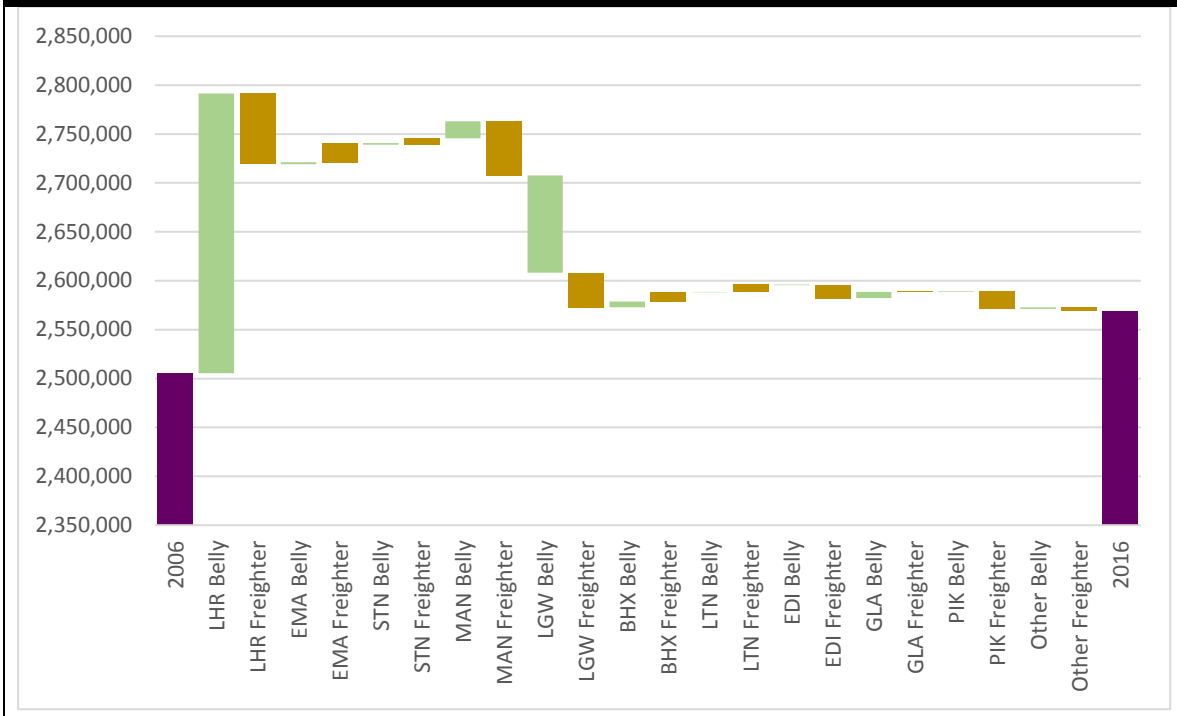
Figure 3.2: UK Air Cargo Market Herfindahl-Hirschman Index of Market Concentration



Source: York Aviation analysis of CAA Statistics

[40] It is calculated by squaring the market share of each firm competing in a market, and then summing the resulting numbers, and can range from close to zero to 10,000. The closer a market is to being a monopoly, the higher the market's concentration (and the lower its competition). If, for example, there were only one firm in an industry, that firm would have 100% market share, and the HHI would equal 10,000, indicating a monopoly. If there were thousands of firms competing, each would have nearly 0% market share, and the HHI would be close to zero, indicating nearly perfect competition.

Figure 3.3: Drivers of Change in the UK Air Cargo Market – 2006 to 2016



Source: York Aviation analysis of CAA Statistics

3.14 There are a number of key points to note:

- the market has continued to consolidate into Heathrow through increased bellyhold capacity due to the increasing focus on long haul destinations. These gains have been offset by significant erosion of freighter capacity;
- elsewhere in London, Gatwick has seen both bellyhold and freighter capacity significantly eroded as that airport has become more capacity constrained and it has focussed increasingly on short haul low fare passenger services, albeit this trend is starting to reverse as more long haul operations come on stream. Stansted and Luton have seen some growth in freighter tonnage but this does not come close to offsetting what has been lost from elsewhere with Stansted heavily focussed on the integrator and express services market;
- East Midlands, with major DHL and UPS bases, has been the only airport that has seen significant growth in pure freighter traffic, but again this has not offset losses in freighter traffic from elsewhere, suggesting that, for more general air cargo, bellyhold capacity is fundamentally more attractive, even potentially if this involves trucking to distant airports;
- this is reinforced by what has happened at Manchester, which has seen growth in its bellyhold market, relating to its growing long haul network, but with its freighter traffic falling away. The growth in bellyhold traffic at Birmingham is also probably reflective of its growing long haul passenger network;
- in general, there has been a noticeable switch towards the use of bellyhold capacity. Since 2006, pure freighter cargo's share of the UK market has dropped from 37% to 30%, while actual freighter tonnage has dropped by 17%;

- the performance of Prestwick (PIK) provides perhaps the most obvious direct comparator to Manston, with a similar sized freighter operation in 2006 to Manston at its peak. Freighter traffic at that airport has dropped by 64% since 2006. In the meantime, Prestwick was nationalised to maintain operations as it had been heavily loss making for a considerable period of time.

3.15 The implications for Manston are clear. Bellyhold is the preferred option for a significant proportion of the air cargo market and this preference has intensified in recent years. The only airports experiencing freighter growth are those with significant integrator activity. This suggests that Manston's likely niche freighter offer will struggle to penetrate the market. There has been consolidation into larger airports, which again suggests that Manston will struggle to establish market presence. Finally, the experience of Prestwick, its nearest comparator in many ways, is not encouraging for Manston. Prestwick's well established pure freighter operation has been heavily eroded and the airport has had to be nationalised to maintain its operation due to inherent lack of commercial viability.

The Geographic Distribution of UK Air Cargo Demand

3.16 At the outset, it should be made clear that there is very limited data on where air cargo originates from or is destined for within the UK. However, some indications are available from other research, notably recent work by MDS Transmodal, in conjunction with York Aviation, for TfN in relation to its International Connectivity Strategy[41]. MDS analysed a series of datasets on air freight and road haulage and estimated that around 14% of UK air freight demand originates in or is destined for the North of England. We also know that air cargo is often trucked a considerable distance before being loaded on to aircraft.

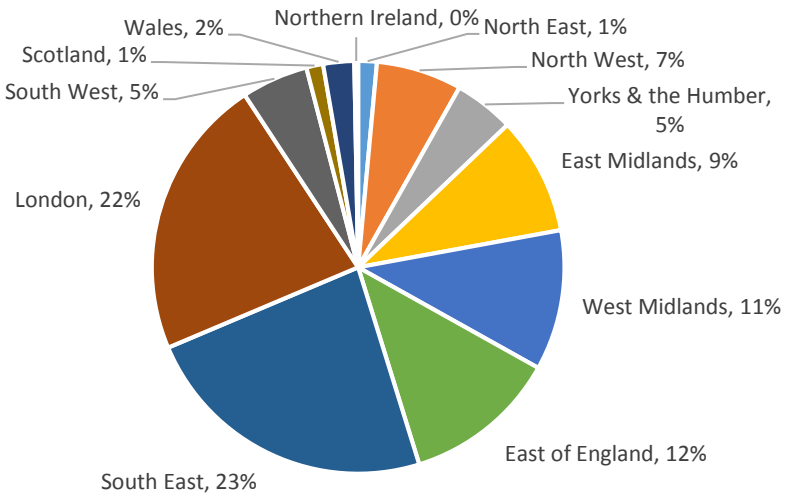
3.17 We have, therefore, developed a simple gravity model that distributes air cargo regionally across the UK based on:

- for exports, the distribution of manufacturing employment in the UK. This is intended to reflect that air cargo exports are likely to be primarily manufactured goods;
- for imports, the distribution of UK population. This is intended to reflect that imports are, in many cases, destined either for consumers directly or retailers. This is clearly a simplification but we believe a sensible one given the data available;
- a relatively low distance decay factor of 1.5, reflecting the relative insensitivity of air freight to trucking times. This has, in part, been calibrated based on observed distance decay factors using data available in the TfN work. This is generic and we have no reason to believe that the balance between trucking costs and the use of air freight would vary across the UK.

3.18 The resulting distribution of air cargo demand is shown in **Figure 3.4**. While there is a heavy concentration of demand in the Greater South East, there is significant demand located across the country. The issue for Manston is that it is poorly placed geographically to serve this demand, even for London and the South East, particularly once the location of distribution centres for import freight, which cluster around the M1 and M6, is taken into account.

[41] Transport for the North, *International Connectivity Evidence Report*, York Aviation/MDS Transmodal July 2016, Appendix C.

Figure 3.4: Modelled Regional Distribution of UK Air Cargo Demand



Source: York Aviation analysis of CAA Statistics, ONS and Google Maps Data

3.19 In the event of air cargo capacity constraints in London, this demand is likely to look initially for cargo capacity closer to home at the major regional airports, particularly those that are developing broader long haul passenger networks. Even if freighter aircraft are required for this demand, there are likely to be substantially better options than Manston. Not least the national freight hub at East Midlands, with its central location in the UK and excellent multimodal connectivity to a wide geographic area.

Future Demand for Air Cargo in the UK

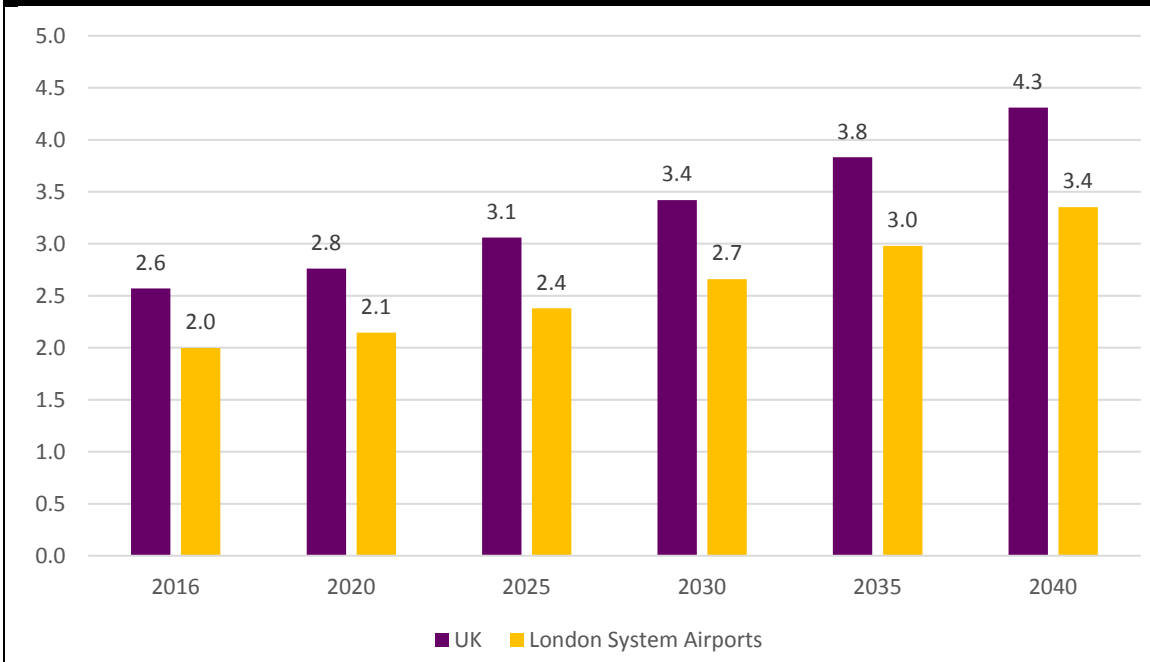
3.20 The initial step in producing our cargo forecasts for Manston is to consider the likely size of the London system and UK air cargo markets in the period to 2040. This is an unconstrained forecast and does not, at this stage, consider whether capacity will be available to deliver this demand.

3.21 In line with our analysis above and consistent with our 2015 report for the FTA, we adopted a relatively simple approach, growing existing air cargo demand forward in line with GDP projections for the UK economy. The GDP forecasts used are the latest forecasts produced by the Office for Budgetary Responsibility at the time of writing. These are taken from:

- Economic & Fiscal Outlook (March 2017), which provides short to medium term forecasts;
- Fiscal Sustainability Report (January 2017), which provides long term forecasts for the UK economy.

3.22 These forecasts suggest average real growth in UK GDP of around 2.2% over the period to 2040. The resulting projections of air cargo demand at the London system airports and across the UK are set out in **Figure 3.5**. This analysis sees total UK air cargo demand reach around 4.3 million tonnes by 2040 and demand in the London system[42] of around 3.4 million tonnes by 2040. At this stage, we have assumed that the split of tonnage between the London airports and the rest of the UK remains as currently, driven by the large concentration of freight forwarders in the vicinity of Heathrow in the light of its major air freight hub role. This may well overstate the scale of demand in London given increasing long haul networks at regional airports.

Figure 3.5: Air Cargo Tonnage Forecasts (million tonnes)



Source: York Aviation

Air Cargo Capacity at UK Airports

3.23 The second stage in our assessment is to consider the extent to which the demand identified above could be met by UK airports and the London system airports. This is, again, in line with our approach taken in our work for the FTA in 2015. However, the analysis undertaken for this research is more detailed, uses more up to date and detailed information on future passenger ATM forecasts and, specifically, considers Stansted's more recent statements in relation to continuing growth in the cargo market to around 400,000 tonnes[43] and removal of the existing 35 mppa passenger planning cap and extension to 43 mppa[44]. Had we been specifically asked, we would have advised Azimuth of the need to carry out such an assessment so as to understand the implications of our earlier work for TfL and the FTA.

[42] Based on the London airports current share of the national market.
[43] Sustainable Development Plan – Stansted Airport (March 2015).
[44] Press Release – Stansted Airport (17 October 2017).

3.24 In order to estimate the likely bellyhold capacity that will be available through the period to 2040, we have produced projections of passenger ATM demand for each of the top 10 freight airports in the UK in 2016, along with a residual forecast for Other UK airports. For Heathrow, Gatwick and Manchester, these forecasts have been split into domestic, EU and non-EU ATMs. The future years for each airport have been based on the ATM forecasts produced by the Airports Commission for which detailed data files have been released[45]. Years prior to the opening of Runway 3 at Heathrow, uses the Base ATMs scenario, while post opening uses the HAL ATMs scenario, which reflects the third runway.

3.25 The existing freight loads per passenger ATM for each airport have been estimated using CAA Statistics. These average loads have then increased by 1.0% per annum tapering to 0.5% per annum for Heathrow and 1.6% per annum tapering to 1.0% per annum for other airports. This reflects trends in average loads identified from CAA Statistics over the last five years.

3.26 In relation to pure freighter capacity, we have, in the first instance, considered what might be termed a business as usual view of capacity moving forward. This considers the likely number of freighter ATMs that might be flown rather than considering the actual movement capacity of individual airports, which may be greater. This is, ultimately, a more stringent view of capacity moving forward and is more likely to lead to a conclusion that there is a lack of freighter capacity to meet any demand than simply considering what any given airport could actually handle, especially given that Stansted is some distance from its freighter ATM cap and East Midlands is not close to any form of ATM limit. To enable this analysis, we have grown freighter ATMs at each airport by 0.4% per annum, in line with the expected growth rate from the DfT's Aviation Forecasts 2013[46]. However, we note that the most recent DfT forecasts[47] suggest that no growth in freighter movements to or from the UK is now expected. Hence, our use of the previous DfT growth rate may overstate the market for pure freighter operations but we have retained this approach so as not to understate the extent of any potential overspill market for Manston.

3.27 Once again, average loads per freighter ATM have been estimated for each airport from CAA Statistics. As with bellyhold cargo per ATM, there has been an upward trend in average loads on freighters in recent years of around 1.1% per annum (York Aviation analysis of CAA Statistics). This is assumed to continue over the period.

3.28 In addition to this business as usual view, we have also taken a view as to the likely total tonnage capacity over time of the two largest freighter airports in the UK, East Midlands and Stansted, based on those airports' development plans:

- the Stansted Sustainable Development Plan talks about developing cargo capacity to handle around 400,000 tonnes of cargo. We have assumed that current capacity is around 300,000 tonnes and that this grows steadily over time to 400,000 tonnes by 2040;

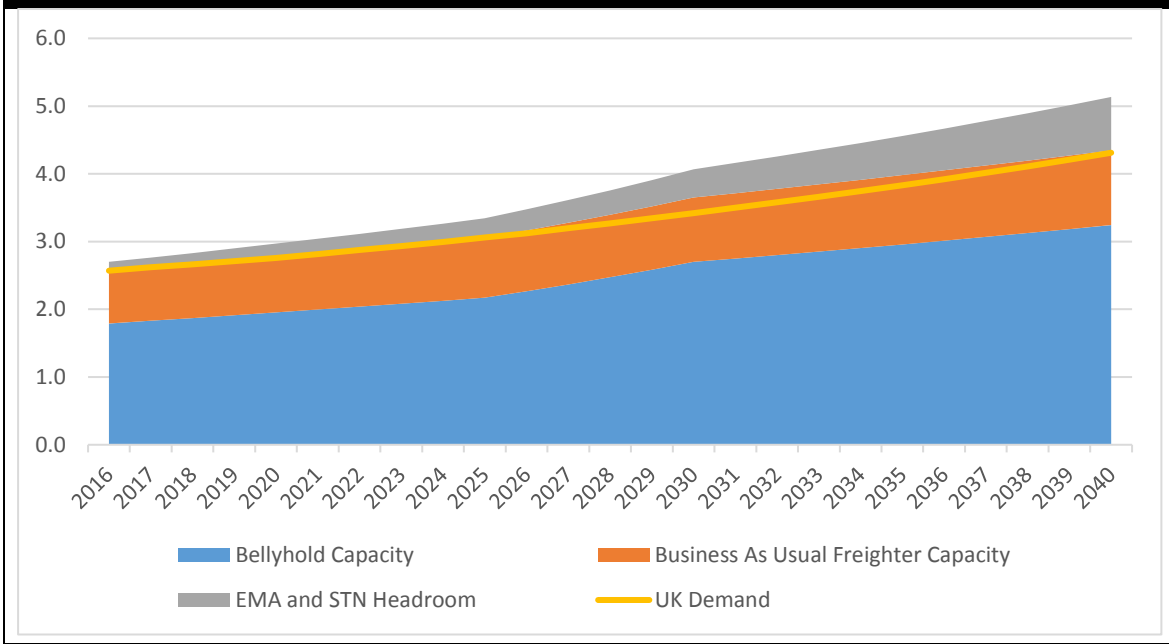
[45] https://www.gov.uk/government/publications/airports-commission-documents-and-data.
[46] The exception to this is the small number of freighter movements at Heathrow, which are not allowed to grow until the Third Runway is opened.
[47] Department for Transport, *UK Aviation Forecasts*, October 2017, paragraph 2.56.

- the East Midlands Sustainable Development Plan describes its runway capacity as able to support a 10 million passenger and 1.2 million tonne cargo airport[48]. We have assumed that this capacity could be developed over time to 2040 from a base capacity of 400,000 tonnes.

3.29 This assessment of the cargo capacity headroom at Stansted and East Midlands helps provide a view of how any excess demand identified could be handled by freighters in the UK if this were the response of the market to any shortage of bellyhold capacity, although it is important to note that we do not believe this would be the primary market response given the lower cost of bellyhold alternatives. It should, however, be recognised that the speed of build-up of this headroom is to a significant degree a matter of conjecture. There will be infrastructure developments required to enable capacity but, if demand were there, it is likely that these could be brought forward as they would be incremental expansion of existing facilities which could be phased in to meet demand more easily and cheaply than the substantial cost involved in re-opening Manston.

3.30 The resulting estimates for air cargo capacity for the UK as a whole and the London system over time are shown in **Figures 3.6** and **3.7**.

Figure 3.6: UK Air Cargo Capacity

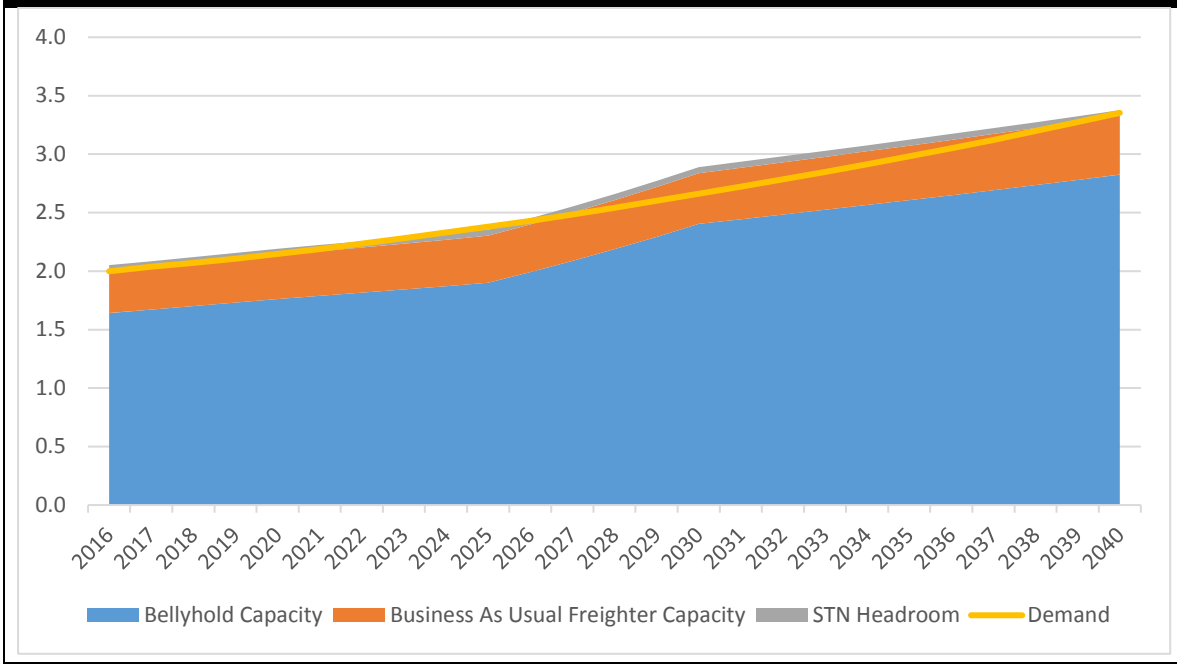


Source: York Aviation

[48] East Midlands Airport Sustainable Development Plan, 2015. Page 75.

3.31 At a UK level, our analysis suggests that there are unlikely to be capacity issues in the cargo market prior to 2040 even on a Business As Usual Freighter Capacity basis. Once the third runway is opened at Heathrow, there is in fact likely to be excess capacity in the market, which is likely to soften demand for supporting freighter capacity dedicated to general air freight (accepting that integrator/express freight is a separate market to a significant degree). It should, however, be noted that capacity on a Business As Usual Freighter Capacity basis is likely to become constrained shortly after 2040 but this can easily be addressed by exploiting the inherent airport capacity headroom still available at Stansted and East Midlands if it is appropriate to serve the market in that way. Overall, we can conclude from this analysis that there will be no shortage of freighter capacity in the UK before 2040 and overspill from other airports would not provide a rationale for re-opening Manston.

Figure 3.7: London System Air Cargo Capacity



Source: York Aviation

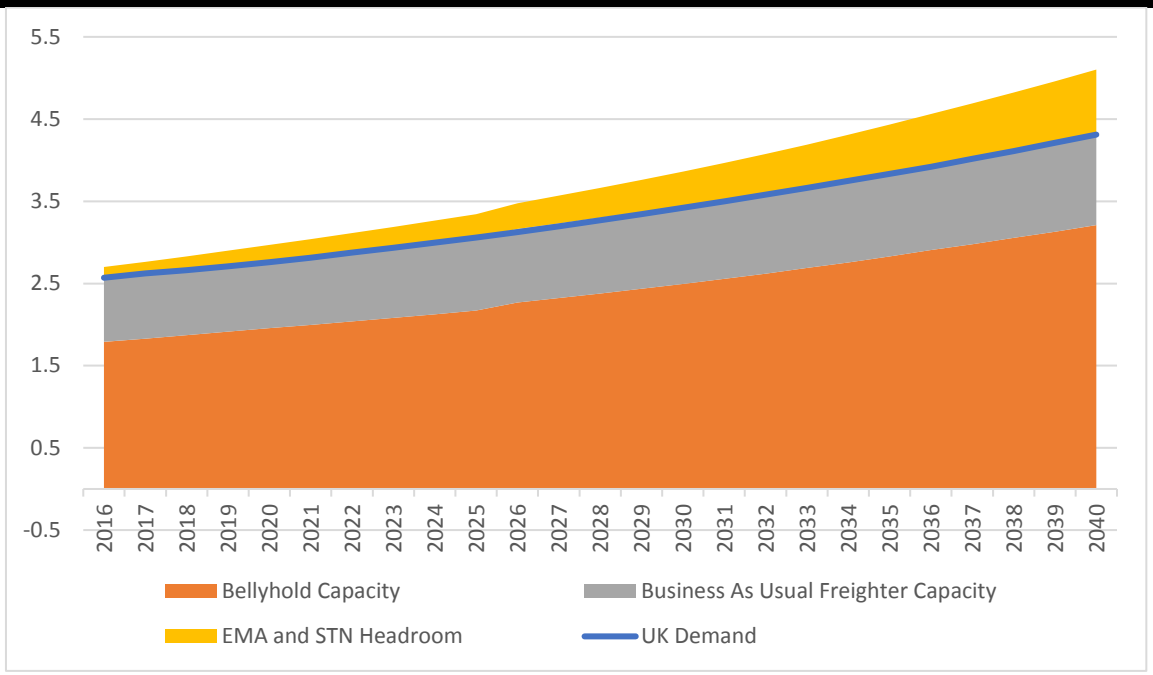
3.32 The situation at the London airports is slightly different if we assume that London maintains its market share of the overall market and there is no natural 'clawback' to the regions. With Heathrow's bellyhold growth relatively constrained, there are potentially some limited capacity constraints in the medium term before the third runway opens but, if there was demand, we would expect Stansted to develop additional freighter capacity sooner. Any constraint would be fleeting. Once the third runway is opened, excess capacity develops rapidly. Potential capacity issues do not then start to re-emerge until around 2040, when it appears that Heathrow is likely to become runway capacity constrained once more.

3.33 The implications for Manston Airport are that, even in pure volume terms, push factors from other airports in London are unlikely to provide opportunities for growth before 2040, and this is before any consideration is given to Manston's suitability to serve the markets in question. In the short to medium term, there is likely to be some limited constraint in the London system before the third runway at Heathrow is opened. However, this is largely a function of bellyhold constraints at Heathrow and it is highly questionable as to whether the type of cargo that is likely to be forced out will be suitable for Manston or indeed would switch from bellyhold to pure freighter operations at all.

3.34 Logic would suggest that what will be pushed out is relatively low yielding, general air cargo that is more sensitive to price and less sensitive to time. Essentially, this is akin to business passengers forcing leisure passengers out of Heathrow. This type of air cargo is not likely to see pure freighters as an effective alternate, given the higher prices involved. It is more likely to seek out alternative bellyhold capacity at UK regional airports (which might actually be closer to its point of origin given our analysis above) or travel via truck to the continental European airports.

3.35 Our analysis here has been predicated on the construction of a third runway at Heathrow, as this is clear stated Government policy. In the event that the third runway is delayed or does not happen at all, it is expected that there would be other adjustments in the UK air transport market, including the provision of more long haul services from other airports offering bellyhold capacity. In this case, whilst there could theoretically be a level of capacity shortfall at the London airports assuming that they maintain a constant market share, we would expect demand and capacity to keep pace at the UK level as growth at regional airports is accelerated. This is illustrated in **Figure 3.8**. We consider that analysis at the UK level remains the most relevant and this does not suggest that there will be a capacity shortfall before 2040.

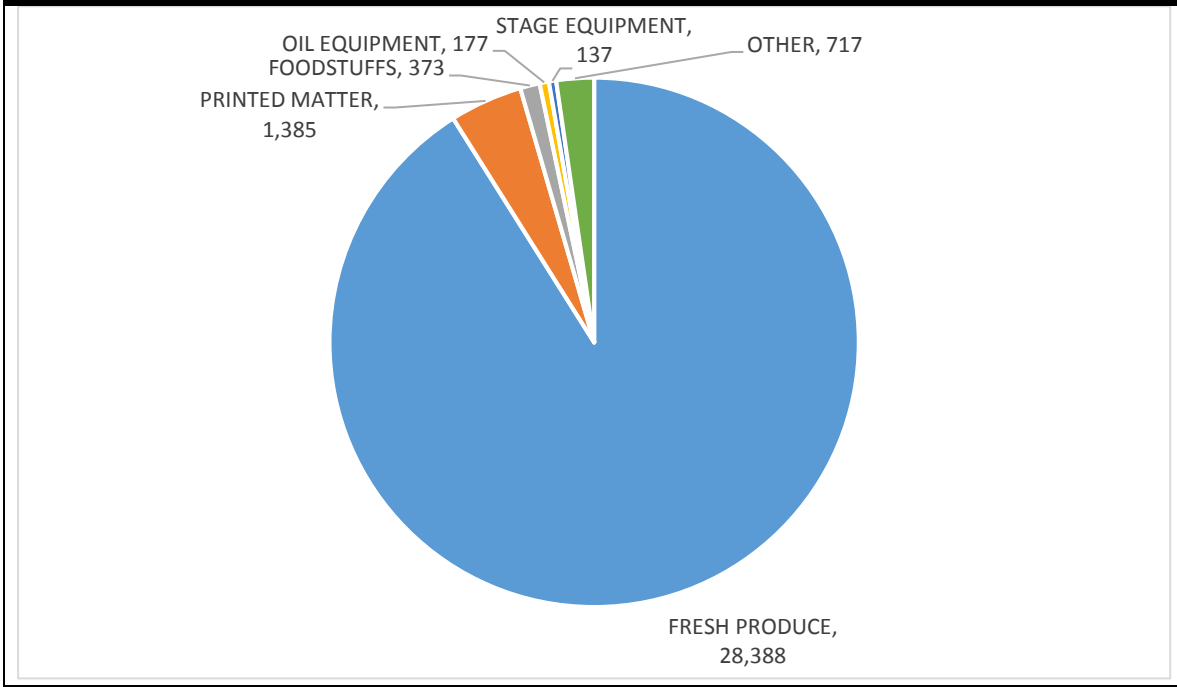
Figure 3.8: UK Air Cargo Capacity with No Third Runway at Heathrow



Source: York Aviation

3.36 An examination of the nature of cargo traffic that used Manston in the past also supports this assessment. Data provided to York Aviation by the current owner and set out in **Figure 3.9** shows that the Airport was essentially an import point for fresh produce (91% of total tonnage in 2012). This is a time critical market with associated high yields (hence allowing freighter operations) but also one that is dominated by Heathrow through its perishables hub and its bellyhold capacity to Africa. It is unlikely that Heathrow would shed significant amounts of this traffic with cargo constraints and certainly it would likely gain market share once the third runway is opened. Heathrow remains better located for the distribution of this produce to the core London market given its location inside the M25.

Figure 3.9: Air Cargo at Manston by Commodity Type in 2012 (tonnes)



Source: York Aviation analysis of Stone Hill Park data

3.37 It should also be remembered that this assessment assumes that Stansted does not accelerate its cargo development plans to meet any excess demand that is suitable for freighter activity. Indeed, we understand that the perishables activity that used to use Manston has shifted back to Stansted and that the operation at Manston was supported by low charges to the airline to compensate for the less attractive location.

Specific Air Cargo Market Forecasts for Manston Airport

3.38 Building on the analysis above, we have considered three scenarios for future cargo growth at Manston Airport. In each case, we have considered the likelihood of the scenario coming forward. It should be noted that, in the air transport market, demand is the driver of airport usage not capacity. Provision of capacity at Manston is no guarantee that airlines, shippers and passengers will use it unless there is demand and Manston represents the most efficient way for that demand to be met.

Scenario 1: Relief for Capacity Constraints in London (Highly Optimistic and very unlikely)

3.39 In this scenario, we have assumed that Manston is able to capture the excess demand that is seen in the London system in the medium term when only Freighter Business As Usual capacity is considered. It is then able to maintain its market share into the long term, even once the excess demand has disappeared with the appearance of the third runway.

3.40 We ultimately regard this scenario as highly optimistic and very unlikely to occur. We do not believe that the nature of excess demand is likely to suit freighter operations. This fits with the current market, where Heathrow is almost certainly constrained in terms of its ability to offer bellyhold capacity and yet there remains significant freighter capacity elsewhere and there has been no upturn in the demand for air freighter operations. We also feel it is highly unlikely that Manston could maintain market share in the context of the opening of a third runway at Heathrow. Even in the absence of a third runway, pure freighter capacity at Manston is not likely to be attractive for most of the freight displaced which would still choose cheaper bellyhold capacity available elsewhere in the UK and Europe.

3.41 We consider this scenario to be an upper bound to the envelope for Manston Airport. Even in this scenario, forecast tonnage only reaches around 105,000 tonnes by 2040 or around 4,470 cargo aircraft movements. The estimate of aircraft movements assumes loads similar to that of Manchester Airport's current freighter operations, growing by around 1.1% per annum. This appears to be a relatively low loading compared to Manston's previous operations[49] (hence providing a higher ATM number for any given tonnage and thus likely to overstate the number of movements).

3.42 We note that Azimuth have assumed an even lower tonnage per cargo air transport movement of under 20 tonnes, so leading to an overstatement of the number of aircraft movement at any predicted tonnage, but this does not appear realistic based on Manston's past operations nor tonnages seen elsewhere.

[49] We estimate that the number of tonnes per cargo ATM previously at Manston was 35-40 tonnes, taking into account empty aircraft backhauls.

Scenario 2: Manston Achieves Its Previous Market Share (More Likely but still with optimistic elements)

3.43 This scenario assumes that Manston essentially re-enters the market as a niche player in the key markets that it served previously, mainly fresh produce. This reflects the view that, in reality, very little has changed in the market compared to when Manston was last operational, not least that Heathrow was already suffering from runway capacity issues prior to 2014. There are no major changes that we would consider sufficient to alter Manston's attractiveness fundamentally compared to 2014. We note Azimuth's contention that Brexit will make trucking to Europe more difficult but would point out that the freight involved is most likely to be general air cargo heading for bellyhold capacity that is relatively less sensitive to time and that additional regulatory burdens are likely to be found at airports as well post Brexit. Hence, the impact on relative transit times may actually be comparatively limited. Furthermore, it is far from clear to us, from the evidence presented by Azimuth, that there were concerns regarding the quality of service offered at Manston historically sufficient to have constrained its share of the market in the past. Hence, it is not unreasonable to start from a position that its past market share was representative of what it might attain in future and that the provision of more infrastructure would not give rise to a change in the market or a higher level of underlying demand.

3.44 We regard this as the most likely of our three scenarios but it also has optimistic elements. Notably, it is highly optimistic to assume that Manston will be able to maintain market share in the face of expanded capacity at Heathrow. We would also note that the Airport was not viable at similar demand levels previously and would appear to have only been able to reach its recorded market share by 'buying' traffic through very low airport charges based on our discussions with SHP and its staff that worked at the Airport when operational. In this scenario, the Airport reaches around 47,000 tonnes by 2040 and around 2,000 cargo aircraft movements.

Scenario 3: Relief for Capacity Constraints in London (More Realistic but still with some optimism)

3.45 Scenario 3 is a variant of Scenario 1 that takes a more realistic view on how the limited excess demand in London in the medium term (allowing for pure freighter Business as Usual activities only) might be served. We would view this scenario as substantially more realistic than Scenario 1 but still with highly optimistic elements.

3.46 In this scenario, the excess demand is split as follows:

- 50% is assumed to be to diverted via truck to make use of bellyhold capacity at UK regional airports or at the continental hubs in Europe. This reflects the view that, in the majority of cases, this freight is likely to be relatively price sensitive, less time critical general air cargo for which pure freighters are not likely to be an appropriate substitute;
- the remainder is assumed to be split evenly between East Midlands, Stansted and Manston airports. This is, again, probably an optimistic assumption given the economies of scale and better proximity to markets overall offered by the other two airports compared with Manston.

3.47 Once the excess demand in London has peaked (just before the opening of a third runway), Manston is assumed to be able to maintain its market share into the future. This is again an optimistic assumption given what will be an excess of capacity in the market for much of the following period through to 2040. This scenario involves the lowest cargo throughput of the three options. By 2040, the Airport is handling only 17,500 tonnes of freight and handling around 750 aircraft movements each year.

Summary of Cargo Forecast Scenarios

3.48 The cargo tonnage and freighter ATMs associated with each of the three scenarios are set out below in **Table 3.1**.

Table 3.1: Summary of Manston Cargo Forecast Scenarios						
	Scenario 1: Relief for London (Highly Optimistic)		Scenario 2: Previous Market Share		Scenario 3: Relief for London (More Realistic)	
	Tonnes	ATMs	Tonnes	ATMs	Tonnes	ATMs
2020	7,608	402	30,359	1,605	1,268	67
2021	18,407	963	30,966	1,619	3,068	160
2022	31,758	1,643	31,616	1,635	5,293	274
2023	45,571	2,332	32,280	1,652	7,595	389
2024	59,860	3,029	32,958	1,668	9,977	505
2025	74,638	3,736	33,650	1,684	12,440	623
2026	76,205	3,773	34,357	1,701	12,701	629
2027	77,958	3,818	35,147	1,721	12,993	636
2028	79,751	3,863	35,956	1,742	13,292	644
2029	81,585	3,909	36,782	1,762	13,598	651
2030	83,462	3,955	37,628	1,783	13,910	659
2031	85,381	4,002	38,494	1,804	14,230	667
2032	87,345	4,050	39,379	1,826	14,557	675
2033	89,354	4,098	40,285	1,848	14,892	683
2034	91,409	4,147	41,212	1,869	15,235	691
2035	93,511	4,196	42,159	1,892	15,585	699
2036	95,662	4,246	43,129	1,914	15,944	708
2037	97,958	4,300	44,164	1,939	16,326	717
2038	100,309	4,355	45,224	1,964	16,718	726
2039	102,716	4,411	46,310	1,989	17,119	735
2040	105,182	4,468	47,421	2,014	17,530	745
Source: York Aviation						

3.49 Our updated analysis of the market and specific consideration of three potential scenarios for freighter growth at Manston Airport demonstrate that, even on the most optimistic assumptions, it is not likely to generate above 4,470 annual movements by air cargo aircraft. On a more realistic basis, it might attain similar levels of tonnage as seen in 2003 by 2040 but with a higher number of aircraft movements due to the assumption we have made that freighter loads would be similar to those seen elsewhere in the UK rather than the higher loads actually observed at Manston in the past. On past performance, the number of movements at Manston might well be lower. **None** of our scenarios suggest that there is a need to increase the capability of Manston Airport given our assessment in Section 4.

4 CAPABILITY OF THE SITE

4.1 Our start point for this assessment is the capability of the Airport site based on its historic and consented planning status and on the basis that the existing infrastructure could all be 'made good'. This assessment is based on the existing Lawful Use in planning terms. The existing Airport's permitted use is for civil aerodrome use, and there are no conditions limiting either passenger numbers or ATMs.

Capacity of Existing Facilities

4.2 In the first instance, it is important to highlight that Manston Airport did not operate under any form of restriction on the number of aircraft movements. The planning agreement between TDC and Manston Airport, which governed the permitted activity of the Airport, was entered into in 2000. In respect of night-time flying it sets out the limitations on such operations until a "Night-time Flying Noise Policy" is in place. Clause 1.1 of the Second Schedule states:

"The Owner agrees not to cause suffer or permit any Regular Night Flying Operations at any time (subject to Paragraph 1.4 below) before a Night-time Flying Noise Policy shall have been prepared and a copy lodged with the Council."

Further, it defines:

"Regular Night Flying Operation means Flight movements which are scheduled or programmed and which occur frequently or regularly to the same or similar patterns for the same operator during Night-time"

4.3 It is understood that the Night-time was defined as 23.00-07.00, though Manston Airport was also seeking a Night Quota Period which would have run from 23.30-06.00. In practice, there were a number of night movements which were deemed to be ad-hoc and often driven by technical delays but that were permitted to operate in any event.

4.4 We have assessed the capability of the existing infrastructure at Manston Airport assuming that the range of existing facilities, as at the time of its closure, are made good. There are three principal elements – runway, passenger and freight:

- **Runway:** for the handling of commercial passenger and freight aircraft, the runway would operate without a parallel taxiway. The current marked parallel taxiway is too close to the runway centreline to allow such aircraft to taxi independently of a runway movement. Landing and departing flights would then need to back track along the runway to and from the entry/exit taxiways. The achievable maximum runway rate with this operation might be around 20 to 24 flights per hour depending on the mix of aircraft types. This runway movement rate, even at 50% utilisation of available slots, would be capable of accommodating around 64,000 aircraft movements a year. However, we recognise that this is in excess of the capability of the passenger and freight handling facilities as existing.

- **Passenger:** the passenger apron has been designed to accommodate 4 E-Jet FK100 passenger aircraft. These aircraft types are now rare and have a wingspan that is much less, at 28 metres, than the typical low fares airline Code C type aircraft that Ryanair, easyJet and Wizzair, for example, use. These airlines typically use aircraft such as the B737-800 and A320, with wingspans of 36 metres. On this basis, the passenger apron would be able to accommodate up to 3 of these larger Code C aircraft simultaneously and could, in the alternative, be used for handling cargo flights. The terminal itself is quite compact and would have a maximum of 6 check-in desks and very small baggage make up area, and a departure lounge that could depart a maximum of 2 flights within the same 30 to 40-minute period, with an hourly capacity in total of around 250 passengers. There are more than 1,000 car parking spaces. We estimate that the passenger terminal at its current size could support around 0.7 to 0.9 mppa based on there being up to two based Code C aircraft with a reasonable number of other visiting flights across a typical day.
- **Freight:** the aircraft parking area close to the freight sheds can park up to 2 or 3 small to medium sized cargo aircraft or one large aircraft. There are two freight sheds that were originally organised to be used one for imported freight and one for export. Adjacent to these is an 'equine' handling facility for processing livestock. In practice Manston, when operational, normally handled one large freight aircraft at a time due to size and juxtaposition of the freight sheds and apron to each other and the single taxiway connecting to the runway. Whilst Manston handled up to 30,000 tonnes of freight at its peak, our understanding is that the freight facilities could have handled substantially more tonnage.

4.5 Our assessment into the capability of Manston Airport is based on the reinstatement of the runway, air traffic control, fire station, navigational aids, apron (stands) and taxiways. We have taken into account the use of both apron areas, one to the west adjacent to the cargo sheds and one to the east, adjacent to the passenger terminal. These could accommodate collectively up to 4 freight aircraft simultaneously. The assessment is also based on an 18-hour operational day (allowing for a small number of ad hoc night movements consistent with previous operations) and with a turnaround window of up to 2½ hours from the arrival to departure of each freight aircraft resulting in the capability of each stand to handle over 7 aircraft rotations a day, or over 14 cargo aircraft movements.

4.6 On this basis, across a year, this would equate to a capability for at least 21,000[50] annual air cargo aircraft movements with the existing consented infrastructure, subject only to reinstatement. This assessment is consistent with the assertion made in presentations on behalf of RSP[51], which stated that the 10,000 cargo aircraft movement threshold, necessary to pass the Section 23 test in the Planning Act 2008 (as amended), could be met by providing for 14 aircraft arrivals and 14 aircraft departures each day. As the existing infrastructure could provide for 4 cargo aircraft being handled simultaneously, this would equate to 20,440 annual air transport movements by cargo aircraft. This would be more than sufficient to accommodate any reasonable forecast of the cargo related movement demand that Manston might attract as we have set out in Section 3.

[50] Should a night time noise policy be agreed with Thanet District Council pursuant to the existing planning agreement that enabled a longer operational day and/or a number of scheduled night movements, then the capability could, in theory, be higher than 21,000 annual cargo aircraft movements.
[51] RSP, Presentations for Thanet District, Dover District, and Canterbury City Councils

4.7 We recognise that the actual usage of that capability will depend on how an airport is used in terms of the daily and seasonal pattern of movements but this does not, of itself, reduce the capability offered by the existing consented infrastructure for air transport movements. Our assessment, therefore, provides essential missing information from RSP's materials to date which is necessary for the purposes of section 23 of the Planning Act 2008 (as amended), for assessment purposes under the Environmental Impact Assessment Regulations and for consultation purposes.

Land Required to accommodate RSP's Forecasts

The RSP Master Plan

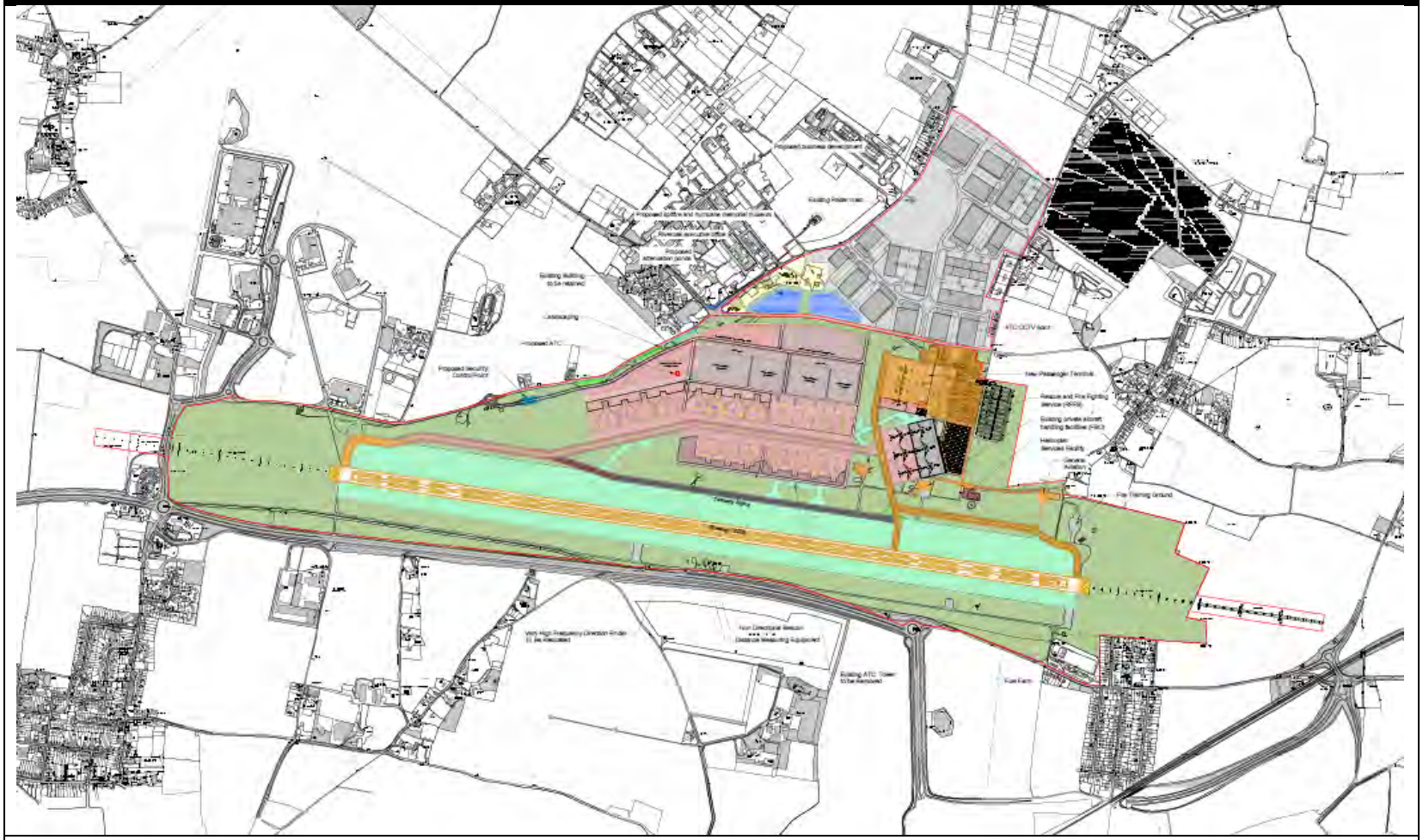
4.8 The Master Plan presented by RSP for the Manston Airport site is shown at **Figure 4.1**. It makes use of the full length of the runway and provides a full length parallel taxiway. The western side of the site is dedicated to freight handling activity and has 19 Code E aircraft stands for cargo flights and 4 large cargo sheds for the processing of freight supported by truck loading and parking areas. The eastern side of the site shows as a new passenger terminal and apron along with a MRO hangar and apron. The existing private aircraft handling facility (FBO) and fire station site is retained. We are not entirely clear how such works would be phased, although we understand that 4 phases of development are planned. RSP projects that Manston will need to be able to handle 17,171 cargo related ATMs and that 1.4 mppa of passengers will be handled by 2039. These represent the basis for the proposed DCO application and we assume, therefore, that these will be the limits on the number of movements and passengers which the site would be capable of accommodating as these form the basis for the assessment of environmental and other impacts. However, this is unclear from the consultation documentation.

4.9 We are unclear why 19 Code E stands are proposed given that the fleet mix at 2039[52] shows 85% of aircraft (at 17,171 annual cargo aircraft movements) being by aircraft smaller than Code E dimensions. Even allowing for some larger Code F types (<2% of movements), it would be possible to reduce the area of apron required for the fleet mix proposed, leaving aside whether 19 stands are required for the simultaneous parking of cargo aircraft at any one time, which we discuss further below.

4.10 To the north of the site, on the 'Northern Grasslands', a new development is shown, which appears to consist of commercial sheds and factory buildings with no obvious connection to the operation of the Airport being located entirely on the landside of the B2050. We assume that RSP's intention is to lease out these landside commercial buildings on this northern site so as to provide a rental income to cross subsidise the operation of the Airport. We discuss the need for this land further below.

[52] Azimuth Volume III, Table 2.

Figure 4.1: RSP Masterplan – Proposed Site Layout



Source: RSP

Land Required

4.11 Without prejudice to our position that we do not consider that RSP's proposals are credible in terms of the level of demand that might be attracted to Manston, we do not consider that the scale of development proposed by RSP for 17,171 cargo related movements is necessary, justifiable or reasonable, based on the principles set out at paragraph 4.5 above.

4.12 At **Figure 4.2**, we illustrate the justifiable and reasonable extent of land required at Manston Airport to support a cargo operation of 17,171 ATMs and passenger operation of 1.4 mppa (even though we do not accept that these ATMs and passenger numbers can be reached). This is based on our experience of airport operations around the world.

4.13 We recognise that there could be an opportunity for maintenance hangars for heavier aircraft maintenance activities but the need for these will not necessarily be triggered by the establishment of passenger operations. Depending on the nature of the freight and passenger carriers that set up services at Manston, the need for maintenance hangars cannot be ruled out and we have allowed for one twin bay hangar with a footprint of approximately 6,000m2 or two single bay hangars at 3,000m2 each.

4.14 It is also reasonable to expect that there will be some business and some general aviation activity. However, unless a bespoke FBO is set up, which we believe is unlikely given the distance from the main business aviation market in London and with Biggin Hill much closer to the core market, there would be very limited use by business aviation. Any small general aviation or flying school activity can be accommodated within the land area shown. These facilities, and any aircraft dismantling activity as also suggested in Azimuth's forecasts, would need to have direct airside access and so would need to be located to the south of the B2050. In other words, all of the operational facilities to support the operation of the Airport would require to be located to the south of the road and not on the 'Northern Grasslands' site.

4.15 We have clearly marked the area of land to the south of the B2050 that is not required for the defined airport operations in green on Figure 4.2. To the north of the Airport site, the 'Northern Grasslands' are marked in yellow and is not required for the scale of airport activity proposed by RSP. We discuss the potential use of this area further below. Figure 5.2 clearly shows that the extent of airport land needed to support the scale of freight and passenger activity proposed by RSP is significantly less than that proposed by the RSP. There are surplus areas of land within the core airport site as well as the 'Northern Grasslands' that are not required to support the throughput proposed.

Figure 4.2: Airport Land for 17,121 Freight ATMs and 1.4 mppa Operation – Surplus Land: Airport Land (Green), Northern Grasslands (Yellow)

Source: York Aviation

4.16 We summarise at **Table 4.2**, those facilities proposed by RSP in its Master Plan but are not, in fact, required to support essential airport operations.

Table 4.2: Classification of RSP Proposed Airport Facilities at Manston Airport

	RSP proposed airport-related development	Facilities not Essential for an Operational Cargo Airport
4	Retention & Extension of Passenger Apron	✓
11	New replacement Passenger Terminal building	✓
12	New and extended passenger car parking areas	✓
23	Relocation of the two existing museums	✓
24	Demolish old Control Tower in northern area	✓
25	Airport related businesses on Northern Grasslands	✓
26	New MRO aircraft maintenance hangars	✓
27	New FBO in refurbished business aviation terminal	✓

4.17 Although a replacement radar is shown by RSP re-using the old radar tower within the 'Northern Grasslands' area, it is not clear that a replacement radar would actually be required, although a radar service would be required. It is likely that a radar service could be procured more cheaply by buying in radar coverage from an alternative radar position rather than re-providing a radar on site. This is increasingly common practice at smaller airports. In the event that a replacement radar was required, this would not need to be located on the 'Northern Grasslands' but could be located within the airfield site to the south of the B2050.

4.18 In terms of the use of the 'Northern Grasslands', there is no particular requirement for extensive freight forwarding facilities on site as consolidation of loads is likely to continue to take place in and around Heathrow as currently. Any freight forwarding activity directly to support 17,171 cargo aircraft movements is likely to be containable within the area shown for freight warehousing within the airfield site.

4.19 No other justification is given for the extent of the commercial development shown on the 'Northern Grassland' part of the site. In our view, it is certainly not 'associated development' required to support the operational airport, other than in terms of providing a financial cross subsidy from rental income for general commercial buildings.

4.20 The need, then, for such an extensive development across the 'Northern Grasslands' cannot, in our opinion, be justified and is substantially in excess of what is seen elsewhere. The scale of supporting infrastructure proposed appears substantially greater than exists at the UK's main pure freight hub at East Midlands. We have seen no reasoned justification for the scale of facilities proposed. It appears to cover an area (c.48 hectares), which is more than double the size of the associated Pegasus Business Park area at East Midlands Airport (c.21 hectares), which currently handles virtually the same cargo tonnage as projected by Azimuth for Manston at 2039. Furthermore, it is significant that a substantial part of the East Midlands area is occupied by hotel development (3 hotels) in support of the much greater passenger throughput at that airport, a Regus office complex, and many of the other occupiers of sites within the Pegasus Business Park are not related to the activity at the Airport and include companies such as PwC, Laser Optical Engineering, Nikon Metrology UK, Medstrom Healthcare, Rail Vision and PKF Cooper Parry making use of an accessible location close to the M1. None of these activities would be essential in relation to freight activity at the airport and so would not meet the test for associated development required for inclusion with a DCO.

Realistic Requirements

4.21 Clearly, as is evident from earlier sections of this report, our opinion is that RSP's projections for the use of Manston Airport cannot be realised. Hence, the area of land required to accommodate lower levels of activity would be proportionately smaller, occupying a substantially smaller area of land to the south of the B2050 than shown on Figure 4.2.

Conclusions on Capability

4.22 The existing infrastructure at Manston Airport, if made good, would be capable of handling 21,000 annual air cargo transport movements[53]. However, the actual usage of that capability would depend on the pattern of operation and how the infrastructure was used on a day by day basis.

4.23 Without prejudice to our view that demand to use Manston is not likely to be anything like 17,171 cargo aircraft movements a year, we consider that the land required to accommodate such a number of movements would be substantially less than shown on the RSP Master Plan.

4.24 We can see no justification for the inclusion of the 'Northern Grasslands' within the DCO as associated development as there will be little requirement for the relocation of freight forwarding activity from adjacent to the UK's main cargo hub at Heathrow to Manston and any requirement could be accommodated south of the B2050. The development on the Northern Grasslands site appears to be speculative commercial development which, based on the precedent at East Midlands Airport – the UK's principal airport for pure freighter operations – would be expected to be largely for non-aviation related uses.

[53] Based on an 18-hour operational day. Should a night time noise policy be agreed with Thanet District Council pursuant to the existing planning agreement that enabled a longer operational day and/or a number of scheduled night movements, then the capability could, in theory, be higher than 21,000 annual cargo aircraft movements.

5 SOCIO-ECONOMIC IMPACT

Introduction

5.1 In this section, we examine the socio-economic benefits that are put forward by Azimuth and the flaws that are apparent in their approach. These render the socio-economic case put forward unreliable. We then move on to provide our own estimates of the socio-economic impacts of Azimuth's traffic forecasts based on more appropriate assumptions and also set out the socio-economic impacts associated with our own traffic forecasts to provide a more reasonable basis for considering the extent of the benefits that might realistically accrue from the re-opening of the Airport.

Comments on Azimuth Socio-Economic Assessment

5.2 Volume IV of the Azimuth's Report sets out the socio-economic case for the DCO for Manston. This assessment naturally relies on the traffic forecasts presented in Volume III. This means, of course, that the socio-economic assessment is rendered unreliable by the failings of the traffic forecasting approach and the incorrect inferences drawn from the assessment of the market. However, there are also substantial failings in relation to the methodology used for the socio-economic impact assessment itself, which result in significant over estimates of the impacts. We would also re-emphasise that the Airport must be commercially viable to be able to deliver these benefits, otherwise it will simply fail and no level of benefit will be delivered. RSP has not clearly demonstrated that the operation of the Airport would be viable at any level of throughput and, in the light of the conclusions of Aviasolutions in their advice to Thanet (see Section 6 of this report), viability must be in serious doubt based on our analysis of the likely usage as set out in Section 3. This renders any analysis of the socio-economic impacts to a large extent moot. Setting aside the issue that the Airport is highly unlikely to be viable and that the traffic forecasts set out are significantly overstated, we have identified below a number of key flaws in Azimuth's approach and analysis of the economic impacts.

5.3 At the outset, it is probably helpful to highlight the key area in which we agree with Azimuth's analysis and conclusions. We agree that the East Kent area is in need of regeneration. It is simply that we do not believe that Manston Airport can deliver the benefits set out. Any attempt to re-open the Airport is not likely to succeed as it is hard to see that viability could be attained with realistic forecasts of usage. Another failure of the Airport would be more likely to damage the image of Kent as a place to invest than enhance it.

5.4 Azimuth spend some time considering the appropriate employment density on which to base an assessment of direct employment. They ultimately conclude that East Midlands Airport provides an appropriate comparator (see paragraph 4.1.4 of Volume IV). This information is then used to drive large parts of the benefit calculations for Manston. York Aviation provides economic impact advice to MAG in relation to both its major freight airports, East Midlands and Stansted. From this knowledge, we would suggest that the job numbers quoted and used here are an incorrect base as they include substantial numbers of non-airport related jobs located on the business park at East Midlands Airport, discussed in the previous section. This means that the employment density used by Azimuth is far too high for genuine airport related activity. In any event, the employment at East Midlands is higher than might be anticipated anyway given the very significant employment supported at the site by DHL's UK main base of operations, which is not likely to be replicated at Manston.

5.5 We accept that it is difficult to identify an ideal comparator for a re-opened Manston in the UK but would suggest that an airport such as Glasgow Prestwick would be a much more appropriate comparator. The Airport has a low fares operation by Ryanair and has a reasonably significant pure freighter operation (although this has been substantially larger in the past). There is also detailed information on the economic impact of that airport in the public domain from work undertaken by both York Aviation[54] and SQW[55]. We have used information from this research later in this section to provide a more realistic base for assessing the economic impact of Manston.

5.6 The multipliers used by Azimuth for indirect and induced employment and economic activity in their assessment are simply inappropriate. Firstly, the multipliers adopted are for the impact at a national level. The study area for this economic assessment and the focus of Azimuth's comments is the sub-region around Manston Airport. Multipliers appropriate to this much smaller area should have been used and would have been substantially smaller. Secondly, the multiplier used (2.1) is a European average taken from research by InterVISTAS for ACI EUROPE[56]. The adoption of this Europe-wide multiplier is strange given that that the research does actually provide a specific multiplier for the UK[57], which is substantially smaller at 1.5. Use of the appropriate multiplier would, of course, have significantly reduced the job impacts suggested, even at a national scale.

5.7 There is a further issue in relation to the use of an inappropriate multiplier covering national level effects in that displacement of activity from other airports should have been taken into account. To the extent that any of the activity projected for Manston is displaced from other airports, as our analysis strongly suggests it will be, there will be a relative reduction in employment and economic activity in the vicinity of these other airports. So whilst, correctly calculated, the employment and economic effects local to Manston would be additional, the effect of displacement of activity would need to be netted off wider national or regional (South East) impact assessments.

[54] The Economic Impact of Glasgow Prestwick Airport – York Aviation (2012). http://www.evaluationsonline.org.uk/evaluations/Search.do?ui=basic&action=show&id=509
[55] Economic Impact of Glasgow Prestwick Airport – SQW (2008). http://www.sqw.co.uk/files/4413/8712/8925/99.pdf.
[56] The Economic Impact of European Airports – InterVISTAS for ACI Europe (2015).
[57] Ibid. Page 103.

5.8 As well as using a multiplier for indirect and induced impacts, a multiplier is used to assess the wider catalytic employment[58]. The multiplier used is taken from out of date research for ICAO[59] and it should be said that catalytic impacts remain a difficult area in terms of quantification. There is not sufficient detail in the ICAO report[60] that Azimuth rely on to understand how this catalytic multiplier has been derived. However, again, there are issues with the use of this multiplier. Firstly, it appears to be a global multiplier, which would again be completely inappropriate for use in considering sub-regional impacts around Manston and it has been wrongly applied to total job numbers rather than direct job numbers. In practice, the correct approach would have been to consider the specific additional connectivity that Manston Airport might provide for Kent and assess how this might relate to attracting additional business activity and tourism to the area.

5.9 In examining the employment projections presented (Section 5.1 of Volume IV), it appears that no allowance has been made for either productivity growth or returns to scale over time and as the Airport grows. While information on potential on-site productivity growth can be hard to come by, we would expect some allowance to have been made. A typical figure might be around 2% per annum based on our experience at other airports. The result of this omission is that future direct job numbers, in particular, are likely to be significantly overstated given the compounding effect of failing to account for productivity growth.

5.10 Section 7 of Volume IV discusses other socio-economic impacts. In particular, it talks about contributions to GDP. Para 7.1.1 describes GDP as *"a monetary measure of the state of a Region's or a Country's economy"*. This is not correct. It is a measure of the size of the economy. It does not comment on the state of the economy or the prosperity or wealth within it. The calculations of GDP impacts presented are based on the job numbers estimated earlier in the report. They are, therefore, likely to be significant overestimates given the flaws in the demand forecast method and the job density and multiplier assumptions.

5.11 The comments in Paragraph 7.1.7 describing how Manston could contribute significantly to Thanet's Economic Growth Strategy aspirations in terms of GVA per job and per capita are, in reality, unsupported. Given the methodology adopted, which essentially measures Manston's impact at a national level, it is actually very difficult to know what the effect might be on the Thanet economy. Undoubtedly, the Airport could support local jobs if it is re-opened but, in reality, the number of those jobs and their value has not been effectively calculated here. The aviation supply chain in the UK is heavily concentrated around the major airports, particularly in relation to air cargo. So, in practice, much of the economic benefit claimed would be realised in and around Heathrow rather than locally if Manston were to re-open. To the extent that any activity would be displaced to Manston, there would be negative economic implications elsewhere.

[58] Catalytic employment is related to additional economic activity generated in areas adjacent to an airport as a result of the additional connectivity offered by the airport.
[59] ICAO – International Civil Aviation Organisation, which is the inter-governmental body which regulates air transport globally.
[60] ICAO – Economic contribution of civil aviation: Ripples of prosperity, 2000.

The Socio-Economic Impact of the Azimuth Traffic Forecasts

5.12 Below, we have set out an estimate of the socio-economic impacts of the Azimuth traffic forecasts using more appropriate assumptions. We have retained the same basic analytical framework, which considers direct, indirect, induced and catalytic impacts, but we have used different basic assumptions in all areas:

- we have estimated the direct employment associated with the re-opening of the Airport based on employment densities observed at Glasgow Prestwick Airport during the production of our 2012 report for Scottish Enterprise[61]. This includes considering which elements of on-site employment are likely to be driven by passenger growth and which by cargo growth. Given the slightly differing approach, it is hard to provide a perfect comparison of job density. However, in Year 3, when both cargo and passenger operations begin, the York Aviation job density is around 650 jobs per million workload units, compared to around 890 assumed by Azimuth;
- we have used an indirect and induced multiplier for Kent of 0.4[62]. This is again taken from our work on Prestwick and reflects impacts of that airport in the Ayrshire economy, which would seem a sensible comparator. This multiplier is also in line with the benchmark multipliers set out in the Homes and Communities Agency Additionality Guide (2014)[63]. At this level, displacement affects do not need to be accounted for albeit they would still arise to the extent that activity at Manston displaces activity elsewhere;
- we have used catalytic multipliers for air freight taken from Steer Davies & Gleave's report on the UK Air Freight Industry for the DfT[64]. This identified national level catalytic multipliers for air freight of 3.46 and 3.76 (inclusive of the direct impact). There is no simple way to adjust these multipliers to the Kent economy. We have, therefore, reduced these multipliers by 75%. This is broadly akin the difference between sub-regional and national level multipliers for indirect and induced effects. As with all estimates of catalytic impacts, these should be regarded with some caution in the absence of a more detailed and specific assessment of the potential effects;
- we have assumed productivity growth at Manston Airport of around 2% per annum. This is typical of our experience of productivity growth rates at UK airports;
- in order to estimate the GVA impacts of the re-opening of the Airport, we have used GVA per job estimates from ONS for Kent. On-site jobs are assumed to generate GVA in line with the Transportation & Storage sector (£57,763), while jobs in the wider economy are assumed to reflect the average GVA per job for Kent (£52,623).

5.13 In **Tables 5.1** and **5.2**, we have set out our estimates of the socio-economic impact of the Azimuth traffic forecasts compared to the original estimates produced by Azimuth.

[61] *The Economic Impact of Glasgow Prestwick Airport* – York Aviation (2012).
[62] Note that this excludes the initial direct effect.
[63] See page 36.
[64] *AIR FREIGHT Economic and Environmental Drivers and Impacts* – Steer Davies and Gleave for DfT (2010). Page 106.

Table 5.1: Employment Impact of Manston Airport – YAL Socio-Economic Assumptions Comparison					
	Y2	**Y5**	**Y10**	**Y15**	**Y20**
Azimuth Impact Assumptions with Azimuth's freight + passenger forecast					
Direct	856	2,150	2,749	3,438	4,271
Indirect & Induced	1,798	4,515	5,773	7,220	8,970
Catalytic/Wider	0	8,601	10,996	13,753	17,085
Total	**2,654**	**15,266**	**19,518**	**24,411**	**30,326**
YAL Impact Assumptions with Azimuth's freight + passenger forecast					
Direct	688	1,555	1,791	2,033	2,291
Indirect & Induced	275	622	716	813	917
Catalytic/Wider	475	1,073	1,236	1,403	1,581
Total	**1,439**	**3,250**	**3,743**	**4,249**	**4,789**
YAL Total as % of Azimuth	**54%**	**21%**	**19%**	**17%**	**16%**
Source: York Aviation and Azimuth Associates					

Table 5.2: Gross Value Added Impact (£ million) – YAL Socio-Economic Assumptions Comparison					
	Y2	**Y5**	**Y10**	**Y15**	**Y20**
Azimuth Impact Assumptions with Azimuth's freight + passenger forecast					
Direct	£43	£108	£138	£173	£215
Indirect & Induced	£78	£195	£250	£312	£388
Catalytic/Wider	£0	£391	£499	£625	£776
Total	**£121**	**£694**	**£887**	**£1,110**	**£1,379**
YAL Impact Assumptions with Azimuth's freight + passenger forecast					
Direct	£41	£99	£126	£158	£197
Indirect & Induced	£15	£36	£46	£58	£72
Catalytic/Wider	£25	£61	£78	£97	£121
Total	**£82**	**£196**	**£250**	**£313**	**£389**
YAL Total as % of Azimuth	**68%**	**28%**	**28%**	**28%**	**28%**
Source: York Aviation and Azimuth Associates					

5.14 The differences between the two sets of estimates are marked. Our assumptions result in economic impacts being around a half to two thirds of those estimated by Azimuth initially. However, the gap widens over time as the impact of Azimuth's failure to allow for productivity growth and high multiplier assumptions feed through. In our view, the Azimuth estimates simply cannot be relied upon as a measure of the potential economic impacts of re-opening of Manston Airport. Not only are they infected by the errors in traffic forecasting, but the approach itself is highly flawed. A more realistic and robust assessment suggests that the local impacts within Kent, even on Azimuth's forecasts, would be substantially less than claimed and it is these lower order effects which would need to be balanced with the environmental and impacts in assessing the acceptability of the proposed development, including the loss of SHP's proposed mixed use development and the socio-economic benefits deriving therefrom.

A More Realistic View of the Socio-Economic Impacts of Manston

5.15 As we have described above, the socio-economic assessment undertaken by Azimuth was destined to fail before it started because of the failings in the traffic forecasts that feed the approach. We do not consider there is any realistic prospect of the Airport attaining 10,000 annual movements by cargo aircraft and the build up of traffic would be materially slower than Azimuth estimate.

5.16 We have, therefore, set out below an assessment of the socio-economic benefits that might be associated with re-opening Manston on the basis of York Aviation's most likely cargo forecast (that Manston is able to regain its previous market share) and our passenger forecasts, which are around half those assumed by Azimuth. Once again, we have used our socio-economic impact assumptions as described above. The resulting employment and GVA impacts are again set out compared to Azimuth's assessment of the economic impact of reopening Manston in **Tables 5.3** and **5.4**.

Table 5.3: Employment Impact of Manston Airport – YAL Forecasts Comparison

	Y2	Y5	Y10	Y15	Y20
Azimuth Impact Assumptions with Azimuth's freight + passenger forecast					
Direct	856	2,150	2,749	3,438	4,271
Indirect & Induced	1,798	4,515	5,773	7,220	8,970
Catalytic/Wider	0	8,601	10,996	13,753	17,085
Total	**2,654**	**15,266**	**19,518**	**24,411**	**30,326**
YAL Impact Assumptions with YAL's freight + passenger forecast					
Direct	216	391	409	442	486
Indirect & Induced	87	156	164	177	194
Catalytic/Wider	149	270	283	305	335
Total	**452**	**817**	**856**	**925**	**1,015**
YAL Total as % of Azimuth	**17%**	**5%**	**4%**	**4%**	**3%**

Source: York Aviation and Azimuth Associates

Table 5.4: Gross Value Added Impact (£ million) – YAL Forecasts Comparison

	Y2	Y5	Y10	Y15	Y20
Azimuth Impact Assumptions with Azimuth's freight + passenger forecast					
Direct	£43	£108	£138	£173	£215
Indirect & Induced	£78	£195	£250	£312	£388
Catalytic/Wider	£0	£391	£499	£625	£776
Total	**£121**	**£694**	**£887**	**£1,110**	**£1,379**
YAL Impact Assumptions with YAL's freight + passenger forecast					
Direct	£13	£25	£29	£34	£42
Indirect & Induced	£5	£9	£11	£13	£15
Catalytic/Wider	£8	£15	£18	£21	£26
Total	**£26**	**£49**	**£57**	**£68**	**£83**
YAL Total as % of Azimuth	**21%**	**7%**	**6%**	**6%**	**6%**

Source: York Aviation and Azimuth Associates

5.17 Unsurprisingly, the socio-economic impacts associated with the Airport are reduced even further on the basis of more realistic forecasts. The operation is simply of a much smaller scale. In Year 2, in generates 452 jobs, only 17% of the Azimuth estimate of 2,654. By Year 20, the differential is even larger, with the Azimuth estimates reaching over 30,000 jobs, but with our estimates at only just over 1,000. More likely, the Airport would cease operating again due to the inability to attain viable operations. In these circumstances, it becomes a moot point as there would be no jobs and economic impact over the medium to long term.

Conclusion

5.18 Once again, the evidence presented by Azimuth on behalf of RSP cannot be relied upon. It is infected with the flaws in the traffic forecasting methodology identified previously but the approach to identifying socio-economic impacts is, in itself, badly flawed. The socio-economic impacts are, as a result, massively overstated and, in any event, would not be realised if the operation of the Airport is not commercially and financially viable.

6 PEER REVIEW OF OTHER REPORTS

6.1 In this section, we set out a brief review of other reports produced on the potential for a re-opened Manston Airport.

Aviasolutions for Thanet

Commercial Viability of Manston Airport – September 2016

6.2 We note that this assessment was focussed on the likely viability of a re-opened Manston Airport. Hence the main focus was on scenarios for passenger growth as passenger operations make a significantly greater financial contribution to operating an airport given the ability to earn revenue from retail, catering and car parking as well as direct revenue from airport charges (landing, aircraft parking, passenger fees and any cargo handling fees). We note that Avia took a much more optimistic view than we do of the scope for passenger overspill from the main London airports to Manston but, to an extent, these scenarios were designed to assess whether re-opening Manston would be commercially viable rather than to assess a realistic level of demand.

6.3 Having assessed the historical performance of Manston, Avia assumed that it would be possible for the Airport to regain the broad level of cargo activity that is was handling before it closed. This is not dissimilar to our 'most likely' assumption. Significantly, Avia noted that:

"Our freight interviews indicated that the demand to use the airport for freight was very limited. This, in large parts, is due to two factors; the infrastructure investments that have already been made by the industry around Heathrow and Stansted, and the geographical location of the airport. Infrastructure, and the associated knowledge, skill and supporting industry at airports such as Heathrow and Stansted, as well as the major European hubs such as Frankfurt, and Paris, would be almost impossible for Manston to replicate. The geographic location of the airport, tucked into the corner of the UK, cannot compete with airports such as East Midlands for Integrator services that are sold as fast delivery, due to the increases in surface transportation times. The interviews did however indicate that charter services and ad-hoc freighter flights would certainly return, providing some revenue income for the airport"[65].

This accords with our view of the most likely prospects for Manston.

6.4 Overall, the Avia 2016 work concluded that Manston was not likely to be a commercially viable prospect if re-opened, certainly if it is assumed that another runway would be built at either Heathrow or Gatwick. We concur with this conclusion and, on the basis of our more realistic assessment of the level of passenger demand that the Airport might attract, commercial viability is even less likely to be attained.

[65] Aviasolutions, *Commercial Viability of Manston Airport*, September 2016, Section 8.3.

Local Plan Representations - Final Report – August 2017

6.5 This report largely deals with individual specific representations one at a time. Overall, Avia conclude that their *"opinion, based on updated market information since the publication of our previous study, is consistent with our earlier view that Manston Airport does not represent a financially viable investment opportunity under normal market conditions."*[66]

6.6 In relation to these representations, Avia state clearly that:

"The Local Plan Representations do not make a credible case, nor provide the evidence for AviaSolutions' to change its views on the financial viability of Manston Airport. We remain of the view that whilst Heathrow Airport continues to offer substantial freight capacity to a truly global network, and Stansted Airport utilises only around half of the statutory provision of air freighter movements, the London air freight market has capacity to grow without the re-introduction of capacity at Manston Airport. Freight Forwarders have invested heavily in infrastructure around these core airports, carriers have developed their networks as such, and without clear value drivers that support relocating services to Manston Airport, the case remains to be made that demand exists for a freight facility at Manston Airport. This view is reinforced by the empirical evidence of multiple failed attempts to develop profitable operations at the airport."[67]

6.7 Again, Avia's analysis concurs with our own in terms of the limited role that there would be for a re-opened Manston Airport given the evolution of the air freight market. We concur with Avia's analysis of the potential for other activities at Manston such as business aviation or aircraft dismantling and note that, in our experience, income generation from such activities would be low.

6.8 We note that, in this report, Avia correctly interpret our work for the FTA in terms of the potential for the equivalent of 80,000 air freighter movements to be accommodated away from the main London airports by 2050 in the event of no new runway being constructed. As Avia note, this demand is likely to be accommodated at a variety of other airports, including Manchester and East Midlands, with the former offering a substantial amount of bellyhold capacity by that date and the latter offering a dedicated freighter service. Displacement to regional airports is also a logical response given the amount of cargo from the regions which is currently trucked to the London airports. We have had no dialogue with Avia regarding the interpretation of our work but their interpretation of it confirms that Azimuth have simply misused headline figures from our work to support RSP's case without considering or understanding the broader meaning of our analysis in 2015 as Avia demonstrate.

[66] Aviasolutions, *Local Plan Representations - Final Report*, August 2017, Executive Summary.
[67] Ibid.

Review of Azimuth and Northpoint Forecasts for Manston – August 2017

6.9 In this report, Avia conclude that the Azimuth and Northpoint forecasts are *"highly ambitious"* and that *"the likelihood of these forecasts being realised is very low"*[68]. Avia do not, themselves present any updated forecasts of their own in this report. They make clear that neither report presents *"a credible case"* sufficient for Avia to change its view on the likelihood of viable commercial operations being attained at Manston Airport.

6.10 Avia conclude that:

"We remain of the view that whilst Heathrow Airport continues to offer substantial freight capacity to an extensive global network, and Stansted Airport offers capacity for air freighter movements, the London air freight market has capacity to grow without the re-introduction of capacity at Manston Airport. Freight Forwarders have invested heavily in infrastructure around the UK's core cargo airports and carriers have developed their networks as such. Without clear value drivers that support relocating services to Manston Airport, the case remains to be made that demand exists for a freight facility at Manston Airport.

Provision of capacity alone is no guarantee of financial success, a view reinforced by the empirical evidence of multiple failed attempts to develop profitable aviation operations at Manston Airport."[69]

This accords with our view.

6.11 Like ourselves, Avia point out[70] that provision of infrastructure is not of itself sufficient to ensure a financially viable airport at Manston and that this will depend on the demand that can be attracted. Avia conclude, like ourselves, that *"Azimuth's report does not provide sufficient evidence of demand at Manston Airport from air freight operators to support the required investment in facilities and profit generation potential to re-establish Manston Airport as a going concern."*[71] Avia, like ourselves, highlight that if there had been a market for Manston to accommodate any overflow from Heathrow, this would have been evident prior to the Airport's closure in 2014. Avia also conclude[72], in relation to the extensive interviews carried out by Azimuth, that they largely address the overall issues of airport capacity in the South East of England and do not effectively explain why Manston, at the tip of Kent, would be an attractive solution for the UK air freight sector.

6.12 Avia also note that the other activities that Manston might attract, as suggested by interviewees, such as maintenance, repair and overhaul, aircraft dismantling, a fixed based operator for business aviation and the establishment of an integrator base could have been attracted previously if there was demand at Manston but that such demand was not evident. We concur that the reports of interviews set out by Azimuth do not constitute real evidence of actual demand for such facilities or the likelihood of them locating at Manston.

[68] Aviasolutions, *Review of Azimuth and Northpoint Forecasts for Manston*, August 2017, Executive Summary
[69] Ibid.
[70] Ibid, page 9.
[71] Ibid.
[72] Ibid, page 11.

6.13 Like ourselves, Avia point out that Azimuth's freight forecasts would suggest that Manston would be a major presence in the UK air freight market from Year 2[73] and that by the end of the period would be on a par with the UK's main freight hub at East Midlands by 2039. They go on to note that the methodology adopted by Azimuth to forecast cargo movements could be acceptable, which we take to mean a 'bottom up' movement driven approach. However, they caution that the primary data used (from the interviews) *"has significant potential to exaggerate or overstate the market"*[74]. As Avia note, the aspirations of the interviewees, that as we have noted earlier were largely local interests in Kent, would need to be tempered by commercial realism and the risks attaching to the operations put forward. Avia conclude, in relation to Azimuth's freight forecasts, that *"the probability of such an outcome remains very low"*[75]. We concur.

6.14 In overall terms, Avia conclude that there is nothing in the Azimuth analysis which would give rise to them changing the conclusions set out in their earlier 2016 report.[76]

6.15 Avia then go on to consider the Northpoint report, discussed further below, which was prepared as a direct rebuttal of their 2016 report. In the first instance, they note that they do not accept that the benchmark airports[77] cited by Northpoint as comparators for what Manston could be are relevant:

There are clearly structural and geographical reasons as to why each of these airports is different to the proposal for Manston Airport. As such, suggesting these are comparable benchmarks is not realistic. In order for Manston Airport to acquire the status of these airports it would need to demonstrate key elements of development, namely; commitments from key express players (DHL / UPS / FedEx / Amazon / Alibaba); an ability to operate night operations with few regulatory restrictions; and geographical advantages from nearby cities, industrial parks, and population centres.

We agree. These benchmark airports serve different roles, principally based around their selection by large integrators/distributors as main distribution hubs for large urban conurbations. These are simply not comparable to Manston and it would be misleading to believe otherwise.

[73] Ibid, Section 2.3.2.
[74] Ibid, Section 2.3.3.
[75] Ibid.
[76] Ibid, page 15.
[77] Alliance Fort Worth in Texas, USA, Hamilton Airport in Ontario, Canada, Bergamo in Italy, Liege in Belgium and Leipzig in Germany.

6.16 In relation to air freight forecasts, Avia again note RSP's reliance on our work for the Freight Transport Association. Again, Avia correctly interpret this work as being based on the assumption that *"freight growth is bellyhold focussed"* going on to note that our *"report also questions Boeing and Airbus' forecast growth rates, which are utilised in the long term growth forecast by Dr Dixon."*[78] Avia go on to note Northpoint's use of the 55,000 air cargo movements figure from our earlier work for Transport for London (2013) and cite Northpoint's claim that we asserted that Manston was the only realistic opportunity to accommodate this level of freighter movements if they were displaced. As we have discussed at length in Section 2, this is simply a misapplication of our 2013 work. Unsurprisingly, Avia could not find these figures in the 2015 report for the FTA.

6.17 Avia also highlight Northpoint's misinterpretation of the interaction between bellyhold and pure freighter demand. We agree with their conclusions in this regard, which explain why the market for more pure freighter operations to/from the UK is limited:

"AviaSolutions' experience in the freight industry is that many bellyhold operators can, when supply exceeds demand, reduce rates to such a level as to cover the marginal cost of freight plus a margin. The business is often operated as an addition to the passenger service, and therefore its real marginal costs are low. It is simply impossible for a freighter operator to reduce its rate to match this marginal cost and operate at profitably [SIC]*. Therefore, freighters tend to operate on thick routes where the economies of scale of a freighter operation can be realised. These routes are also curtailed by a non-related market, that of passenger demand. Where large scale passenger demand exists e.g. UK to USA, a residual effect of this is large scale freight capacity, which is unmatched to demand. The reverse can be seen on routes to the East, where passenger demand is less, but freight demand, particularly inbound to the UK, is high. As such, many freighters operate on these routings."*[79]

We agree that the extensive passenger based route network and the availability of bellyhold capacity limits the need for a substantial pure freighter operation to/from the UK, in contrast with other parts of the world where passenger air route networks are less developed. This is why global data on the demand for air freighters is simply not relevant in the UK context.

Northpoint

6.18 We have largely addressed key points of Northpoint's rebuttal of the original Aviasolutions work above on the basis of Avia's most recent report. We highlight here a few other key observations on Northpoint's *"The Shortcomings of the Avia Solutions Report and an Overview of RSP's Proposals for Airport Operation at Manston"* prepared for RSP.

6.19 As with Azimuth's work, the key criticism of this work is that it is based on assertion rather than evidence or systematic analysis of the potential market for Manston. As noted above, benchmark airports in the middle of Continental Europe or adjacent to major conurbations in the US and Canada do not provide robust examples of how Manston might develop given its geographic position. Northpoint set out that:

[78] Ibid, page 17.
[79] Ibid, Section 3.1.6.

"RSP's plans are centred on a developing a strategically important air cargo operation focused dedicated freighters importing and exporting a range of perishable and high-value/time-critical goods to markets in London and across the wider south-east." [80]

And that these operations would be supplemented by a *"modest"* passenger offering, a variety of business and general aviation activities as well as maintenance, repair, overhaul and aircraft dismantling activities. However, the report does not, itself set out how the scale of such activity could be assessed and whether it would, in combination, secure a viable operation.

6.20 In terms of forecasting the volume of air freight that Manston might secure, Northpoint make an unsubstantiated leap from noting the reasons why Heathrow is dominant in the market to asserting that the key determinant for pure freighter operations is the infrastructure provided at an airport and supply driven factors, noting that it is important that these latter are *"transparent"*[81]. We have already noted the lack of transparency in relation to the air cargo forecasts produced by Azimuth upon which RSP rely. Nor are the projections set out in Northpoint's Appendix A any more transparent in terms of how the estimated tonnage to be accommodated by freighter movements at Manston has been derived.

6.21 Although lacking transparency, it would appear that Northpoint, like Azimuth, have relied on Boeing's global forecasts for freight revenue tonne kilometres as a basis for projecting UK air cargo tonnage[82]. For the reasons set out in Section 2, this is inappropriate and will lead to a material overstatement of the overall market.

6.22 Like Azimuth, Northpoint see cross channel movement of air cargo as an opportunity for pure freighter operations at Manston[83] rather than simply the natural economic response to shortage of bellyhold capacity at Heathrow. Northpoint then seek to rely on our assessment of displaced tonnage equivalent to 55,000 annual movements by air cargo aircraft in 2050 from our 2013 work for TfL as corroborating evidence of Manston's potential[84]. This is to misrepresent the conclusions from this work, which indicated clearly that, in practice, there was unlikely to be a problem even if Heathrow did not get a third runway, albeit that there might be some additional trucking costs to make use of bellyhold capacity in Europe. This would still be cheaper for shippers than the alternative use of pure freighter aircraft from Manston or elsewhere. Furthermore, in assessing the scope for airports to accommodate more freighter aircraft[85], we do not agree with their assessment in respect of Stansted for the foreseeable future and Northpoint appear to ignore the main pure freight hub at East Midlands.

[80] Northpoint, *The Shortcomings of the Avia Solutions Report and an Overview of RSP's Proposals for Airport Operation at Manston*, paragraph 1.3.
[81] Ibid, paragraph 2.4.
[82] Ibid, paragraph 2.18.
[83] Ibid, paragraph 2.21.
[84] Ibid, paragraph 2.24.
[85] Ibid, paragraph 2.30.

6.23 In dismissing the potential for these other, established airports, Northpoint seek to highlight the constraining effect of night movement restrictions on air cargo operations. By inference, then, Northpoint appear to assume that Manston will not suffer from such restrictions so making it more attractive. This appears to be corroborated at Appendix A[86] where it is claimed that the presence of a logistics centre at Manston without significant night movement restrictions would be one of the attractions and a factor in the forecasts being attainable. However, it is our understanding that night movements will at best be limited to 8 per night and could be limited further if the promises of no night movements are upheld.

6.24 In relation to the potential in the aircraft maintenance and dismantling/recycling market[87], we note that these are activities being 'chased' by many airports. There is no analysis of competition nor of the likelihood of Manston capturing any of these activities in Northpoint's report. In any event, the level of activity generated by such activities is unlikely to make the difference between the Airport being viable or not.

6.25 Overall, Northpoint present no real evidence in its Conclusions[88] to substantiate why the operation at Manston could be viable. Its forecasts of cargo movement and passenger demand are no more transparent nor based on market analysis than those set out by Azimuth and do not justify why the RSP application would meet the tests set out in Section 23 of the Planning Act 2008. In general, we agree with Avia's conclusions regarding the robustness of this report.

[86] Ibid, Appendix A, A.8.
[87] Ibid, Section 4.
[88] Ibid, Section 5.

7 CONCLUSIONS

7.1 In this report, we have examined the case for RSP's proposed development at Manston Airport. Our overall assessment is that RSP have failed to provide their own evidence of the capability of Manston Airport and the amount by which their proposals would increase that capability by (all we have are forecasts which have no credibility as explained in this report). This results in glairing omissions in RSP's consultation material. This failure means that, in our opinion, the requirements in section 23 of the Planning Act 2008 (as amended) have not been satisfied. In essence, we would have expected RSP to be able to show:

- the capability of Manston Airport of providing air cargo transport services;
- the amount by which RSP is proposing to increase that capability by and thus the "new" capability; and
- a credible forecast for why that 'new' capability is required.

None of this information is provided by RSP.

7.2 RSP's case is principally based on circumstantial evidence presented in the Volumes I to IV of *Manston – A Regional and National Asset* prepared by Azimuth Associates. Much of the material upon which Azimuth seek to rely as the basis for the case for Manston relates to the economic costs to the UK if additional passenger hub capacity is not provided in the South East of England by 2050. This is not relevant to the specific question as to whether there would be sufficient demand for pure freighter aircraft movements to be operated to/from Manston in the foreseeable future.

7.3 The analysis presented by Azimuth shows a lack of understanding of the economics of the air freight market. This leads to a misinterpretation of work by ourselves, upon which Azimuth seek to rely to support their case. Just because there could be excess freight demand in 2050 in the absence of further runway capacity at the UK's main hub, it does not follow that displaced bellyhold freight will seek a more expensive pure freighter service from a relatively nearby airport over the use of available bellyhold capacity from a more distant airport which can be provided at a lower cost to the shipper with only marginal penalty in terms of time. Our previous work simply cannot be relied on to support RSP's case.

7.4 Fundamentally, Manston's past operation was economically inefficient due to the inherent lack of viability. Hence, reopening the Airport, in the face of a limited market, has the potential to damage the productivity of the UK aviation sector overall, particularly, as we have demonstrated in our own assessment of cargo demand for Manston in Section 3 that there are more economically efficient alternatives available for any freight displaced due to specific capacity constraints at Heathrow both now and in the future.

7.5 Whilst there may be a role for Manston, on the margin, providing some niche specialist air freight operations, the market for such services is small and often ad hoc, which will impact on the prospects for a viable operation of the Airport.

7.6 Manston is too peripheral for integrator operations serving the UK. Integrators have a strong preference for locations more centrally located in the UK with good road access to all of the major markets. The availability of land for warehouses, for example as suggested in terms of the use of the 'Northern Grasslands' part of the overall airport site, is far less important than a location central to the market and the availability of good road access, neither of which are characteristics of Manston. This would apply equally to the suggestion that Amazon might locate there or that the Airport could become a base for drone operations. It is simply in the wrong place to serve the market being in the far south east at the end of a peninsular, away from the main centres of population and distribution in the UK.

7.7 In the absence of hard market evidence of the need for Manston Airport, Azimuth undertook an interview survey to supplement the need case and inform the forecasts. However, the list of interviews was small, with few national players interviewed compared to a large number of local companies with something of a vested interest in seeing Manston re-opened. Even so, if anything, the views of those interviewed by Azimuth suggest that there would, at best, be a limited role for Manston. The one airline interviewed made clear that *"success at Manston depended upon identifying a niche market and becoming known for excellence. In particular, suggestions included a perishables centre, handling of live animals, easy access for charter flights, and handling cargo that is not necessarily straightforward"*. The scale of this opportunity was never quantified by Azimuth. It is clear, however, that the realistic expectation for Manston is for a small niche operation rather than as a general 'overspill' airport for London.

7.8 The outputs from these interviews are then used by Azimuth as a basis for postulating a number of cargo aircraft movements that might operate at Manston. However, it is simply not possible to relate the proposed services to be operated with the responses by the interviewees. There is a complete absence of any explanation for or justification of the services postulated. At the very least, there is a lack of transparency in the approach that needs to be explained so that consultees can understand the basis of what is proposed and to ascertain whether there is a credible forecast for why an increase in Manston's capability is required.

7.9 In our view, the Azimuth forecasts simply lack credibility. To illustrate this lack of credibility of the forecasts, in Year 2 (the first operational year), a cargo throughput of nearly 100,000 tonnes is forecast by Azimuth. This would make Manston the 5th largest freight airport in the UK in its first year after re-opening (compared to 2016 actual throughput at the other airports). This would place it close to the scale of freight operations at Manchester Airport, which includes a substantial amount of bellyhold freight. It would make Manston the 3rd busiest airport in the UK in terms of tonnage carried on dedicated freighter aircraft. This is simply not a credible proposition. This lack of credibility is important in reaching any decision under Section 23 of the Planning Act 2008 (as amended).

7.10 We have updated and further developed our analysis of the UK air freight market from than previously undertaken for TfL and the FTA, and upon which RSP seek to rely as corroboration of their own cargo movement forecasts. When properly interpreted, our forecasts of air freight demand and capacity across the UK as a whole, taking the role of bellyhold fully into account, show that there is plenty of freighter capacity at Stansted and East Midlands to the extent that there is a need for more pure freighter capacity. Overall, we conclude from this analysis that there will be no shortage of freighter capacity in the UK before 2040 (RSP's forecast assessment year) and that overspill from other airports would not provide a rationale for re-opening Manston.

7.11 Our initial assessment of the passenger market is that the throughput might, at best, be around half of that projected by RSP and, hence, given the dependence on passenger related income for the financial viability of airport operations, this will impact substantially on the viability of the proposal. The other activities suggested by RSP, such as business aviation, maintenance, repair and overhaul, and aircraft dismantling are highly competitive markets and, to the extent that Manston might attract any such operations, this are unlikely to contribute substantially to the overall viability of the Airport.

7.12 The existing infrastructure at Manston Airport, if made good, is capable of handling 21,000 annual air cargo aircraft movements[89]. The actual usage of that capability would depend on the pattern of operation and how the infrastructure was used on a day by day basis. Our assessment, therefore, provides essential missing information from RSP's materials to date which is necessary for the purposes of Section 23 of the Planning Act 2008 (as amended), for assessment purposes under the Environmental Impact Assessment Regulations and for consultation purposes.

7.13 Without prejudice to our view that demand to use Manston is not likely to be anything like 17,171 cargo aircraft movements a year, we have considered that the land required to accommodate such a number of movements. Our assessment is that the land required would be substantially less than shown on the RSP Master Plan and that the proposed land take is excessive and without justification in terms of the compulsory acquisition of the land. Any development required to handle 17,171 annual movements by air cargo aircraft can all be accommodated to the south of the B2050 and, even allowing for passenger operations and other activities, would not require all of the airfield land to the south of the road. Obviously, on the basis of more realistic forecasts of future demand, the area required to support the ongoing operation of the Airport would be materially smaller.

7.14 We can see no justification for the inclusion of the 'Northern Grasslands' within the DCO on the basis of it being for associated development as there will be little or no requirement for the relocation of freight forwarding activity from adjacent to the UK's main cargo hub at Heathrow to Manston and any requirement to support Manston operations could be accommodated south of the B2050. The development on the 'Northern Grasslands' site appears to be speculative commercial development which, based on the precedent at East Midlands Airport – the UK's principal airport for pure freighter operations – would be expected to be largely for non-aviation related uses.

[89] Based on an 18-hour operational day. Should a night time noise policy be agreed with Thanet District Council pursuant to the existing planning agreement that enabled a longer operational day and/or a number of scheduled night movements, then the capability could, in theory, be higher than 21,000 annual cargo aircraft movements.

7.15 In terms of the socio-economic implications of the proposed development, Azimuth has shown a lack of understanding of how such impacts should properly be calculated. Leaving aside the use of inappropriate multipliers, the impacts have been assessed at a national scale and should have taken displacement of activity from other airports fully into account, reducing the impacts below those stated. Furthermore, the assessment should have considered the impact on alternative uses of the site, including SHP's proposed mixed use development and the socio-economic benefits deriving therefrom. We have set out a more realistic and robust assessment, which shows that the local impacts within Kent, even on Azimuth's forecasts would be substantially less than claimed and it is these lower order effects which would need to be balanced with the environmental and impacts in assessing the acceptability of the proposed development.

7.16 Unsurprisingly, the socio-economic impacts associated with the Airport are reduced even further on the basis of more realistic forecasts of likely usage if it re-opened. The operation is simply of a much smaller scale. In Year 2, in generates 452 jobs, only 17% of the Azimuth estimate of 2,654. By Year 20, the differential is even larger, with the Azimuth estimates reaching over 30,000 jobs, but with our estimates at only just over 1,000.

7.17 Once again, the evidence presented by Azimuth on behalf of RSP cannot be relied upon. It is infected with the flaws in the traffic forecasting methodology identified previously but the approach to identifying socio-economic impacts is, in itself, badly flawed. The socio-economic impacts are, as a result, massively overstated. In any event, these benefits would not be realised if the Airport ceases operation again due to it not being commercially viable.

7.18 As well as the Azimuth reports which form the basis of RSP's case, we have also reviewed a number of other reports on the potential for Manston. In overall terms, we agree with Aviasolutions for Thanet District Council that there is little realistic prospect of the re-opening of Manston Airport being a commercially viable proposition. We have reviewed their original report and the more recent reports and concur with their views on the overall structure of the UK air cargo market, noting that they, unlike Azimuth, have correctly understood the implications of our 2015 work for the FTA. We do not accept Northpoint's rebuttal of the Aviasolutions work. Like Azimuth, Northpoint's work is largely aspirational without any robust evidence or analysis of the market. Northpoint, too, misinterpret our previous work for the FTA and TfL.

7.19 **In overall terms, then, we do not consider that the case for the development of Manston Airport has been robustly substantiated. In any event, the capability of the existing infrastructure at the Airport, once made good in line with existing planning consents, is at least 21,000 annual air transport movements by air cargo aircraft. This means that, in practice, RSP are seeking permission to increase the number of cargo air transport movements that Manston Airport is capable of handling from 21,000 to at least 31,000 a year, well beyond the level assessed in the PEIR. Indeed, RSP's consultation material does not provide any detail as to what the increase in capability would be as a result of its proposals (i.e. the increase in capability as a result of its proposed alteration to Manston Airport). As a minimum, the increase in capability would be to 31,000 annual air transport movements by cargo aircraft, but in our view their proposals would result in a significantly higher 'new' capability which is not revealed or assessed by RSP.**

APPENDIX A

York Aviation

Transport for London

Note on Freight Connectivity

1. This note explains the approach taken to estimating the number of pure freighter air transport movements at the London airports in 2050 under three different scenarios of capacity growth:

   - ✈ Maximum use of existing capacity;
   - ✈ 2+2+2 – additional runways at each of Gatwick and Stansted;
   - ✈ New 4 runway hub.

2. The number of additional freighter movements required depends on the volume of passenger flights providing bellyhold capacity under the different scenarios. Under the constrained Max Use scenario, 48,000 pure freighter movements could be required, up from 14,000 at the London airports today. As there would be no spare runway capacity at the main London airports, this capacity would need to be provided from smaller airports serving the London area or from regional airports, with loss of economies of scale and producer efficiency, or through trucking to alternative hubs in Europe with implications for speed of transit.

3. With the provision of additional runways, increased bellyhold capacity reduces the number of additional freighter movements required to 28,000 and 21,000 respectively under the 2+2+2 and 4 runway hub scenarios. In both cases, we believe there will be sufficient runway capacity available to accommodate these freighter movements, albeit the 2+2+2 scenario will still result in dispersal of air freight capacity across a range of airports with the consequent loss of economies of scale and efficiency which could be attained at a single hub.

Freight Volumes

4. In 2012, the London airports handled 1,805,761 tonnes of freight[1]. Only 17% of this freight was flown on pure freighter aircraft. 83% was flown in the bellyhold of passenger aircraft. This may be as a result of limited capacity for freighter operations at Heathrow, where the bulk of air freight consolidation activity is concentrated. However, it may equally reflect the scale of bellyhold capacity offered at Heathrow, which reduces the need for pure freighter capacity to serve the London market as a whole.

5. Using data from ACI EUROPE[2], the volume of freight flown from the London airports is compared with that flown from other key European cities in Table 1.

[1] CAA Airport Statistics.
[2] The small discrepancy to CAA Statistics is noted but it is not considered to be material. The * against Hahn indicates estimated freight taken from airport's own website.

Table 1

	Tonnes
Heathrow	1,464,596
Gatwick	97,565
Stansted	214,904
Luton	29,637
London	**1,806,702**
Paris CDG	1,935,180
Paris Orly	94,700
Paris	**2,029,880**
Frankfurt	1,986,180
Frankfurt Hahn*	223,000
Frankfurt	**2,209,180**
Amsterdam	1,483,450
Milan MXP	405,858
Milan LIN	15,513
Milan BGY	116,733
Milan	**421,371**
Brussels	394,870
Luxembourg	614,906
Madrid	359,360
Zurich	281,683
Vienna	178,128
Dublin	102,717
Lisbon	90,264
Helsinki	176,987

6. There is no clear evidence that London is currently disadvantaged in terms of air freight capacity as the majority of freight is flown from Heathrow in the bellyhold of passenger aircraft rather than in pure freighter aircraft. To the extent that there is a need for freighter capacity, it can be provided at Stansted where there is ample spare capacity for additional movements and areas are set aside to increase aircraft parking and freight handling facilities if required. Although it is possible that limitations on bellyhold capacity at Heathrow may force greater trucking of freight to Europe, this is not evident from a comparison of overall air freight carried compared to other major European countries. In any event, the fact that freight is trucked rather than flown to Europe may have only a marginal impact on total transit times and, hence, limited economic detriment.

7. As well as the main city airports, there are a number of other specialist freight airports in both the UK and western Europe. Those handling over 75,000 tonnes in 2012 are shown in Table 2.

Table 2

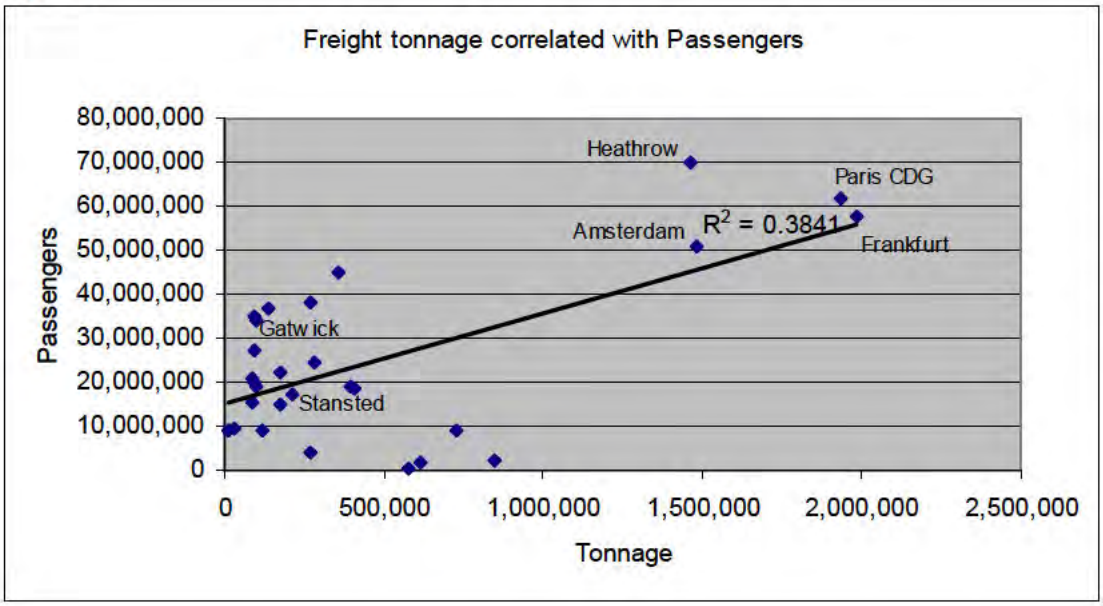
	Tonnes
Manchester	97,215
East Midlands	267,350
Cologne	730,040
Munich	272,203
Dusseldorf	86,729
Leipzig	846,086
Rome	135,777
Liege	577,226

8. Overall, on the basis of substantial air freight flows recorded by ACI EUROPE, the UK handled around 2.2 million tonnes of flown freight, France a similar amount, Italy around 600,000 tonnes and Spain around 500,000 tonnes. This does not suggest that the UK is disadvantaged in terms of freighter capacity overall currently.

9. However, the role of the low countries and Germany in acting as the major freight centre in western Europe is noticeable. In total, the main German freight airports handled almost 4.2 million tonnes of freight in 2012 which, when combined with the Netherlands and Benelux countries, amounted to 7.2 million tonnes of air freight flown. These airports have developed major and specialist air freight roles, with freight being trucked from all over Europe to feed these freight hubs. The integration of trucking with air freight should not be overlooked, even within the UK. In practice, it is unlikely that the UK could replicate this role, even with unconstrained airport capacity, due to its island location on the western edge of Europe.

10. There is some correlation between air freight flown to/from an airport and passengers carried as shown in Figure 1 below but this relates in large part to belly hold capacity. Figure 1 shows the correlation between flown freight and passengers across 29 European airports in 2012 as recorded by ACI EUROPE and which were either major airports in terms of freight handled or secondary airports serving the same cities.

Figure 1



Freighter Operations

11. The pattern of freighter operations is complex. As well as air freight carried in the bellyhold of passenger aircraft, there are freight charters for specialist and ad hoc consignments and large numbers of flights by the integrators (DHL, Fedex, UPS) etc. Obtaining detailed timetable information for freight operations is not possible as most do not publish timetables. Only scheduled freighter operations are shown in OAG and there is some uncertainty over whether this data is comprehensive.

12. Using OAG data for the week of 17th June 2013, the London airports have 49 scheduled freighter departures (98 freighter movements). According to CAA statistics for 2012, there were just over 14,000 freighter aircraft movements at the London airports or around 270 per week. This suggests that the OAG recorded movements account for only around 37% of total freighter aircraft movements to/from the London airports.

13. Similar data has been extracted for other western European airports. The table in Appendix A summarises the main pattern of freighter departures at airports with more than 30 freighter departures per week. This table also includes the principal UK freight airports and secondary airports serving major cities which in combination had more than 30 scheduled freighter departures per week in June 2013.

14. The number of scheduled freighter departures at the main freight airports is summarised in Table 3 along with the freight tonnage handled and passengers carried. It is evident that there is no clear correlation between freight tonnage handled and the weekly number of scheduled departures. This is illustrated in Figure 2. Amsterdam and Frankfurt have a high number of scheduled movements relative to the total volume of air freight whilst Paris and Heathrow handle similar volumes of air freight but with significantly fewer scheduled movements. We believe that the principal reason for these differences is in the relative importance of bellyhold freight but also the extent to which integrator activity is present; for example Fedex has its principal European hub in Paris and its movements are not recorded in OAG.

Figure 2

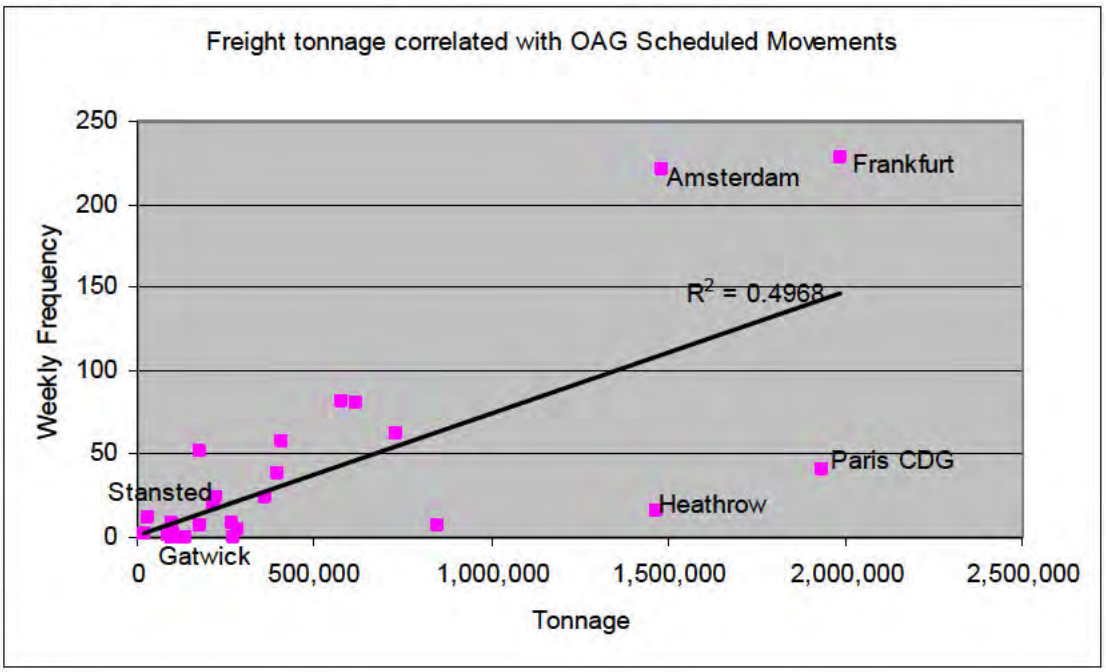


Table 3

	Freight tonnes	Pax	2013 wk freighters
Heathrow	1,464,596	70,038,804	16
Gatwick	97,565	34,222,405	0
Stansted	214,904	17,463,794	21
Luton	29,637	9,630,128	12
Manchester	97,215	19,841,747	8
East Midlands	267,350	4,086,849	9
Paris CDG	1,935,180	61,611,934	41
Paris Orly	94,700	27,232,263	0
Frankfurt	1,986,180	57,520,001	228
Frankfurt Hahn*	223,000		24
Cologne	730,040	9,280,070	62
Munich	272,203	38,360,604	0
Dusseldorf	86,729	20,833,246	1
Leipzig	846,086	2,279,221	7
Amsterdam	1,483,450	51,035,590	221
Milan MXP	405,858	18,522,760	58
Milan LIN	15,513	9,176,997	3
Milan BGY	116,733	8,888,017	0
Rome	135,777	36,980,161	0
Brussels	394,870	18,943,688	38
Liege	577,226	300,813	82
Luxembourg	614,906	1,912,806	81
Madrid	359,360	45,175,501	24
Barcelona	96,519	35,131,771	2
Zurich	281,683	24,751,649	5
Vienna	178,128	22,165,650	52
Dublin	102,717	19,096,572	1
Lisbon	90,264	15,301,236	1
Helsinki	176,987	14,859,981	7

*2011 data from airport website

15. Examination of the detailed information set out in Appendix A also shows how complex the pattern of freighter operations actually is. Few freighters, particularly those serving markets beyond Europe, operate on a strict point to point basis. Many transit more than one of the main European freight airports and a number of points overseas. Examination of arriving freighter patterns also reveals that the inbound pattern does not necessarily mirror the outbound pattern. Hence, there is already considerable flexibility to add new points if the market warrants.

16. Some freighters operate simple round trips. Others operate on a triangular basis, e.g. Lufthansa operating Frankfurt-Dallas-Detroit-Dallas-Manchester-Frankfurt. Inbound freight from the US to Manchester will be flown direct but outbound freight will transit Frankfurt. Other freighters operate effectively round the world journeys, e.g. British Airways operating Chicago-Houston-Stansted-Dammam-Dubai-Shanghai.

17. There is simply no way of knowing how much of the freight capacity on such aircraft is assigned to or used by freight originating in or destined for any airport, which may vary day by day. Freighter departures are, hence, not a reliable proxy for how much air freight capacity is available to uplift goods to and from any country or city.

18. Overall, our analysis of current freighter operations suggests that it is hard to distinguish a relationship between freighter movements and tonnage of freight carried.

19. Nor is it evident that the UK air freight capability is adversely affected today by shortage of capacity at Heathrow. There is ample spare airport capacity at Stansted for pure freight aircraft to the extent that there is demand for such aircraft operations given the amount of bellyhold capacity available at Heathrow. The volume of freight uplifted probably reasonably reflects the UK market, allowing for transit freight, and the limitations of the UK acting as a hub for freight trucked from continental Europe based on its geographic position. The principal issue is one of producer efficiency as a consequence of splitting locations, with the bulk of freight forwarding/consolidator activity being located around Heathrow and freight needing to be trucked to Stansted, Luton, or continental hubs. Whilst concentrating all freight activity at the main hub might make additional freighter flights viable by facilitating onward connections between bellyhold freight and pure freight operations, it is not clear the extent to which this would result in higher volumes of air freight being carried to/from the UK (as distinct from transit freight) as the UK does not appear to be significantly underperforming in aggregate terms compared to countries such as France, Spain or Italy.

Predicting Future Freighter Operations

20. In order to predict the volume of freighter activity in future at the London airports, we have developed a simple spreadsheet as set out in Table 4.

21. We have first projected forward total flown freight demand to and from London[3] on the assumption that it grows in line with overall passenger demand growth at 2.1% per annum in the absence of any specific forecasts of freight tonnage from DfT. We note that the DfT 2013 forecasts only give information for expected growth in pure freighter movements at 0.4% per annum but the basis of this is not clearly stated. Prima facie, this appears to understate unconstrained demand for pure freighter movements over the period to 2050.

22. In contrast, OE have identified that the expected average freight growth to and from Europe would be in the range 3.37% (Boeing) to 3.99% (Airbus). However, this would lead to substantially higher estimates of freight tonnage growth than passenger growth. Recent trends would suggest this to be unlikely so we have adopted the more cautious approach of using the same underlying growth as for passengers.

23. We have then estimated the bellyhold capacity offered at the London airports in 2050 based on the current average tonnage carried per international movement in 2012 at Heathrow, including both EU and non-EU flights, based on CAA Airport Statistics assuming average tonnes per movement increase by 0.5% per annum. This allows us to estimate the residual volume of freight under each scenario which would need to be accommodated on pure freighter aircraft.

[3] This is a simplifying assumption as it assumes the same proportion of UK regional air freight is trucked to London for uplift and the same proportion of freight is trucked to the continental freight hubs. On balance, this is likely to be a neutral assumption for the situation of unconstrained hub capacity as the proportion of regional freight flying direct from major regional airports might be expected to increase, particularly as more long haul flights develop, whilst the proportion being trucked from London to Europe might be expected to decrease with unrestricted capacity available.

Table 4

	2012	2050 Max Use	2050 2x2x2	2050 New Hub
Freighters 2012	14,123			
Freight in Freighters	310,022			
Total Freight	1,805,761	3,977,759	3,977,759	3,977,759
Tonnes per freighter	21.17	25.59	25.59	25.59
Tonnes per international bellyhold movement London	1.76	2.13	2.13	2.13
Forecast International Movements	834,725	1,051,034	1,298,981	1,375,452
Bellyhold Capacity	1,469,116	2,235,836	2,763,285	2,925,960
Freighter tonnage required		1,741,923	1,214,474	1,051,799
Freighter movement		68,077	47,463	41,106
Additional Freighters Required		53,954	33,340	26,983

24. We estimate that the number of freighters required to accommodate projected air freight demand would rise from 14,000 in 2012 to around 41,000 in the New Hub case, 47,000 in the 2+2+2 case and 68,000 in the Max Use case. In both the New Hub case and 2+2+2 case, we estimate there will be sufficient runway capacity available to accommodate these movements at 2050, at the New Hub and/or Stansted respectively. However, in the Max Use case, the London airports will, by definition, be full with passenger aircraft movements. Whilst we believe there will still be a small number of pure freighter operations accommodated in off-peak periods (as today at Heathrow), the number of freighter operations will be constrained.

25. It is reasonable to assume that around 14,000 freighters a year could still be accommodated in the vicinity of London by using capacity at airports such as Manston, which already handles some long haul freighters. However, capacity equivalent to an additional 54,000 freighter movements per year could be required to ensure demand is met, although this could be mitigated to an extent if the freighter capacity was prioritised for freight to and from the UK with less transit freight.

26. A key question is the extent to which such freighter capacity would be provided at airports such as East Midlands, Manchester and Birmingham. This could serve to reduce trucking movements from the regions to London, as take place today, with environmental benefits but it would reduce producer efficiency through split operations. In the absence of detailed data regarding freight trucking movements today, it is difficult to determine whether this would have positive or negative impacts overall..

27. In terms of the specific destinations of future freighter movements, our analysis of the existing patterns of service reveals the difficulty of defining market demand and aircraft routings. We do not believe it is sensible to attempt to determine the future geographic split by destination in either the constrained or unconstrained cases as a single freighter may serve a variety or markets as necessary. In the constrained case, it is likely that more freight would be trucked to the continental hubs as well as to UK regional points, which would potential add to shipment costs.

Conclusions

28. Overall, we have made a best estimate of the number of freighter aircraft movements likely to be using the London airports (or near London airports) under each of the capacity scenarios. These are as follows:

- ✈ Maximum use of existing capacity 14,000
- ✈ 2+2+2 – additional runways at each of Gatwick and Stansted 33,000
- ✈ New 4 runway hub 27,000

29. In the latter two cases, our assessment is that, across both bellyhold capacity and pure freighter activity, there would be sufficient capacity to meet expected demand for air freight to and from the UK. Our estimates for additional freighter capacity are substantially above those made by DfT. Hence, to the extent that our baseline is understated (although we do not believe this to be substantial) due to the current patterns of trucking freight to the continent, this will offset any overstatement as a consequence of assuming higher growth than DfT and by reductions in the amount of trucking to London from regional airports due to expected growth in their own freighter operations over the period to 2050.

30. The key difference between these two scenarios would be in terms of the efficiencies and economies of scale gained by the industry arising from the concentration of freight activity at a single hub. In both cases, the overall volume of air freight to and from the UK is expected to be broadly the same, although the actual freight carried including transit freight would be higher in the hub case. However, under the new hub scenario, savings from greater efficiency may be passed onto users, so reducing shipping costs and facilitating trade leading to higher freight volumes, but it is beyond the scope of the current exercise to assess this.

31. In the constrained, max use, case, there would be severe limitations of pure freighter movements at the London airports, which could amount to around 26% of the required air freight capacity to/from London. The extent to which this would act as a limitation on overall air freight volumes would depend on the extent to which the freight is still carried from regional airports or by truck. Clearly this would impact on the cost/efficiency of shipment, which in turn could impact on freight volumes carried. Again, it is outside the scope of the current exercise to assess these effects.

32. Overall, in assessing the economic value for air freight between the scenarios, the main difference is likely to lie in producer costs passed through to users and the impact that would have on business costs and hence output/freight generated. It would not be safe to assume that the reduction in cargo ATMs at the London airports necessarily translates to lost shipment value in its entirety.

23 May 2013

Appendix A

				Total Airport	Total City	Total Country
Heathrow	Amman	1				
	Amsterdam	1				
	Amsterdam	1	onwards to Sharjah and Singapore			
	Brussels	1				
	Copenhagen	1				
	Copenhagen	1	onwards to Sharjah and Singapore			
	Dubai	1				
	Frankfurt	1				
	Leipzig	1				
	Lisbon	1				
	Milan	1				
	Milan	2	onwards to Hong Kong			
	Paris	1	onwards to Delhi and Hong Kong			
	Seoul	2		16	49	71
Stansted	Amsterdam	1	originates in Bogota, Puerto Rico			
	Amsterdam	2	originates in Miami, Buenos Aires, Bogota and Puerto Rico			
	Cologne	1	onwards to Madrid and Johnannesburg			
	Cologne	1	onwards to Tbilisi			
	Cologne	1	onwards to Tbilisi and Delhi			
	Dammam	1	originates in Chicago and Houston, onwards to Dubai and Shanghai			
	Dubai	1	onwards to Hong Kong			
	Frankfurt	1	originates in Chicago and Atlanta, onwards to Shanghai			
	Frankfurt	2				
	Frankfurt	1	onwards to Chicago			
	Frankfurt	1	onwards to Hong Kong			
	Frankfurt	2	originates in Seoul and Moscow			
	Frankfurt	1	originates in Atlanta, onwards to Delhi and Hong Kong			

	Frankfurt	2	originates in Moscow, onwards to Seoul			
	Luxembourg	2	originates in Hanoi and Hong Kong			
	Zaragoza	1	onwards to Bahrain and Hong Kong	21	49	71
London Luton	Frankfurt	3				
	Istanbul	1				
	Istanbul	2	originates in Paris			
	Istanbul	2	originates in Cologne			
	Milan	4		12	49	71
Manchester	Amsterdam	1	onwards to Dubai and Hong Kong			
	Brussels	1	onwards to Dubai and Hong Kong			
	Dubai	1	originates in Amsterdam, onwards to Hong Kong			
	Frankfurt	2	originates in Detroit and Dallas			
	Frankfurt	1	onwards to Dubai and Hong Kong			
	Frankfurt	1	originates in Toronto and Houston			
	Milan	1	onwards to Hong Kong	8	8	71
East Midlands	Frankfurt	1				
	Keflavik	2	originates in Liege			
	Keflavik	2				
	Liege	2	originates in Keflavik			
	Paris	1		8	8	71
Prestwick	Los Angeles	1	originates in Luxembourg, onwards to Seattle			
	Luxembourg	1	originates in New York and Houston			
	Luxembourg	1	orginates in Los Angeles and Seattle			
	Paris	2	originates in Chicago			
	Seattle	1	orginates in Luxembourg, onwards to Calgary	6	6	71
Amsterdam	Abu Dhabi	4				
	Abu Dhabi	1	onwards to Taipei			
	Almaty	2	onwards to Hong Kong, Delhi, Sharjah			
	Bahrain	1	onwards to Mongolia, Hong Kong, Chennai			
	Baku	2	onwards to Kuala Lumpur			

	Bangalore	1	onwards to Singapore
	Beijing	7	
	Beirut	2	
	Budapest	2	onwards to Moscow
	Chengdu	4	
	Chennai	1	originates Nairobi, onwards to Singapore
	Chennai	1	originates in Chicago and Atlanta, onwards to Singapore
	Chicago	2	originates in Doha
	Chicago	7	
	Chongqing	2	onwards to Shanghai
	Copenhagen	1	originates in Nairobi, onwards to Sharjah and Singapore
	Copenhagen	2	onwards to Sharjah and Singapore
	Curitiba (Br)	1	onwards to Sao Paulo
	Dacca	1	originates in Nairobi, onwards to Singapore
	Doha	1	originates in Chicago
	Doha	3	
	Dubai	2	
	Dubai	1	originates in Eldoret and Nairobi
	Dubai	1	originates in Nairobi
	Dubain	1	originates in Manchester, onwards to Hong Kong
	Entebbe	1	onwards to Nairobi
	Frankfurt	1	originates in Hong Kong
	Frankfurt	1	onwards to Mumbai and Hong Kong
	Gothenburg	3	onwards to Dubai
	Guangzhou	5	
	Harare	3	onwards to Nairobi
	Heathroiw	1	
	Hong Kong	7	
	Houston	7	

	Jeddah	2	
	Johannesburg	1	onwards to Dar-Es-Salaam and Nairobi
	Khartoum	2	onwards to Nairobi
	Kigali	1	onwards to Nairobi
	Kuala Lumpur	1	
	Los Angeles	4	
	Luxembourg	1	originates in Libreville, Brazzaville, Nairobi
	Manchester	1	onwards to Dubai and Hong Kong
	Mexico City	7	
	Miami	2	onwards to Buenos Aires, Bogota, Puerto Rico and Stansted
	Miami	1	onwards to Buenos Aires, Quito and Guayaquil
	Miami	2	onwards to Santiago, Quito, Bogota and Puerto Rico
	Miami	2	onwards to Santiago, Quitoand Guayaquil
	Milan	3	originates in Tokyo
	Milan	2	onwards to Moscow
	Milan	4	onwards to Tokyo
	Mongolia	2	onwards to Hong Kong and Chennai
	Moscow	2	
	Moscow	2	onwards to Shanghai
	Nairobi	1	
	New York	3	orginates in Bahrain
	New York	1	originates in Bahrain
	New York	7	
	Paris	1	onwards to Mumbai and Hong Kong
	Puerto Rico	1	onwards to Bogota
	Puerto Rico	2	onwards to Quito
	Riyadh	1	
	Riyadh	2	onwards to Sharjah, Singapore and Kuala Lumpur

	Santiago	1				
	Sao Paulo	2	onwards to Buenos Aires and Santiago			
	Sao Paulo	1	onwards to Curitiba and Santiago			
	Seattle	1				
	Seoul	7				
	Shanghai	21				
	Sharjah	1	originates in Heathrow, onwards to Singapore			
	Sharjah	2	onwards to Guangzhou			
	Sharjah	1	onwards to Muscat and Hong Kong			
	Stockholm	2	originates in Seoul			
	Stockholm	4	onwards to Seoul			
	Taipei	1				
	Tel Aviv	1				
	Tenerife	1	onwards to Sao Paulo, Quito and Bogota			
	Tenerife	3	onwards to Sao Paulo, Quito and Guayaquil			
	Tianjin	15	onwards to Shanghai			
	Tokyo	1	originates in Frankfurt Hahn			
	Tokyo	5				
	Toronto	4				
	Tripoli	1				
	Vienna	3	onwards to Shanghai	221	221	221
Brussels	Amman	1	onwards to Jeddah			
	Chennai	1	originates in Los Angeles and Dallas, onwards to Singapore			
	Dammam	1				
	Dubai	3	originates in New York			
	Dubai	1	originates in Frankfurt, onwards to Hong Kong			
	Dubai	1	originates in Manchester, onwards to Hong Kong			
	Heathrow	1				
	Istanbul	1	originates in Jeddah			
	Kolkata	1	originates in Los Angeles, onwards to Singapore			
	Milan	2	originates in Riyadh			

			originates in			
	Milan	1	Jeddah			
	Mumbai	1	orginates in Los Angeles and Chicago, onwards to Singapore			
	New Guinea	1	onwards to Seoul			
			originates in			
	New York	1	Jeddah			
			originates in Jeddah, onwards to			
	New York	1	Houston			
	New York	6	originates in Dubai			
	Riyadh	1				
	Riyadh	1	onwards to Jeddah			
	Seoul	1	orginates in New York			
	Seoul	2	originates in New York			
			originates in Dallas, onwards to			
	Sharjah	2	Singapore			
	Sharjah	1	originates in Chicago and Dallas, onwards to Singapore			
	Taipei	1				
	Tianjin	1	onwards to Seoul			
			originates in			
	Vienna	2	Riyadh	36	36	118
Liege	Accra	2	onwards to Lagos and Addis Ababa			
	Addis Ababa	5				
	Bahrain	11	originates in New York			
			onwards to Tel			
	Bucharest	1	Aviv			
	Dubai	12	onwards to Hong Kong			
			onwards to			
	East Midlands	4	Keflavik			
	Entebbe	1				
	Istanbul	5				
	Keflavik	4				
			onwards to New			
	Keflavik	1	York			
	Lagos	2	onwards to Addis Ababa			
	Lagos	1	onwards to Ougadougou			
	Lagos	1	onwards to Port Harcourt			

	Lome	2	onwards to Congo, Addis			
	Luxembourg	1	Ababa			
	New York	1	originates in Tel Aviv			
	New York	2	originates in Tel Aviv			
	New York	5				
	Ougadougou	1	onwards to Congo			
	Shanghai	1				
	Shanghai	2				
	Siauliai Lithuania	1				
	Singapore	1				
	Tel Aviv	3	originates in New York			
	Tel Aviv	1	originates in Chicago			
	Tel Aviv	6				
	Vienna	5		82	82	118
Luxembourg	Abidjan	1	onwards to Accra			
	Abu Dhabi	1	onwards to Taipei			
	Almaty	1	onwards to Hong Kong			
	Atlanta	1	onwards to Chicago			
	Atlanta	1				
	Atlanta	2	originates in Doha, onwards to Houston			
	Baku	1	onwards to Almaty and Shanghai			
	Baku	1	onwards to Hong Kong			
	Baku	4	onwards to Shanghai			
	Baku	1	onwards to Singapore and Hong Kong			
	Baku	1	onwards to Singapore and Kuala Lumpur			
	Baku	2	onwards to Taipei and Bangkok			
	Beijing	1	onwards to Xiamen			
	Beirut	1	onwards to Amman and Hong Kong			

			onwards to Amman and
	Beirut	1	Istanbul
	Chicago	1	onwards to Atlanta
	Chicago	1	onwards to Los Angeles
	Congo	1	originates in Liege, onwards to Addis Ababa
	Dallas	1	
	Dammam	1	onwards to Saigon and Hong Kong
	Doha	1	onwards to Hanoi and Hong Kong
	Doha	1	onwards to Singapore and Kuala Lumpur
	Doha	1	originates in Houston
	Doha	1	originates in Chicago
	Dubai	1	onwards to Bangkok and Hong Kong
	Dubai	1	onwards to Hong Kong
	Frankfurt Hahn	3	originates in Shanghai
	Indianapolis	1	onwards to Chicago
	Indianapolis	1	onwards to Los Angeles, Calgary
	Johannesburg	3	
	Komatsu	2	onwards to Seoul
	Kuwait	2	onwards to Hanoi and Hong Kong
	Lagos	1	onwards to Port Harcourt and Kinshasa
	Libreville	1	onwards to Brazzaville
	Libreville	1	onwards to Kinshasa
	Los Angeles	1	onwards to Seattle
	Los Angeles	1	
	Mexico City	1	
	Mexico City	1	onwards to Guadalajara
	Miami	2	onwards to Houston
	Milan	1	onwards to New York and Chicago
	Milan	4	

	Ndjamena	1	onwards to Lagos			
	New York	1	originates in Tel Aviv			
	New York	1	orginates in Tel Aviv, onwards to Chicago			
	New York	1	onwards to Atlanta			
	New York	1	onwards to Houston			
	New York	1	onwards to Mexico City and Guadalajara			
	Prague	2	originates in Chengdu			
	Prestwick	1	onwards to Los Angeles and Seattle			
	Prestwick	1	onwards to Seattle and Calgary			
	Riyadh	1	onwards to Dammam and Hong Kong			
	Sao Paulo	1				
	Sao Paulo	2	onwards to Curitiba			
	Sao Paulo	1	onwards to Manaus			
	Seoul	1				
	Sharjah	1	onwards to Karachi			
	Singapore	1	onwards to Kuala Lumpur			
	Taipei	2				
	Tbilisi	2	onwards to Baku and Shanghai			
	Yerevan	1		80	80	80
Paris	Beirut	1				
	Cairo	1	onwards to Reunion			
	Chicago	5				
	Cologne	2	onwards to Istanbul			
	Delhi	1	originates in Heathrow, onwards to Hong Kong			
	Djibouti	1	onwards to Reunion			
	Hannover	4				

	Heathrow	1				
	Istanbul	1				
	London Luton	2	onwards to Istanbul			
	Mexico City	6				
	Milan	1	onwards to Delhi and Hong Kong			
	Mumbai	2	onwards to Hong Kong			
	Mumbai	1	originates in Amsterdam, onwards to Hong Kong			
	New York	1	onwards to Chicago			
	Niamey	1	onwards to Ouagadougou and Bamako			
	Njamena	1	onwards to Bangui, Brazzavile and Port Harcourt			
	Porto	1	onwards to Mexico City			
	Seoul	2				
	Shanghai	2	originates in Copenhagen			
	Shanghai	2				
	Tokyo	2		41	41	41
Cologne	Basle	4				
	Berlin	5				
	Bucharest	4				
	Bucharest	2				
	Istanbul	2	originates in Paris			
	Istanbul	2				
	Katowice	4				
	Keflavik	5				
	Ljubljana	4				
	Ljubljana	1	onwards to Zagreb			
	London Luton	2	originates in Istanbul			
	London Luton	2	onwards to Istanbul			
	Madrid	1	originates in Stansted			
	Prague	5				
	Sofia	1				
	Tblisi	1	originates in Stansted			

	Tblisi	1	originates in Stansted, onwards to Delhi			
	Tel Aviv	12				
	Zagreb	4		62	62	304
Frankfurt Hahn	Almaty	1	originates in New York			
	Almaty	6	originates in New York, onwards to Shanghai			
	Amsterdam	1	onwards to Tokyo			
	Amsterdam	1	originates in Tokyo			
	Atyrau	1	onwards to Almaty			
	Baku	3				
	Beijing	3				
	Chatearoux	1	onwards to Kabul			
	Doha	2				
	Johannesburg	2				
	Milan	1	onwards to Tokyo			
	Toronto	1	onwards to Mexico City			
	Yerevan	1		24	242	304
Frankfurt	Abu Dhabi	5				
	Almaty	1				
	Almaty	1	onwards to Guangzhou			
	Almaty	1	onwards to Hong Kong			
	Almaty	2	onwards to Shanghai			
	Amman	2				
	Amsterdam	1	originates in Hong Kong and Chennai			
	Atlanta	4				
	Baku	1	onwards to Bangkok and Kuala Lumpur			
	Baku	2	onwards to Kuala Lumpur			
	Bangalore	3	onwards to Chennai			
	Bangalore	1	onwards to Hyderabad and Guangzhou			
	Bangkok	2				
	Beijing	3	onwards to Shanghai			
	Brussels	1	onwards to Dubai and Hong Kong			

	Cairo		3		
	Chicago		7		
	Chicago		1	onwards to Los Angeles	
	Chicago		4	onwards to Mexico City	
	Chicago		2	onwards to Mexico City and Guadaljara	
	Chicago		1	originates in Stansted	
	Coventry		10		
	Dakar		3	originates in Dubai, onwards to Sao Paulo	
	Dammam		2	onwards to Sharjah and Hong Kong	
	Delhi		4	onwards to Singapore and Bangkok	
	Delhi		1	originates in Atlanta and Stansted, onwards to Hong Kong	
	Detroit		2		
	Doha		1		
	Dubai		1	originates in Lagos and Accra	
	Dubai		4	originates in Sao Paulo and Dakar	
	Dubai		3		
	Dubai		1	originates in Dusseldorf	
	Dubai		1	originates in Manchester, onwards to Hong Kong	
	East Midlands		1		
	Heathrow		1		
	Helsinki		1		
	Hong Kong		3		
	Hong Kong		1	originates in Stansted	
	Istanbul		6		
	Istanbul		1	onwards to Tel Aviv	
	Jeddah		1	onwards to Sharjah, Hyderabad and Guangzhou	
	Kabul		1		
	Krasnojarsk		1		
	Krasnojarsk		6	onwards to Beijing and Seoul	
	Krasnojarsk		1	onwards to Seoul and Shanghai	
	Krasnojarsk	y		onwards to Shanghai	

	Krasnojarsk	7	onwards to Tokyo and Osaka
	London Luton	3	
	Madrid	4	
	Malta	1	
	Milan	1	originates in Hong Kong and Dubai
	Milan	1	onwards to Dubai and Hong Kong
	Milan	1	onwards to Hong Kong
	Moscow	10	
	Moscow	2	onwards to Tokyo
	Moscow	1	onwards to Tokyo and Seoul
	Mumbai	1	
	Mumbai	1	onwards to Chennai
	Mumbai	3	onwards to Hong Kong
	Mumbai	1	onwards to Hyderabad
	Mumbai	1	originates in Amsterdam, onwards to Hong Kong
	Nairobi	5	onwards to Johannesburg
	New York	5	
	Riyadh	3	
	Riyadh	1	onwards to Dammam
	Riyadh	1	onwards to Sharjah and Hong Kong
	Sao Paulo	3	
	Sao Paulo	1	onwards to Curitiba
	Sao Paulo	1	onwards to Curitiba, Quito and Puerto Rico
	Sao Paulo	2	onwards to Manaus, Quito and Puerto Rico
	Sao Paulo	2	onwards to Montevideo and Buenos Aires
	Seoul	1	originates in Vienna
	Seoul	2	originates in St Petersburg
	Seoul	12	

	Seoul	2	originates in Atlanta and Stansted			
	Seoul	1	originates in Moscow and Vienna			
	Shanghai	1	originates in Chicago, Atlanta and Stansted			
	Shanghai	18				
	Sharjah	2	onwards to Kolkata and Hong Kong			
	Stockholm	1	onwards to Dubai and Hong Kong			
	Stockholm	4	onwards to Seoul			
	Taipei	3				
	Tel Aviv	3	onwards to Istanbul			
	Toronto	1	onwards to Houston	218	242	304
Milan	Abu Dhabi	2				
	Almaty	1	onwards to Osaka and Hong Kong			
	Baku	1				
	Dammam	1				
	Delhi	1	originates in Paris, onwards to Hong Kong			
	Doha	2				
	Dubai	2	onwards toHong Kong			
	Dubai	1	originates in Frankfurt, onwards to Hong Kong			
	Heathrow	5				
	Hong Kong	1	originates in Frankfurt			
	Hong Kong	2	originates in Heathrow			
	Hong Kong	1	originates in Manchester			
	Istanbul	1				
	Istanbul	2	originates in Lagos			
	Istanbul	1	orginates in Tirana			
	Jeddah	1				
	Luxembourg	1	originates in Chicago and Los Angeles			
	Luxembourg	4				
	Luxembourg	1	orginates in Chicago and New York			
	Madrid	1				
	Moscow	2	originates in Amsterdam			

	New Guinea	1	onwards to Seoul			
	Osaka	1	onwards to Hong Kong			
	Riyadh	1				
	Sao Paulo	1				
	Seoul	1	originates in Uzbekistan			
	Seoul	9				
	Shanghai	4				
	Tokyo	4	originates in Amsterdam			
	Tokyo	1	originates in Frankfurt Hahn	57	57	57
Vienna	Amman	1				
	Copenhagen	2	orginates Seoul			
	Frankfurt	1	orginates Seoul			
	Istanbul	2				
	Kiev	5				
	Liege	5				
	Milan	3	orginates Seoul			
	Moscow	2	orginates Seoul and onwards to Gothenburg or Frankfurt			
	Oslo	3	orginates Seoul			
	Oslo	6				
	Riyadh	2				
	Seoul	1	via Frankfurt			
	Seoul	3	via Gothenburg			
	Seoul	1	via Tel Aviv			
	Seoul	4	via Copenhagen			
	Seoul	1	originates Moscow			
	Shanghai	3	originates Amsterdam			
	St Petersburg	1	orginates Seoul and onwards to Gothenburg			
	Tel Aviv	1	orginates Seoul			
	Timosoara	5		52	52	52

APPENDIX C: INDEX OF AZIMUTH PARAGRAPH REFERENCES IN YORK AVIATION NOVEMBER 2017 REPORT

York Aviation (YAL) Reference and Para	Azimuth Old Para	Azimuth New Para	Implications / Summary of Change
2.3 – "Although Azimuth state at paragraph 1.2.1 of Volume 1 "*RiverOak, who specialise in identifying market opportunities, has identified the substantial need for additional and specialised airport capacity for dedicated freighters in the southeast of England*", we are unaware of any other research upon which RSP rely. All other documents produced in support of the prospective DCO appear to rely on the work of Azimuth".	Paragraph 1.2.1 of Volume I in section "**RiverOak's vision for Manston Airport**"	Para 1.2.1 of Vol I in section "**RiverOak's vision for Manston Airport**"	Re-worded *"RiverOak, whose directors specialise in……."*
2.10 – "Furthermore, the reference at paragraph 5.1.4 to concern expressed in the Aviation Policy Framework regarding the implications of capacity shortfalls on the range of destinations served does not, as Azimuth infer, indicate a need for additional aircraft movements by dedicated freighter aircraft as these would require a concentration of freight flows to a specific destinations to fill a single aircraft at a time. Rather, the Aviation Policy Framework refers to the need for a wide range of global destinations being available at the UK's national hub airport, offering	Paragraph 5.1.4 of Volume I in section "**Political Setting**"	Para 2.3.8 in Vol I in section "**Political Setting**"	Original report made reference to Aviation Policy Framework citing the circumstances where no additional airport capacity was provided. The updated report now refers to a quotation from the Airports NPS, which still relates to the circumstances in the absence of any additional capacity at the London airports.

York Aviation (YAL) Reference and Para	Azimuth Old Para	Azimuth New Para	Implications / Summary of Change
passenger and bellyhold capacity so as to maximise the choice and convenience for both passengers and shippers of airfreight. It is this variety of destinations and, importantly, the high frequencies of service that lead the market to favour a bellyhold hub and spoke system so that freight can reach its end destination in the most efficient and cost effective way possible."			
2.18 – "In this paper for TfL, we estimated the excess air freight that could not be accommodated in bellyhold capacity on passenger aircraft under different scenarios of additional capacity at the London airports and converted that excess to an equivalent number of freighter movements. The 54,000 potential additional freighter movements that Azimuth (and Northpoint) cite at paragraph 3.4.5 are the additional freight carrying capacity required in the event of there being no further runway capacity at any of the London airports (a severely constrained scenario) that is simply no longer realistic as we have set out above. Azimuth's (and Northpoint's) use of	Paragraph 3.4.5 of Volume I in section "**The need for air freight capacity in the South East**"	The point discussing TfL forecasts predicting that the South East will be short of capacity for around 54,000 air freight movements is made twice in the new report: Paragraph 4.2.8 in section "**Freight-focussed findings**"; Paragraph 5.1.8 in section "**Channel Crossings and Trucking**".	Point repeated in two sections.

York Aviation (YAL) Reference and Para	Azimuth Old Para	Azimuth New Para	Implications / Summary of Change
this figure as a potential market for Manston is misleading."			
2.19 – "The note then goes on to set out how this requirement for additional freight capacity might be met and the economic consequences. In the first instance, we noted that around 14,000 additional freighter movements could be accommodated in the London system if no capacity expansion takes place, and this included the use of additional available freighter slots at Stansted. Azimuth appear to have taken our inclusion of Manston, as an example of a smaller airport in the South East that could accommodate some movements, as an indication that it could play a substantial role, wrongly stating in the Executive Summary and at paragraph 3.4.5 that we said that Manston was expected to handle 14,000 freighter movements. Manston was given simply as an example of an airport with freighter activity at the time of writing (2013) with the potential to accommodate some additional movements (as we set out in Section 4 of this report, the	Paragraph 3.4.5 of Volume I in section "**The need for air freight capacity in the South East**"	Azimuth continue to claim that our work for TfL stated that Manston could accommodate 14,000 displace freighter movements in the **Executive Summary** to Vol I. There are numerous other references to the 14,000 movements, including at paragraph 3.1.3 of Vol III where Azimuth claims that Manston is the only airport that could accommodate these movements.	The updated Azimuth Reports continue to misrepresent the implications of our work for TfL.

York Aviation (YAL) Reference and Para	Azimuth Old Para	Azimuth New Para	Implications / Summary of Change
capability of Manston Airport is 21,000 annual cargo aircraft movements before allowing for any night operations)."			
2.23 – "Azimuth, at paragraph 3.3.2, incorrectly characterises our note to TfL as expressing a concern about the amount of trucking to Europe. Significantly, the last part of paragraph 9 is omitted by Azimuth. When looked at in its entirety, it is evident that we were noting that trucking is an inevitable part of the market, for reasons which we explain later in this section: [quote]"	Paragraph 3.3.2 of Volume I in section "**The UK's competitive position**"	Paragraph 4.3.4 in section "**The UK's competitive position**"	Reference corrected from TfL to York Aviation. Quotation still not given in its entirety and continues to be misconstrued.
2.27 – "Azimuth's interpretation of our work for FTA appears to erroneously assume that excess demand in the London system will need to be met by additional freighter movements from an airport in the vicinity of London. For instance, at para 4.2.3, they state that "Even so and as York Aviation figures show, there will be a shortfall of slots for dedicated freighters, likely to be in the region of 45,000 by 2050".	Paragraph 4.2.3 of Volume I in section "**London Heathrow Airport**"	Paragraph 5.2.3 in section "**London Heathrow Airport**"	No change
2.38 – "At Para 4.0.2, Azimuth suggest the reasons why cargo airlines choose airports. In reality,	Paragraph 4.0.2 of Volume I in section "**Airfreight Capacity at UK Airports**"	Paragraph 8.0.2 of Vol I in section "Potential opportunities for Manston Airport"	No change

York Aviation (YAL) Reference and Para	Azimuth Old Para	Azimuth New Para	Implications / Summary of Change
Manston does not fulfil a number of these key criteria meaning that, even in the most favourable circumstances, it can never be more than a niche player in the market…"			
Footnote 25 (on page 20) – "Azimuth Vol 1 paragraph 7.1.6 quotes from a 2005 MORI survey that people were not impacted by night flights but this would reflect that there were no scheduled night flights when the airport was operational. Local resident support for re-opening (paragraph 7.1.1) needs to be seen in this context."	Paragraph 7.1.6 of Volume 1 in section "**Support for Manston Airport**" Paragraph 7.1.1 of Volume 1 in section "**Support for Manston Airport**"	Both points removed.	Both points removed.
2.39 – "A key consideration is Manston's geographic position substantially away from the economic spine of the UK and with very limited local demand. It is remote from most markets with a journey time to the M25 of nearly 1 hour and accessibility beyond would be subject to the general levels of traffic congestion in the London area. Azimuths's suggestion (paragraph 1.2.2) that Manston might effectively serve as a 4th runway for Heathrow for air cargo flights is merely fanciful given the journey time of 1¾ hours, which is	Paragraph 1.2.2 of Volume 1 in section "**RiverOak's vision for Manston Airport**"	Paragraph 1.2.2 in section "**RiverOak's vision for Manston Airport**"	No change

York Aviation (YAL) Reference and Para	Azimuth Old Para	Azimuth New Para	Implications / Summary of Change
little shorter than the time from Heathrow to East Midlands Airport with an already well developed infrastructure for handling air freight and more likely to fulfil such a role in relation to freight overspill from Heathrow that is time critical or of such a special nature as to warrant the use of pure freighter aircraft."			
2.40 – "Many of the other points raised by Azimuth regarding security, e-commerce and just-in-time delivery are all factors relating to the overall efficiency of the industry. If anything, what the analysis presented by Azimuth demonstrates is the importance of developing efficient freight networks serving the whole of the UK rather than the need for a re-opened freight focussed airport in the South East of England. Manston could only recapture economic benefits from cargo being trucked to the continent, as asserted at paragraph 4.8.4, to the extent that it provides a more economically efficient solution…"	Paragraph 4.8.4 of Volume I in section "**Other South East UK airfields**"	Points relating to Operation Stack etc. are made in Paragraphs 6.4.11 to 6.4.12 of Vol I in section "**Air freight trucking**"; Paragraph 6.4.13 again makes the point that by flying freight from Manston Airport, negating the need to truck to and from European airports for some types of air transportation, should help to ease congestion in the area…	Redrafted text but claims about Manston's role in relation to intercepting trucking to Europe retained in new text.

York Aviation (YAL) Reference and Para	Azimuth Old Para	Azimuth New Para	Implications / Summary of Change
2.41 – "One of the key reasons that the UK aviation sector is so productive, as cited by Azimuth at paragraph 5.2.1, is that it allows the market to work. Inefficient and unnecessary actors in the market are allowed to fail…"	Paragraph 5.2.1 of Volume 1 in section "**The Potential Effect of BREXIT on UK Aviation**"	Paragraph 6.2.1 in section "**The Potential Effect of BREXIT on UK Aviation**"	Final sentence "As such, it seems counter-productive to allow a potentially viable airport such as Manston to be used for housing" has been removed.
2.42 – "Azimuth asserts, paragraph 6.2.2, that the perceived lack of investment in Manston by the previous owners was an impediment to freight growth."	Paragraph 6.2.2 of Volume I in sub-section "Previous Operations"	Paragraph 7.2.2 of Vol I in sub-section "**Previous operations**"	Identical, although wording of last sentence changed slightly.
2.44 – "Volume II of Azimuth's work begins with an assessment of different forecasting approaches for cargo, noting that forecasting of cargo is not as well developed as that for passenger activity. We agree that air freight forecasting is difficult and that there is a lack of hard data. However, we do not agree with Azimuth's assertion that quantitative methods are, therefore, not suitable and that qualitative methods are more appropriate. The evidence cited by Azimuth at Table 3 does not support this conclusion and suggests that causal methods (regression analysis) remain the most appropriate for	Table 3 of Volume II titled "**Attributes of Aviation Forecasting Techniques**"	Table 2 of Vol II, titled "**Attributes of Aviation Forecasting Techniques**"	No change

York Aviation (YAL) Reference and Para	Azimuth Old Para	Azimuth New Para	Implications / Summary of Change
forecasting demand for cargo and freighters.)			
2.46 - "As well as reviewing forecasting methodologies, Azimuth sets out some air freight growth forecasts produced by others. At paragraph 3.6.1, Azimuth cite the DfT's assumption for growth in freighter movements in its 2013 UK Aviation Forecasts at 0.4% p.a"	Paragraph 3.6.1 of Volume 2 in section "**Department for Transport National Level Forecasts**"	Paragraph 2.6.1 in section "**Department for Transport National Level Forecasts**"	No change. However, the DfT 2013 UK Aviation Forecasts have been superseded by the DfT 2017 UK Aviation Forecasts that now assume no growth in freighter aircraft movements.
2.47 – "Given the existence of a definitive 'official' UK forecast for freighter movements over the period to 2050, it is not clear why Azimuth rely on global forecasts for air freight produced by the manufacturers Boeing and Airbus for the purpose of selling aircraft (paragraph 2.1.10) as a basis for the longer term projections of freighter movements at Manston in their Volume III (paragraph 2.3.2)."	Paragraph 2.1.10 of Volume III in sub-section "**Air Freight Forecasting Method**" Paragraph 2.3.2 of Volume III in sub-section "**Long-term Freight Forecasting Model**"	Paragraph 2.1.11 of Vol III in sub-section "**Air Freight Forecasting Method**" Paragraph 2.3.2 in sub-section "**Long-term Freight Forecasting Model**"	No change
2.48 – "Taken together, these reports point to a declining market share for freighter aircraft in mature markets such as the UK, where there is a good supply of bellyhold capacity. It is, hence, not reasonable to use the Boeing and Airbus growth rates as a basis for projecting future growth in movements by pure	Paragraph 2.3.2 of Volume III of sub-section "**Long-term Freight Forecasting Model**"	Paragraph 2.3.2 of Vol III in sub-section "**Long-term Freight Forecasting Model**"	No change

York Aviation (YAL) Reference and Para	Azimuth Old Para	Azimuth New Para	Implications / Summary of Change
freighter aircraft to and from the UK, particularly given the existence of DfT projections for such movements. Rather than being conservative, as suggested at paragraph 2.3.2 in Volume III, the use of a 4% per annum growth rate for years 10 to 20 at Manston is highly optimistic, and is certainly not supported by the DfT's analysis of the UK market."			
2.49 – "Having rejected the recognised methodologies for forecasting freight demand at an airport, Azimuth rely on interviews with 24 individuals and/or organisations as set out in Table 4 of their report. To a large extent, these are people with past connections with Manston and who may not have a totally unbiased view on the desirability of it re-opening. It is notable that few cargo airlines or large scale air freight operators were interviewed, rather the list is dominated by local interested parties and logistics firms, not all of which are still in business. In some cases, throughout the remainder of Volume II, individuals are referred to who are not listed in Table 4 and,	Table 4 of Volume II in sub-section "**Interview data collection**" Paragraph 4.3.1 of Volume II in sub-section "**Semi-structured Interview Schedule Design**"	Table 3 in sub-section "Interview data collection" Paragraph 3.3.1 of Volume II in sub-section "**Semi-structured Interview Schedule Design**"	No change

York Aviation (YAL) Reference and Para	Azimuth Old Para	Azimuth New Para	Implications / Summary of Change
in other cases, individuals or organisations are referred to in different terms to those listed in the table. This does not suggest a very robust or rigorous approach to setting out the potential for Manston. Although the framework of questions is set out at paragraph 4.3.1, we are unable to identify any questions that would enable an assessment to be made of future passenger or freight volumes that would be likely to use Manston and which could be used as the basis for any forecast of future usage."			
2.51 "This analysis is generic and of no direct relevance to the potential for Manston. In particular, no linkage is drawn between the commodities which typically use air freight set out at paragraph 5.1.2 and the economic sectors active in Kent. Significantly, at paragraph 5.1.5, Azimuth cite a respondent that made clear that "tendered" prices determine how air freight moves. This is a powerful reason why bellyhold will in most instances win over pure freighter operations. Issues of price for pure freighter operations are reinforced at	Paragraph 5.1.2 of Volume II in sub-section "**Findings by Category of Interview Question**" Paragraph 5.1.5 of Volume II in sub-section "**Findings by Category of Interview Question**" Paragraph 5.1.10 of Volume II in sub-section "**Findings by Category of Interview Question**"	Paragraph 4.1.2 of Volume II in sub-section "**Findings by Category of Interview Question**" Paragraph 4.1.5 of Volume II in sub-section "**Findings by Category of Interview Question**" Paragraph 4.1.10 of Volume II in sub-section "**Findings by Category of Interview Question**"	No change

York Aviation (YAL) Reference and Para	Azimuth Old Para	Azimuth New Para	Implications / Summary of Change
paragraph 5.1.10, particularly in relation to the risks associated with higher fuel prices."			
2.52 - "There are then a number of comments regarding the current difficulties of operating at Heathrow at paragraph 5.1.6ff."	Paragraph 5.1.6ff of Volume II in sub-section "**Findings by Category of Interview Question**"	Paragraph 4.1.6ff of Volume II in sub-section "**Findings by Category of Interview Question**"	No change
2.54 – "Again, paragraph 5.1.15 highlights the dominance of bellyhold freight. Whilst noting that the A380 aircraft has more limited space for bellyhold cargo than B747s at paragraph 5.1.14, Azimuth neglect to point out that other new aircraft, such as B787 and A350 aircraft, do not suffer from similar reductions in space and capacity and continue to offer substantial bellyhold opportunities and capacity."	Paragraph 5.1.15 of Volume II in sub-section "**Findings by Category of Interview Question**" Paragraph 5.1.14 of Volume 2 in sub-section "**Findings by Category of Interview Question**"	Paragraph 4.1.15 of sub-section "**Findings by Category of Interview Question**" Paragraph 4.1.14 of sub-section "**Findings by Category of Interview Question**"	No change
2.55 – "The response cited at paragraph 5.1.19 makes clear that the most important factor in considering freighter operations is "cost, speed and access to road networks", which is not a condition which Manston can meet for the majority of the UK. The local transport firms (paragraph 5.1.21) clearly saw an advantage for them in Manston re-opening but it is far	Paragraph 5.1.19 of Volume II in sub-section "**Findings by Category of Interview Question**" Paragraph 5.1.21 of Volume II in sub-section "**Findings by Category of Interview Question**" Paragraph 5.1.20 of Volume II in sub-section "**Findings by Category of Interview Question**"	Paragraph 4.1.19 of Volume II in sub-section "**Findings by Category of Interview Question**" Paragraph 4.1.21 of Volume II in sub-section "**Findings by Category of Interview Question**" Paragraph 4.1.20 of Volume II in sub-section "**Findings by Category of Interview Question**"	No change

York Aviation (YAL) Reference and Para	Azimuth Old Para	Azimuth New Para	Implications / Summary of Change
less clear that this was reflected by the broader industry. Significantly, paragraph 5.1.20 does not address the operational reasons why major freight forwarders seek to locate close to Heathrow, Stansted or East Midlands, except possibly for their city centre sales offices."			
2.56 – "The response quoted at paragraph 5.1.23 makes clear that for Manston to be an attractive option to freighter operations, it would need to offer night operations."	Paragraph 5.1.23 of Volume II in sub-section "**Findings by Category of Interview Question**"	Paragraph 4.1.23 of Volume II in sub-section "**Findings by Category of Interview Question**"	No change
2.58 – "The one airline interviewed made clear (paragraph 5.2.3) that "success at Manston depended upon identifying a niche market and becoming known for excellence. In particular, suggestions included a perishables centre, handling of live animals, easy access for charter flights, and handling cargo that is not necessarily straightforward". We would have expected the remainder of the report to concentrate on quantifying the size of this niche market, including any Brexit implications for exports (paragraph 5.2.1)."	Paragraph 5.2.3 of Volume II in sub-section "**Freight-Focussed Findings**" Paragraph 5.2.1 of Volume II in sub-section "**Freight-Focussed Findings**"	Paragraph 4.2.3 of Volume II in sub-section "**Freight-Focussed Findings**" Paragraph 4.2.1 of Volume II in sub-section "**Freight-Focussed Findings**"	No change

York Aviation (YAL) Reference and Para	Azimuth Old Para	Azimuth New Para	Implications / Summary of Change
2.59 – "The spurious suggestion that freight might be "banned" from Heathrow (paragraph 5.2.6) and Manston might benefit is clearly nonsense in the context of the Government's support for a third runway to provide capacity for freight in the bellyholds of passenger aircraft as much as for passengers."	Paragraph 5.2.6 of Volume II in sub-section "**Freight-Focussed Findings**"	Paragraph 4.2.6 of Volume II in sub-section "**Freight-Focussed Findings**"	No change despite the clear statement in the Airports NPS that R3 at Heathrow is intended to double the freight capacity of Heathrow.
2.60 – "Whilst the suggestion from Coyne Airways about the potential for Manston to offer fuel cost savings when flying south from the UK (paragraph 5.2.11) is interesting, it appears not to take any account of the locations where freight is generated in the UK or where it is consolidated into viable loads."	Paragraph 5.2.11 of Volume II in sub-section "**Freight-Focussed Findings**"	Paragraph 4.2.11 of Volume II in sub-section "**Freight-Focussed Findings**"	No change
2.61 – "Azimuth also claim that the bellyhold model is broken and that there is about to be a shift back to pure freighter operations at paragraph 5.2.25 but this is pure speculation and at odds with other industry commentators (see Airbus freighter forecasts which project an increasing share of bellyhold globally) and the UK Government's view as expressed by the Department for Transport."	Paragraph 5.2.25 of Volume II in sub-section "**Freight-Focussed Findings**"	Paragraph 4.2.25 of Volume II in sub-section "**Freight-Focussed Findings**"	No change

York Aviation (YAL) Reference and Para	Azimuth Old Para	Azimuth New Para	Implications / Summary of Change
2.62 – "Whilst paragraph 5.2.24 says there was underinvestment in facilities by the previous owners, the quotation from Finlays at paragraph 5.2.26 makes clear that Manston previously offered a good level of service. Hence, there is little evidence to suggest that underinvestment was any impediment to Manston attaining its natural share of the market in the past. Although Finlays have now relocated their operation back to Stansted, we would accept that they might choose to return to Manston with a similar number of movements as previously if the facilities were reinstated and provided the cost of operating was competitive compared to Stansted. There may also be scope for some humanitarian and military flights (paragraph 5.2.48) but these will be small in number and not the basis for a viable operation of the Airport."	Paragraph 5.2.24 of Volume II in sub-section "**Freight-Focussed Findings**" Paragraph 5.2.26 of Volume II in sub-section "**Freight-Focussed Findings**" Paragraph 5.2.48 of Volume II in sub-section "**Freight-Focussed Findings**"	Paragraph 4.2.24 of Volume II in sub-section "**Freight-Focussed Findings**" Paragraph 4.2.26 of Volume II in sub-section "**Freight-Focussed Findings**" Paragraph 4.2.49 of Volume II in sub-section "**Freight-Focussed Findings**"	No change
2.63 – "At paragraph 5.2.45, Fedex's criteria for an airport to be attractive to an integrator are set out and these seems to describe the characteristics of their main UK base	Paragraph 5.2.45 of Volume II in sub-section "**Freight-Focussed Findings**"	Paragraph 4.2.46 of sub-section "**Freight-Focussed Findings**"	No change No change

York Aviation (YAL) Reference and Para	Azimuth Old Para	Azimuth New Para	Implications / Summary of Change
at Stansted. There is then a discussion about some of the problems DHL perceive at Heathrow but, of course, DHL's principal UK operation is focussed at East Midlands where they have an extensive operation. From our work with the integrators and with the Freight Transport Association, we know that Manston is too peripheral for integrator operations serving the UK. Integrators have a strong preference for locations more centrally located in the UK with good road access to all of the major markets. The availability of land for warehouses (paragraph 6.2.6) is far less important than a location central to the market and the availability of good road access, neither of which are characteristics of Manston. This would apply equally to the suggestion that Amazon might locate there or that the Airport could become a base for drone operations (6.3.24-27)."	Paragraph 6.2.6 of Volume II in sub-section "**Market Opportunities for Manston Airport**" Paragraphs 6.3.24-27 of Volume II in sub-section "**External Environment Scenarios**"	Paragraph 5.2.6 of Volume II in sub-section "**Market Opportunities for Manston Airport**" Paragraphs 5.3.24-27 of Volume II in sub-section "**External Environment Scenarios**"	Removed explicit quote from Atlas Air indicating support for Manston Airport, replaced by comment on discussions with Atlas Air. The position regarding Atlas Air's support needs to be clarified.
2.67 – "Again, there is reliance on our work for TfL and the FTA (paragraph 6.1.8) to justify the conclusions reached. As stated	Paragraph 6.1.8 of Volume II in sub-section "**Attracting Air Freight to Manston Airport**"	Paragraphs 5.1.8 of Volume II in sub-section "**Attracting Air Freight to Manston Airport**"	No change

York Aviation (YAL) Reference and Para	Azimuth Old Para	Azimuth New Para	Implications / Summary of Change
above this work does not support RSP's case."			
2.69 – "At paragraph 6.3.1, Azimuth set out 9 potential scenario drivers for Manston. However, it is not clear how these scenario drivers have been taken forward to the forecasts set out in Volume III, which do not set different potential scenarios for growth…"	Paragraph 6.3.1 of Volume II in sub-section "**External environmental scenarios**"	Paragraphs 5.3.1 in Volume II in sub-section "**External environmental scenarios**"	No change
2.70 – "Section 7 sets out the conclusions from Volume II. According to Azimuth (paragraph 7.1.1), the key issues that are seen to favour Manston are…"	Paragraph 7.1.1 of Volume II in sub-section "**Recommendations**"	Paragraph 6.1.2 of Volume II in sub-section "**Recommendation**"	No change but prefaced now by paragraph 6.1.1 which states *"It is recommended that the airport operator incorporate the opportunities shown below into their future development and marketing plans".* This suggests strongly that there is less certainty about the deliverability of the opportunities at Manston than is implied by <u>all</u> of these opportunities being included within the RSP forecasts for Manston.
2.71 – "Based on their analysis, Azimuth then set out (at paragraph 7.1.2), the markets which it believes that Manston could attract"	Paragraph 7.1.2 of Volume II in sub-section "**Recommendations**"	Paragraph 6.1.3 of Volume II in sub-section "**Recommendation**"	No change
2.73 – "The key conclusion drawn by Azimuth is that "This report demonstrates the potential demand	Paragraph 7.0.1 of Volume II in sub-section "**Conclusions**"	Paragraph 6.0.1 of Volume II in sub-section "**Conclusions**"	No change

York Aviation (YAL) Reference and Para	Azimuth Old Para	Azimuth New Para	Implications / Summary of Change
for Manston Airport, indicating its viability and clearly showing that Manston Airport is a valuable local, regional and national asset, providing airport infrastructure badly needed by the UK." (Paragraph 7.0.1)"			
2.76 – "The forecasts set out in Volume III draw extensively on the analysis in Volumes I and II. Although stated to be derived on a 'bottom up' basis (Executive Summary Page 1) and claimed to be more conservative than top down, econometrically driven, projections, reliance is still placed, at paragraph 1.1.1…"	Paragraph 1.1.1 of Volume III in sub-section "**Background**"	Paragraph 1.1.1 in sub-section "**Background**"	Minor rewording of language. No substantive change to continued reliance on York Aviation work despite the reliance on this work having been refuted.
2.77 – "Paragraph 2.1.2 again suggests that the literature review undertaken showed that "a qualitative approach was the most appropriate method through which to gather data on the potential demand for an individual airport". Whilst we agree that freight forecasting is difficult, as Azimuth themselves note, at paragraph 2.1.4, qualitative forecasts still need to be based on "market data" and, at paragraph 2.1.6, Azimuth go on	Paragraph 2.1.2 of Volume III in sub-section "**Air Freight Forecasting Method"** Paragraph 2.1.4 of Volume III in sub-section "**Air Freight Forecasting Method**" Paragraph 2.1.6 of Volume III in sub-section "**Air Freight Forecasting Method**"	Paragraph 2.1.2 of Volume III in sub-section "**Air Freight Forecasting Method**" Paragraph 2.1.4 of Volume III in sub-section "**Air Freight Forecasting Method**" Paragraph 2.1.7 of Volume III in sub-section "**Air Freight Forecasting Method**"	No change

York Aviation (YAL) Reference and Para	Azimuth Old Para	Azimuth New Para	Implications / Summary of Change
to refer to the anecdotal information collected in the interviews as primary market data."			
2.80 – "Azimuth place reliance on both the overspill argument (paragraph 2.2.2) and that there will be a reversal away from the existing preference for bellyhold for most types of air freight, despite the overwhelming evidence that this is likely to remain the case in future due to the lower freight rates available…"	Paragraph 2.2.2 of Volume III in sub-section "**Short and Medium Term Freight Forecasting Model**"	Paragraph 2.2.2 of Volume III in sub-section "Short and Medium Term Freight Forecasting Model"	No change
2.82 – "At paragraphs 2.2.6 and 2.2.7, Azimuth set out the methodology they have used for deriving freight movements and tonnage for Manston. In essence, these movement forecasts are entirely based on claimed confidential discussions with airlines, airports and others involved in the industry, which are then converted to freight tonnage based on the capacity of each aircraft and assumed load factors. These discussions would appear to be different from the list of interviewees reported in Volume II, which included only 1 airline	Paragraph 2.2.6 of Volume III in sub-section "**Short and Medium Term Freight Forecasting Model**" Paragraph 2.2.7 of Volume III in sub-section "**Short and Medium Term Freight Forecasting Model**" Paragraph 2.2.9 of Volume III in sub-section "**Short and Medium Term Freight Forecasting Model**"	Paragraph 2.2.6 of Volume III in sub-section "**Short and Medium Term Freight Forecasting Model**" Paragraph 2.2.7 of Volume III in sub-section "**Short and Medium Term Freight Forecasting Model**" Paragraph 2.2.9 of Volume III in sub-section "**Short and Medium Term Freight Forecasting Model**"	No change

York Aviation (YAL) Reference and Para	Azimuth Old Para	Azimuth New Para	Implications / Summary of Change
(unlikely itself to relocate its single European operation to Manston) and no other airports. Although it is claimed (paragraph 2.2.9) that switching costs have been taken into account, there is no explanation as to how these costs have been factored into the assessment of what operations Manston might attract."			
2.83 – "A vague list of potential operations is set out at paragraph 3.2.3, albeit with specific assumptions then stated about the loadings on each…" [Also mentioned in YAL para 2.85]	Paragraph 3.2.3 of Volume III in sub-section "**Freight Forecast by Tonnage**"	Paragraph 3.2.3 of Volume III in sub-section "**Freight Forecast by Tonnage**"	Acknowledgement that some return legs can be empty has been added. In some cases, global growth rates from IATA have been added but these are not relevant to assessing the potential for such operations at Manston.
2.88 – "Although not the main focus of this summary report, we note that the passenger forecasts, set out by Azimuth in Section 2.4"	Title for sub-section 2.4 in Volume III "**Passenger forecasting method**"	Title for sub-section 2.4 in Volume III "**Passenger forecasting method**"	No change
2.91 – "In overall terms, the forecasts presented by Azimuth at Table 1 of Volume III are simply not credible and do not provide a robust basis for promoting a DCO."	Table 1 in Volume III "**Summary 20 year freight and passenger forecast"**	Table 1 in Volume III "**Summary 20 year freight and passenger forecast"**	Table unchanged. Paragraph below has now removed "*Nonetheless, the forecast shows the airport exceeding the Nationally Significant Infrastructure Project (NSIP) criteria for 10,000 freight movements by Year 6*".
Footnote 52 [from YAL Para 4.9] – "We are unclear why 19 Code E	Table 2 in Volume III "**Freighter Movements by Year by ICAO**	Table 2 in Volume III "**Freighter Movements by Year by ICAO**	Code F column has been removed. Code D movements have

York Aviation (YAL) Reference and Para	Azimuth Old Para	Azimuth New Para	Implications / Summary of Change
stands are proposed given that the fleet mix at 2039 shows 85% of aircraft (at 17,171 annual cargo aircraft movements) being by aircraft smaller than Code E dimensions."	**Design Code"** in sub-section "**Freight Forecasts by Movements**"	**Design Code"** in sub-section "**Freight Forecasts by Movements**"	significantly decreased whilst Code E movements have significantly increased. The reasons for this is unexplained and this is inconsistent given that the total tonnages and tonnage assumptions per movement have not changed. This cannot be correct.
5.4 – "Azimuth spend some time considering the appropriate employment density on which to base an assessment of direct employment. They ultimately conclude that East Midlands Airport provides an appropriate comparator (see paragraph 4.1.4 of Volume IV)…"	Paragraph 4.1.4 of Volume IV in sub-section "**Macro Level Forecasts**"	Paragraph 4.2.1 of Volume IV in sub-section "**Comparator airport figures**"	Similar points but different wording, and a clarification over the calculation has been added.
5.8 – "In examining the employment projections presented (Section 5.1 of Volume IV), it appears that no allowance has been made for either productivity growth or returns to scale over time and as the Airport grows.	Section 5.1 of Volume IV titled "**Forecast Job Creation Resulting from Operations at Manston Airport**"	Section 5.1 of Volume IV is titled "**Forecast Job Creation Resulting from Operations at Manston Airport**"	No change here but some allowance has been made for productivity effects as set out in Volume IV at paragraph 4.3.3. Other points regarding the inappropriate employment density have not been addressed.
5.10 – "Section 7 of Volume IV discusses other socio-economic impacts. In particular, it talks about contributions to GDP. Para 7.1.1 describes GDP as "a monetary measure of the state of a Region's or a Country's economy"	Paragraph 7.1.1 of Volume IV in sub-section "**Gross Domestic Product**"	Paragraph 8.1.1 of Volume IV in sub-section "**Gross Domestic Product**"	Same error repeated. Definitions for acronyms are added.

York Aviation (YAL) Reference and Para	Azimuth Old Para	Azimuth New Para	Implications / Summary of Change
5.11 – "The comments in Paragraph 7.1.7 describing how Manston could contribute significantly to Thanet's Economic Growth Strategy aspirations in terms of GVA per job and per capita are, in reality, unsupported."	Paragraph 7.1.7 of Volume IV in sub-section "**Gross Domestic Product**"	Paragraph 8.1.7 of Volume IV in sub-section "**Gross Domestic Product**"	No change

APPENDIX D: YORK AVIATION FEBURARY 2018 NOTE

York Aviation

Manston Airport

RSP Consultation January 2018 – Further Comments on Azimuth Report *"Manston Airport – A Regional and National Asset"*

1. In this note we comment on the revised material presented in the 4 volumes of the Azimuth Report. However, much of this report remains unchanged and the significant shortcomings identified in our earlier report[1] have largely not been addressed and, where new material has been added, this fails to correct the previous misinterpretations.

2. Ultimately, Azimuth still seek to rely on our work for the Freight Transport Association and for Transport for London to justify their freighter aircraft movement forecasts despite our having made clear in our earlier report that this work cannot be interpreted in the way that Azimuth seek to do.

3. In this note, we address the new points made by Azimuth in each of the 4 volumes in turn.

Azimuth Report Volume I – Demand in the South East of the UK

Section 2 – UK Airport Capacity

4. As we pointed out at paragraphs 2.8 to 2.11 of our earlier report, almost all of the evidence presented by Azimuth to highlight the need for more airport capacity in the South East of England relates to the need for more airport capacity to meet growing passenger demand for flights to a wide range of global destinations fed by hub connecting services at Heathrow. These passenger flights also provide significant bellyhold freight capacity. Indeed, the recent non-statutory consultation material published by Heathrow Airport makes clear that, overall, the new passenger services and additional capacity made possible by the third runway will result in a doubling of freight capacity at the Airport[2].

5. The reference, at paragraph 2.1.2 of the Azimuth Report, to the Secretary of State for Transport's introduction to the new UK Aviation Forecasts in October 2017, stating that the runways at the London airports will be full at an earlier date than previously thought, needs to be seen in this context. It is clear that the reason that runway capacity is filling up more quickly than previously thought is due to growth in passenger aircraft as the actual decline in pure freighter flights is highlighted in the document at Figure 4.5[3] reproduced below.

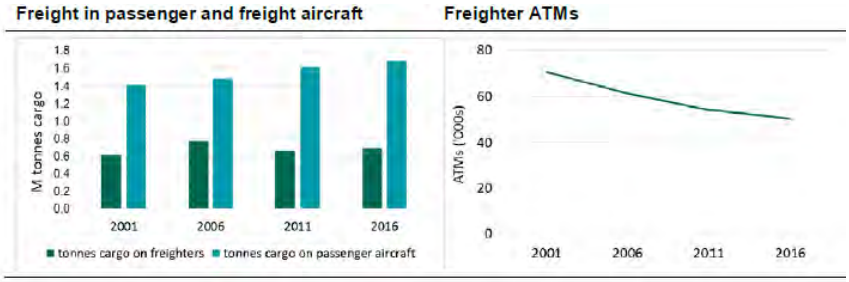


Figure 4.5 Historic freight carried at all modelled airports

[1] "SUMMARY REPORT ANALYSING USE OF YORK AVIATION MATERIAL BY RIVEROAK STRATEGIC PARTNERS AND ASSESSMENT OF CAPABILITY OF MANSTON AIRPORT" submitted to PINS and made available on the Stone Hill Park website in November 2017.

[2] The Case for Heathrow Expansion, Heathrow Airport Ltd, January 2018.

[3] UK Aviation Forecasts, Department for Transport, October 2017, corrected version issued 25th January 2018 as a result to discrepancies in the use of CAA Statistics data in the original report brought to the DfT's attention by York Aviation.

6. These forecasts do not support the need for more capacity for pure freighter aircraft. Reference, at paragraph 4.0.1 of the Azimuth report, to the difference between the constrained and unconstrained passenger forecasts are simply irrelevant to the requirement for capacity for freighter aircraft and, in practice, the constrained forecast represents an unrealistic situation of no further capacity expansion at any of the UK airports over the period to 2050. The Department for Transport's (DfT) long term assumption is that there will be no growth in pure freighter aircraft movements across all UK airports as we highlighted at paragraph 3.26 of our previous report and this is the relevant context for considering whether there is a 'need' for Manston. Azimuth are simply wrong when they say that the DfT's assessment of the extent to which runway capacity is full *"may not reflect the need for freighter aircraft going forward"* as it is clear from Table 68 of the UK Aviation Forecasts report that freighter ATMs are included within the assessment

7. Hence, Azimuth's inference from this information that there is a strong economic case for more freighter airport capacity in the South East of England is simply not correct and the evidence regarding the economic benefits of additional passenger aircraft capacity has been misapplied.

Section 3 – Air Freight Capacity

8. Additional references have been added, at paragraphs 3.15 and 3.16 of the Azimuth report, to the prospects for growth in demand for pure freighter operations globally. However, this is not relevant to the prospects for Manston as more specific information is available of the actual trends and requirements in the UK market, where there are high levels of bellyhold capacity available at a high frequency of service negating the need for substantial additional freighter markets. The UK market for freighter aircraft is analysed in detail in Section 3 of our November 2017 report. The fact that freighters carry a lower proportion of cargo to/from the UK than the global average (Azimuth paragraph 3.2.1) is a reflection of the strong global position of the UK in terms of the provision of long haul scheduled services offering passenger and freight capacity. There is simply no need for additional freighter operations given the high quality offer made available on passenger aircraft. These flights offer more than sufficient competition to ensure that shippers are not disadvantaged, with the costs of bellyhold being lower than pure freighter tariffs in any event.

9. Nor does the additional information about short term shortage of freight capacity in the run-up to Christmas 2017, consequential increases in freight rates across Europe and congestion in and around the cargo centre at Heathrow (para 3.1.8), demonstrate a requirement for additional pure freighter operations. What this additional information evidences is the shortage of bellyhold capacity, otherwise, if pure freighter operations were an economic solution for shippers, additional ad hoc flights would have been operated to Stansted or East Midlands to cover the shortfall, both airports having spare capacity for additional freighter movements. The fact that such extra flights were not operated is clear evidence that even at higher freight rates, additional freighter operations were not economic. The position is further evidenced by the reference at paragraph 3.2.5 to a 10% increase in cargo handled at Heathrow in 2017. Heathrow's current consultation on its expansion makes clear an intention to resolve congestion issues in and around the cargo centre, improving facilities and access to accommodate 100% growth in cargo throughput[4].

10. As noted earlier, this section of the Azimuth report continues to place inappropriate reliance on our earlier work for Transport for London and the Freight Transport Association. As we made clear at paragraphs 2.17 to 2.28 of our earlier report, this work cannot be interpreted in the way Azimuth seek to do. It is simply wrong to state, as Azimuth do at paragraph 3.4.6 of their report that we identified *"that an operational Manston Airport is the only viable option"*. This serious misrepresentation of our 2015 report for the Freight Transport Association, which did no more than mention that Manston had handled some freighter traffic prior to its closure, has not been corrected.

[4] Our Emerging Plans, Heathrow Airport Ltd, January 2018.

Section 4 – Air Freight Capacity in the UK

11. Section 4.1 of the Azimuth report relating to Stansted Airport has been extensively revised, noting that the Airport no longer intends to seek an increase in its annual movement limits but neglects to mention the fact that movements are reserved for freighter aircraft under the 2008 planning permission under condition ATM1: *"a limit on the number of occasions on which aircraft may take-off or land at Stansted Airport of 264,000 ATMs (Air Transport Movements) during any 12 calendar month period, of which no more than 243,500 shall be PATMs (Passenger Air Transport Movements) and no more than 20,500 shall be CATMs (Cargo Air Transport Movements)."* Of the 20,500 movements reserved for freighter aircraft, only 11,600 were used in 2016 meaning that there were almost 10,000 freighter aircraft movements of spare capacity at that airport alone. Indeed, the inference that Stansted will seek to displace freighter activity, at paragraph 4.1.5 of the Azimuth report, is simply not borne out by the facts. Attaining the planned 43 mppa with 243,500 PATMs would require an average number of passengers per aircraft of c.176, up from c.161 in 2017, which is a realistic target given that the new generation of Ryanair aircraft (Boeing 737 max) will provide increase in seat capacity by 9 passengers on each aircraft before any allowance is made for Stansted's growing portfolio of long haul services. The Stansted Airport Sustainable Development Plan 2015 makes clear that Stansted intends to increase pure freighter activity and expressly states the potential to increase from 230,000 tonnes to 400,000 tonnes of freight on dedicated aircraft[5].

Section 5.3 – E-commerce

12. A section has been added to the Azimuth report regarding growth in e-commerce and the effect on demand for air freight. However, of itself, this tells us nothing about the requirement for more pure freighter aircraft and may simply reflect growing demand for bellyhold capacity at economic freight rates.

Section 6 – Manston Airport

13. Section 6.1 of the Azimuth report adds substantial text about the history of Manston Airport, expanding on the original assertions that the failure of the Airport can be attributed by the failure of the previous owners to invest in facilities. As we noted at paragraph 2.62 of our earlier report, users of Manston previously appeared happy with the standard of service offered so there is no evidence that lack of investment was an impediment to growth, rather it was an absence of a market. Furthermore, investment in freight facilities at Stansted and East Midlands Airports was in response to clear demand from particular operators (e.g. DHL's own facility at East Midlands) rather than speculatively ahead of proven demand. Despite investment in cargo facilities, Doncaster Sheffield Airport attracted only 688 air freighter movements in 2016.

14. Reference has been added, at paragraph 6.2.3 of the Azimuth report, to our 2011 report on the Economic Impact of Night Flying Report for Manston where we noted that Manston stood to benefit from the levels of air freight growth being projected by Boeing and Airbus. It is important to recognise that these remarks were made in the context of a Government policy position which did not support the provision of any additional capacity across the London airports and whilst Manston was still operational in the market. This is not the situation today. Furthermore, at the time that this report was written, it was assumed that the decline observed in pure freighter movements to/from the UK could be attributed to the recession and that there would be an upturn in such movements with economic recovery. Clearly, we now have evidence that this has not been the case and there has been a structural change in the industry notwithstanding the availability of spare capacity for freighters at airports such as Stansted and East Midlands.

[5] Stansted Airport, Sustainable Development Plan 2015, Summary page 9.

Section 7 – Future Potential Opportunities for Manston

15. Whilst noting the responses to RSP's initial Summer 2017 consultation (paragraph 7.1.6 of the Azimuth report), it is important to note that this consultation does not represent a systematic or unbiased sample, particularly given the shortcomings in the case presented. As in the original Azimuth report, the findings of an earlier comprehensive resident survey conducted by MORI are referenced (paragraph 7.1.7). Azimuth seek to construe this as being supportive of growth on the basis that residents say they were little affected by noise from airport operations, including at night. Of course, at that time, the Airport was operating under the restrictions of a Section 106 Agreement which did not allow operations at night (other than for emergencies). Hence, it is hardly surprising that residents report that they were little disturbed by operations at night. However, when the MORI report is examined more fully, it is evident over half of the residents were concerned that expanded operations would give rise to negative impacts from night operations (page 5 of the MORI report[6]). This needs to be seen in the context of the substantial number of night movements being projected by RSP, as we discuss later in this note.

16. A new Section 7.5 has been added on slot restrictions at Amsterdam, presumably to counter our questioning of why Coyne Airways would relocate from Amsterdam to Manston in our earlier report. This sub-section neglects to mention that Schiphol Group is extending the runway at nearby Lelystad to accommodate overspill traffic[7], primarily for leisure flights so as to free up slots for 'Mainport' related activity at Schiphol which would include cargo services. Indeed, Schiphol Group is also investing in improving its cargo handling facilities[8] so, notwithstanding the application of the 80% 'use it or lose it' rule[9] in the short term which could impact disproportionately on cargo operators to the extent that they do not use all of their allocated slots, Schiphol has put in place plans to address the forthcoming capacity constraint through enabling Lelystad to act as a reliever airport, albeit that Airport will not be available until 2019. There are also ongoing discussions regarding the long term future of the existing movement limit[10]. In any event, the existence of a potential constraint does not automatically make Manston a preferred alternative as Brexit is likely to make the airport an unattractive alternative for cargo airlines seeking to serve the EU market more broadly. Other available airport capacity in continental Europe, including that at Lelystad, is more likely to be a first choice for any operations displaced from Schiphol.

Azimuth Report Volume II – A Qualitative Study of Potential Demand

Section 3 – Review of Air Freight Forecasting Literature

17. At paragraph 3.6.4, Azimuth have added a reference to the DfT 2017 UK Aviation Forecasts but seek to dismiss the projected no growth in freighter aircraft movements as merely an assumption (see Volume III, paragraph 2.1.14), referring to the historic tonnage growth percentages cited by the DfT. Unfortunately, Azimuth do not appear to have realised to what the percentage growth figures refer. The 5% growth referred to by DfT[11] is total growth in cargo carried across freighter and passenger aircraft combined over the period 2011 to 2016. When mail is included, tonnage growth over the 5 years has been only 3.2%, and there has be negative growth in combined tonnage on freighter aircraft of -2.2%[12]. In contrast, the combined tonnage of freight and mail carried on passenger aircraft grew by 1.1% over the period. Unfortunately, Azimuth's misunderstanding of the DfT data has been carried through to the forecasts in Vol III, which cover both freight and mail operations projected for Manston.

[6] http://hbm2015.com/wp-content/uploads/2016/08/2005-04-S106-Consultation-MORI-results.pdf
[7] https://www.lelystadairport.nl/en/future
[8] http://www.annualreportschiphol.com/results/our-results/competitive-marketplace
[9] EU Slot Allocation Regulation 95/93 as amended.
[10] https://theloadstar.co.uk/schiphol-artificially-restricting-airport-cargo-capacity-illegal-slot-rules/
[11] In the amended version of UK Aviation Forecasts 2017.
[12] CAA Airport Statistics, adjusted for Belfast International data as advised by DfT.

Azimuth Report Volume III – The Forecast

Section 2 – Review of Air Freight Forecasting Literature

18. At paragraph 2.1.6, Azimuth refer to a peer review of the forecasting methodology by Loughborough University but this peer review has not been published as would be normal best practice. We have set out at length in our previous report (paragraphs 2.76 to 2.87) the flaws in the approach adopted. These criticisms have not been addressed. In our view, the forecasts are purely aspirational and not grounded in the evidence. As such, they are highly likely to have been infected by optimism bias within the RSP team.

19. At paragraph 2.1.10, Azimuth cite recent growth in freight tonnage from an IATA bulletin and capacity growth but, again, these are combined freighter and bellyhold figures and fail to take account that load factors remain low in Europe at 46.4% over the 12 months as reported by IATA[13]. This suggests that there is substantial potential to increase cargo tonnage flown without the need to increase aircraft movements, notwithstanding the comments at paragraph 2.3.5 of the Azimuth report that there may be instances where volume is a better measure of how full an aircraft may be rather than weight, an issue which is likely to relate to special consignments rather than the majority of high value, low volume goods carried as air freight. Azimuth continue to rely inappropriately on combined cargo tonnage figures and projections as a proxy for expected growth in cargo aircraft movements. As made clear in our earlier report (paragraphs 2.47 to 2.48), the use of such data is not appropriate for considering the prospects for Manston.

20. At paragraph 2.1.13, Azimuth cites CAA Airport Statistics for cargo growth for 2016, seeking to suggest some reversal of past trends away from freighter aircraft movements. Paragraph 2.3.6 also cites short term tonnage increases on freighter aircraft to infer a longer trend. There is danger in relying on single year figures but the data for 2017 show cargo tonnage across the London airports growing by 9.8%, in line with the UK average, but that carried on freighter aircraft growing by only 7% with a 5.5% fall in cargo aircraft movements in the London area. This tends to confirm the long term trend towards the increasing use of bellyhold capacity on the wide global network served from the main London airports.

21. Most significantly, in the light of this misinterpretation of short term trends, Azimuth compound the error by taking the 4%[14] figure for growth in cargo tonnage on freighter aircraft over a 5 year period, cited in the original DfT Aviation Forecasts 2017[15] , and use this as a justification for continuing to use the Boeing/Airbus forecast of 4% per annum growth in global freight tonne kilometres as the basis of forecasting freighter movements at Manston for years 10 to 20 of the forecast. Leaving aside the questionable validity of using a freight tonnage forecast as the basis for forecasting freighter aircraft movements, this is mathematically wrong and the average annual growth rate in cargo tonnage on pure freighter aircraft is no more than 1% per annum based on the updated DfT growth of 5% in cargo tonnage (see paragraph 17 above). On this basis, the updated Azimuth report presents identical forecasts as previously, although how clearly based on an error in the growth rate applied. Even if the short term 'bottom up' forecasts were correct, which we dispute (see paragraphs 2.80 to 2.85 of our earlier report), the eventual forecast at year 20 should be no greater than 12,789 freighter movement rather than 17,171 movements.

Section 3 – Manston Airport Freight Forecast

22. The updated Azimuth report has provided no further substantiation of the short term forecasts, nor of the forecast fleet mix, so undermining the weight which can be attached to the reliance on the short term forecasts.

[13] IATA Air Freight Analysis, November 2017, page 4.

[14] Now revised to 5%.

[15] Paragraph 4.4.

23. Despite the lack of the required explanation of the derivation and make up of the forecasts in the Azimuth report, some further detail is now provided in the noise section of the updated PEIR, which sets out the details of the freight movement forecasts by airline and aircraft type (Appendix 12.3). This information is set out in a table appended to this note and we have added the relevant QC count information to illustrate some of the issues arising from the fleet mix. Significantly, the fleet mix assessed for noise is not the same as contained in Azimuth Vol III. The inconsistencies are unexplained and give rise to further doubt as to the robustness of the forecast and whether it is deliverable:

	Azimuth	**PEIR App 12.3**
Code C	43%	41%
Code D	42%	17%
Code E	13%	37%
Code F	2%	6%

24. When examined in detail, the projections underlying the whole application lack realism for the following reasons:

- ✈ Amazon - this is suggested as a B777-300ER freighter but there is no freighter variant of this aircraft; the only B777 freighters being -200 variants. Other airlines are also shown as using this type and it accounts for 26% of all freighter movements shown.

  In any event, it is not clear why Amazon would operate 5 flights a day from the US to Manston as the goods which Amazon sells in the UK are not, in the main US manufactured. This seems to confuse the claimed potential (Azimuth Vol II, section 6.3), which we dispute, for an Amazon distribution hub at Manston to serve the UK with long haul freight operations.

- ✈ Cargolux - this assumes reinstatement of the previous Cargolux flower operation which has relocated to Stansted.

- ✈ Fedex/DHL- the aircraft types shown appear to indicate a DHL operation (e.g. A330-343 aircraft, which are only operated by DHL). The integrator operation is expected to account for 22.8 movements per day or 46% of the total. Based on our knowledge of the integrator market, this is completely unrealistic as Manston is quite simply in the wrong location to serve as an integrator hub in the UK. It would also require a substantial night operation, for example at DHL's main UK base at East Midlands Airport has some 63% of freighter aircraft movements operating within the night period.

  Overall, the number of movements shown in the PEIR would imply around 8,322 annual movements by the integrator. This is around 43% of the total number of freighter movements at EMA in 2016 or around 2/3 of the current DHL operation. This is hardly realistic as it would imply Manston would be a major integrator hub, duplicating the EMA operation. It is also important to note that

freight tonnage continues to grow at EMA but the number of freighter movements have not systematically grown over the last decade.

- Pakistan Airlines - the airline no longer operate pure freighter aircraft.
- Postal - the B737 operation presupposes the development of a mail hub. Royal Mail have pared back on flying even at their main hub at EMA so it is unclear why a dedicated B737 operation would be operated from Manston.
- Russian - the types indicated have QC counts of 8 and 2 respectively on arrival and 16 on departure, with some movements shown as operating at night, in contravention of the proposed Noise Mitigation Plan banning such aircraft at night.
- TAAG Angola – the airline does not operate B747 freighters, which is the type shown, and, in any event, their operations by most aircraft types are banned from European airspace on safety grounds.

25. These basic errors reinforce the doubts expressed in our earlier report about the realism of the short term freighter movement forecasts.

Implications for Night Operations and Night Noise

26. The Noise Mitigation Plan sets out a Night Quota period from 2300-0600 and a Shoulder period from 0600-0700. The quotas proposed for each of these periods are 4,000 QC points and 2,000 QC points per annum respectively. These QC budgets can be compared to other airports where such quotas are in place:

- Luton 3,500 from 2330-0600 and 7,000 from 0600-0700
- Heathrow (from Nov 18) 5,150 from 2330-0600
- Gatwick (from Nov 18) 6,935
- Stansted (from Nov 18) 7,960

27. The proposed night noise quota of 4,000 QC points is higher than the night quota for Luton Airport and not significantly lower than that for Heathrow. Local residents will be subject to a substantial amount of noise during the sensitive night period.

28. The fleet mix information provided in Section 12 of the update PEIR shows an average of 7.1 aircraft movements per night[16] for the 7 hour night quota period. Based on the aircraft types shown and the relevant QC points, this would amount to 3,222 annual QC points, within the 4,000 quota proposed. The proposed quota would allow up to around 9 aircraft movements per night on average, assuming the same aircraft mix, equivalent to around 3,217 annual aircraft movements. It follows, therefore, that the 2,000 quota for the shoulder hour 0600-0700 would allow 4-5 aircraft movements a day. In total, the extended 8 hour night period quotas would allow 4,826 annual aircraft movements on the basis of the fleet mix shown. This could be higher if quieter aircraft were operated over time.

29. However, a key issue is the realism of the projected day/night split. The RSP/Azimuth projections indicate only 14% of freighter aircraft movements being at night whereas, at EMA, some 63% of freighter movements operate at night. Given the dominance of integrator operations within the total RSP/Azimuth forecast, this would suggest a far greater reliance on night movements than shown. Correcting the day/night balance just for the integrator operation would imply at least 14.4 aircraft movements per night on average for the integrators, rather than the 4 movements shown for these airlines in the detailed fleet forecast. Accommodating these additional movements would breach the night noise quota constraint by c.1,000 a year. In other words, either the noise quota will need to be increased or the forecast will need to be constrained to reflect that these movements are unlikely to operate.

[16] The number will clearly vary day by day in practice.

30. Indeed, the proposed night movement constraint reinforces the view that the establishment of an integrator hub at Manston is simply not credible. If an integrator hub cannot be established this would reduce the movement forecasts by 46%. At Year 10, this would mean no more than 6,425 freighter aircraft movements, even if the remainder of the forecast were correct. If this were to be grown for the longer term using the DfT's historic freight tonnage figures (see paragraph 21 above), the freighter movement forecast at Year 20 would not exceed 7,000 movements, below the threshold for a DCO.

Capability of the Airport

31. We made the point in our earlier report (paragraph 2.93) that we would have expected a clear explanation of how the forecasts for aircraft movements translated into the requirements for infrastructure. This explanation has still not been provided.

32. Prima facie, on the same basis as we assessed the 'capability' of the existing infrastructure at Manston (paragraphs 4.5 and 4.6 of our earlier report), the infrastructure proposed by RSP could have a capability of over 100,000 freighter aircraft movements a year, taking into account the night movement quotas and the passenger operations. This is clearly excessive but not explanation or justification for the scale of the facilities has been provided by RSP.

Azimuth Report Volume IV – The Economic and Social Impacts of Airport Operations

Section 3 – Forecasting the Socio-Economic Impact of Airports

33. Despite the substantial errors in the assessment of socio-economic impacts identified in Section 5 of our earlier report, Azimuth have made no attempt to correct these errors and the economic impact assessment remains as in the original Summer 2017 consultation documents.

34. At Section 3.4, further reference has been added to our 2004 study into the socio-economic impact of airports for the Airports Council International Europe. We had already pointed out to Azimuth in direct correspondence[17] that it was inappropriate to rely on 2004 data as representative of the position in 2017, not least because of increasing efficiency of passenger and cargo handling. Furthermore, as is made clear in Figure 6.5 of our 2004 report[18], the employment densities can vary quite widely across airports dependent on their characteristics so the use of averages is entirely inappropriate for any specific airport. The on-site employment estimates set out at paragraph 5.12 of our earlier report are the correct basis for assessing the employment impact of Manston as these are based on recent experience of specific UK airports, where detailed analysis of the impact has been carried out in recent years, rather than on the generic Europe-wide ratios that Azimuth seek to apply. We have not factored any extraordinary assumptions regarding future automation or productivity growth into our estimates (Azimuth paragraphs 3.46-3.47) so these are conservatively based on average rates of productivity growth as airports grow.

Section 4 – Employment Forecasts for Manston Airport

35. For the reasons explained in our earlier report, the methodology used by Azimuth for deriving indirect, induced and catalytic impacts remains flawed.

36. A new section 4.3 has been added on the location of employment, referring to work by Oxford Economics (OE) for London Luton Airport[19]. This is used by Azimuth to justify the assertion that all on-site employment will be taken by local residents. Unfortunately, Azimuth have not realised that the way in which the employment estimates were derived by OE, using Government business statistics, only measures employment by place of employment and does not reflect the place of residence of those employees so cannot be taken as a reflection of the extent to which jobs at Manston might be taken up by local residents from Thanet.

[17] E-mail of 6th October 2017.

[18] The social and Economic Impact of Airports in Europe, York Aviation for ACI EUROPE 2004

[19] The Economic Impact of London Luton Airport, Oxford Economics, November 2015.

Section 5 – Training and Education

37. New sections have been added in relation to support from East Kent College and Canterbury Christ Church University expressing support for activities that would generate jobs in East Kent. This is not specific to the RSP proposals but would also apply to employment generated through Stone Hill Park's proposals. The future of the Museums would, of course, be enhanced by Stone Hill Park's specific proposals for new facilities and a heritage aviation airport within its proposals. The prospects for a Manston Training Facility are speculative and depend, ultimately, on whether the proposals for the use of the Airport were realised in practice.

Section 6 - Tourism

38. Section 6 is a new section on tourism which is entirely aspirational, with precedents being drawn from the experience of Southend (Azimuth paragraphs 6.4.2 to 6.4.8) following expansion of passenger flights at the Airport. However, the evidence presented is circumstantial and compares tourism expenditure in the Southend area during the recession with more recent (2015) data. It does not directly relate the growth in tourism expenditure of visitors to any data on the extent to which the Airport was a factor in this increase. As is made clear in the reference to Bournemouth Airport (Azimuth paragraph 6.4.14), the ability to use an airport to leverage additional tourist visitors is dependent on the destinations offered, with Germany, Scandinavia and the Netherlands particularly highlighted as places where there is a greater propensity to visit the UK on holiday, although it must be noted that these countries tend to prefer ferry travel and the use of their own car transport more generally over the use of air services.

39. Ultimately, the extent to which Manston might act as a catalyst to inbound tourism depends on the likely route network. The fleet mix forecast (PEIR Appendix 12.3) shows Ryanair as operating 76% of all passenger flights, with the remainder, other than the assumed return of the KLM service, expected to be largely ad hoc charter. Taking an example of the route network which Ryanair might operate from a similar scale of base at Leeds Bradford where the airline handles around 1 million passengers a year similar to the Azimuth projection for Manston, the airline serves the following destinations[20]:

Alicante	Las Palmas
Bratislava	Malaga
Corfu	Malta
Chania	Murcia
Dublin	Palma
Faro	Pisa
Fuerteventura	Riga
Gdansk	Tenerife
Gerona	Venice
Ibiza	Vilnius
Krakow	Warsaw
Limoges	Wroclaw
Lanzarote	

40. The majority of flights (over 59% in the summer tourist season) are to typical outbound leisure destinations and such destinations would, in all likelihood, be those operated initially particularly if our assessment (see paragraph 2.88 of our earlier report) that Azimuth's passenger forecasts are substantially overstated by reference to the level of demand in the Manston catchment area. Overall, it is hard to see how Manston would support a portfolio of routes likely to contribute significantly to inbound tourism nor to greatly assist St Augustine's Divine Retreat Centre (Azimuth paragraph 6.5.2) in marketing its activities, not least as its principal marketing focus appears to be to UK residents.[21]

[20] Based on OAG data for February and July 2018.

[21] http://divineuk.org/about-us/ramsgate/ The organisation operates another retreat centre in Darlington.

41. The suggestion that Manston might support services from China (Azimuth paragraph 6.5.4) lacks any foundation; such services do not form part of the forecasts, passenger aircraft stands and the passenger terminal would not be appropriately sized to handle flights to/from China and only Heathrow and Manchester Airports in the UK manage to sustain regular flights from China at 78mppa and 28mppa respectively. The Manston catchment area would simply not be sufficient to sustain such services and it is not credible that an airport in the 1-2 mppa range (or smaller) would support regular flights to/from China.

42. Overall, the additional material added in relation to the value of tourism does not demonstrate any linkage between the re-opening of Manston Airport and the actual potential impact on tourism in Thanet and Kent.

43. The other comments made by Azimuth about the lack of impact of airport operations on the value of tourism in Southend, Bournemouth and the Southampton area (Azimuth paragraphs 6.4.7, 6.4.14) have to be seen in the context that these airports do not have flight paths over a major tourist area as would clearly be the case with Manston in relation to Ramsgate. In the case of Manston, any negative implications might be expected to be more significant.

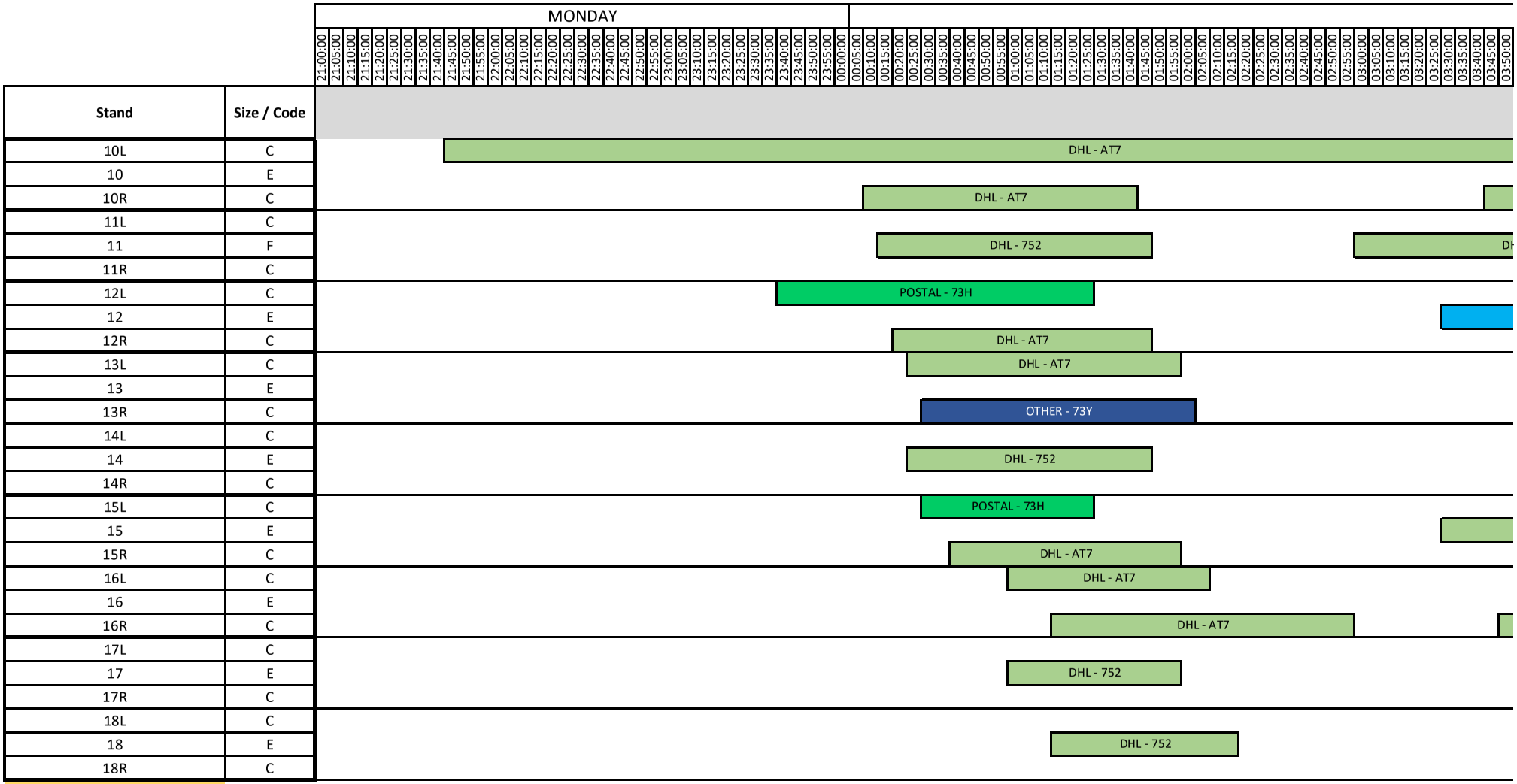
8th February 2018

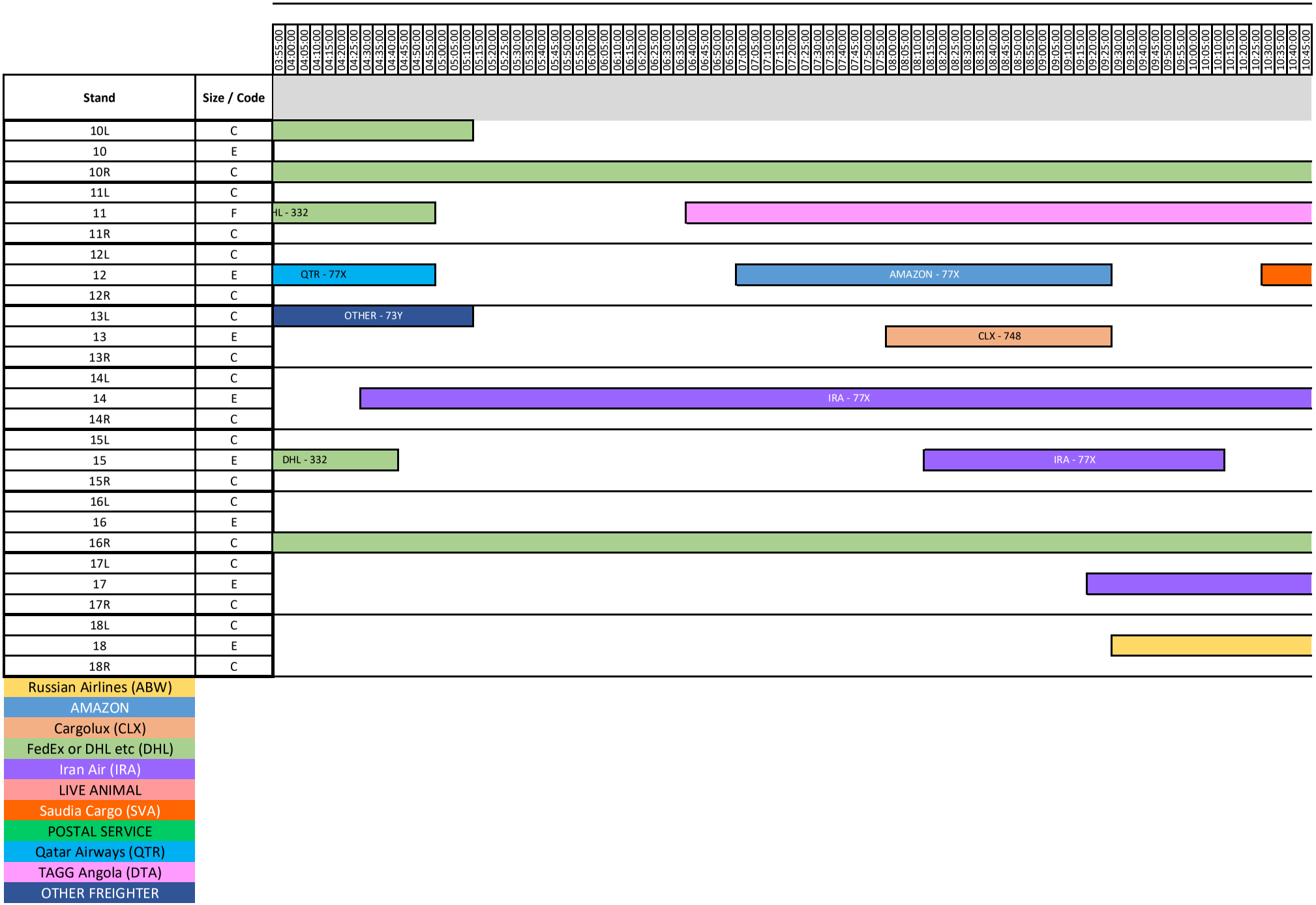
Appendix 12.3 Fleet Mix, QC points and Aircraft Categories

Airline	Type	Av Movements Day	Av Movements Night	QC A	QC D	Av QC	Total QC	Code
Amazon (US)	B777-300ER	4.6	0.5	1	2	1.5	0.75	E
Cargolux (Africa/Nairobi	B748	1.1	0.1	1	2	1.5	0.15	F
Fedex/DHL	B752	4.1	1.4	0.25	0.5	0.375	0.525	D
Fedex/DHL	A332	4.1	1.4	0.5	1	0.75	1.05	E
Fedex/DHL Feeders	ATR72	10.6	1.2	0.25	0.25	0.25	0.3	B
Fish and crabs (Dubai)	B777-300ER	0.4	0	1	2	1.5	0	E
Iran Air	B777-300ER	4.2	0	1	2	1.5	0	E
Live Animals	B777-300ER	0.4	0	1	2	1.5	0	E
Middle E (Egypt/Saudi	B777-300ER	0.9	0.1	1	2	1.5	0.15	E
PIA	B777-300ER	0.2	0	1	2	1.5	0	E
Post	B737-800	1.1	1.1	0.5	1	0.75	0.825	C
Qatar	B777-300ER	1.6	0	1	2	1.5	0	E
Russian	IL76	2.3	0.3	8	16	12	3.6	D
Russian	AN124	0.8	0.1	2	16	9	0.9	F
TAAG Angola	B748	0.7	0.1	1	2	1.5	0.15	F
Other	B737-300	5.7	0.6	1	0.5	0.75	0.45	C
Military	C17	0	0.1	0.5	2	1.25	0.125	D
Military	C130	0	0.1	0.5	2	1.25	0.125	D
Humanitarian	B748	0.1	0	1	2	1.5	0	F
KLM	F70	4	0	0	0.25	0.125	0	C
Charter	A320	1	0	0.25	1	0.625	0	C
Blue Air	B737-800	1.3	0	0.2	1	0.6	0	C
Cruise Flights	B757-300	0.8	0	0.25	1	0.625	0	D
Ryanair	B737-800	21.9	0	0.5	1	0.75	0	C
Total Freight		**42.9**	**7.1**				**9.1**	
Total		**71.9**	**7.1**				**9.1**	

APPENDIX E: INDICATIVE STAND ALLOCATION OF RSP/AZIMUTH AIRCRAFT MOVEMENT PROECTIONS BASED ON A RATIONAL TIMETABLE OF OPERATIONS

STAND ALLOCATION CHART FOR RSP FORECAST SCHEDULE BASED ON RATIONAL DAY NIGHT SPLIT





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Russian Airlines (ABW)
AMAZON
Cargolux (CLX)
FedEx or DHL etc (DHL)
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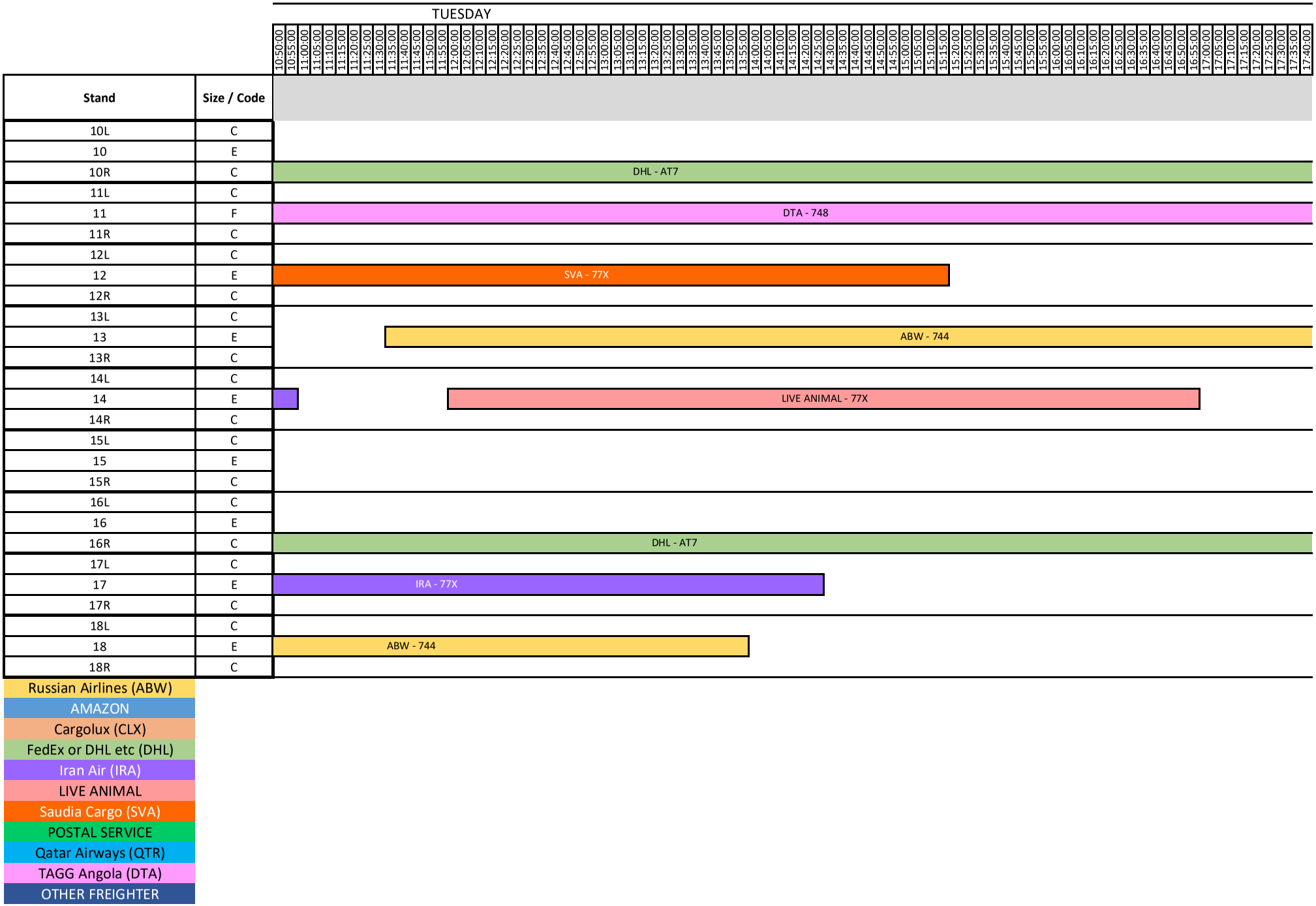
LIVE ANIMAL
Saudia Cargo (SVA)
POSTAL SERVICE
Qatar Airways (QTR)
TAGG Angola (DTA)
OTHER FREIGHTER



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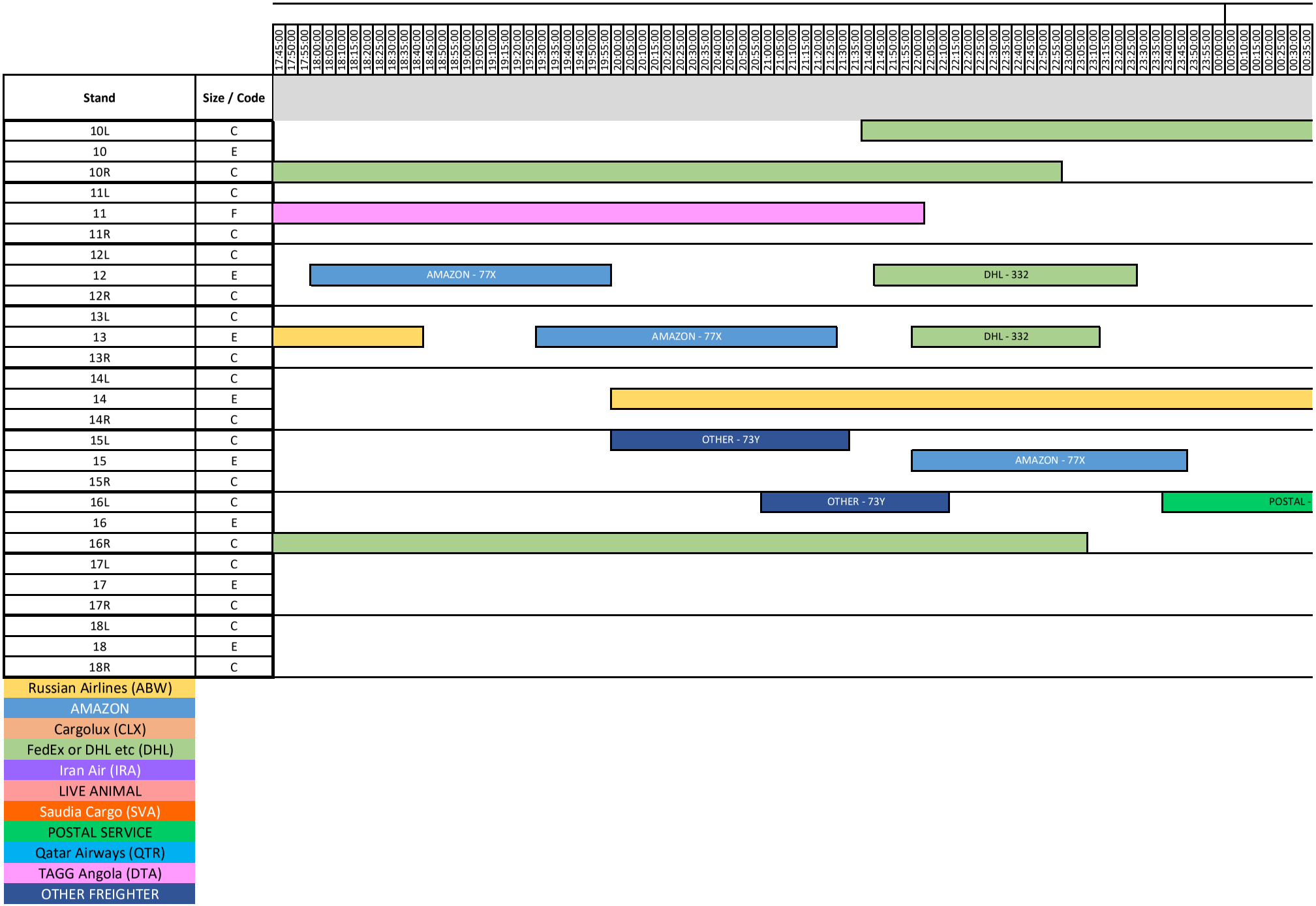

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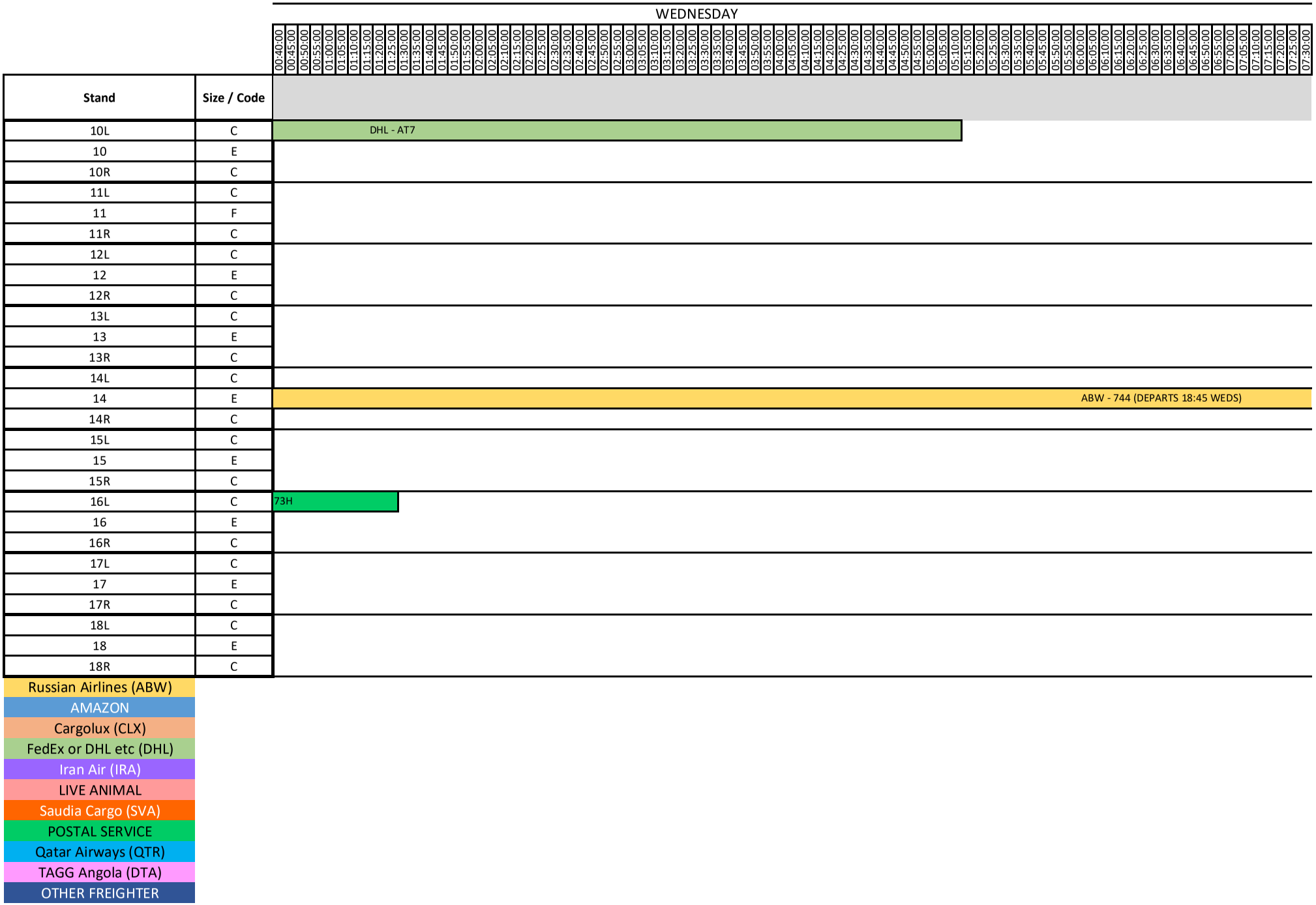

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POSTAL SERVICE
Qatar Airways (QTR)
TAGG Angola (DTA)
OTHER FREIGHTER

Enclosure 2

Avison Young
65 Gresham Street, London EC2V 7NQ

Analysis of the Freight Market Potential of a Reopened Manston Airport – Addendum

UK Regional Airport Financial Performance and Debt Funding Characteristics

Issued: February 2019

Scope of the Report and Limitation of Liability

- This report contains the results of our analysis in relation to potential air cargo demand at the former Manston Airport site and our assessment of the debt funding characteristics of UK regional airports (the "Work"). It has been prepared for Stone Hill Park Limited ("SHP") in connection with the application for a Development Consent Order by RiverOak Strategic Partners Limited and for no other purpose. The application is for the redevelopment and reopening of Manston Airport for international air freight along with passenger, executive travel and aircraft engineering services ("the Project"). The application would also, we understand, seek to compulsorily acquire the whole of the former Manston Airport site from SHP.
- We do not accept a duty of care to any person other than SHP in respect of this report.

ALTITUDE AVIATION ADVISORY LIMITED

February 2019

Contents

1. Overview of Report

1. This report has been commissioned by Stone Hill Park Limited ("SHP"), the owners of the former Manston Airport site. The site is currently subject to an application for a Development Consent Order ("DCO") under the Planning Act 2008 currently promoted by RiverOak Strategic Partners Limited ("RSP"). The application is for the redevelopment and reopening of Manston Airport for international air freight along with passenger, executive travel and aircraft engineering services ("the Project"). RSP contends that the Project is a Nationally Significant Infrastructure Project for airport development for air freight and hence, should fall within the Planning Act 2008. RSP's application also seeks powers of compulsory acquisition over the site, allowing RSP to compel the purchase of the site from SHP's ownership to RSP's ownership. The report has been developed in this context.

2. In 2017, we developed an evidence-based assessment of key issues impacting the future development of air cargo in the UK. This work was completed in October 2017 and published on the Stone Hill Park website in January 2018[1].

3. As part of our work, we reviewed a range of submissions as part of the DCO pre-application process. These included reports commissioned by RSP from Azimuth Associates ("Azimuth")[2] and Northpoint Aviation Services ("Northpoint")[3] and two AviaSolutions reports[4] commissioned by Thanet District Council.

4. Since our work was completed, Azimuth has twice updated its set of reports. First, as part of the consultation process, Azimuth released updated versions of its reports in January 2018[5]. Then in July 2018, a further updated version was issued as part of the DCO application[6]. The changes to the Azimuth reports were relatively minor in substance, while no changes were made to the forecasts presented.

5. The first two parts of this report acts as an addendum to our report issued in January 2018. It covers:

   - A review of relevant developments in the air cargo sector since October 2017 (when our previous analysis was completed).
   - An assessment of relevant new material in the recent Azimuth reports (issued after completion of our January 2018 report).

6. The third part of this report provides an assessment of the debt funding characteristics of UK regional airports. The various submissions by RSP provide very limited information on how the Project would be funded.

   - We highlight the challenges that established small regional airports face in securing funding.
   - In particular, we also outline the typical information sought by providers of debt and / or equity funding for lower throughput UK regional airports.

7. This report also contains an overarching Executive Summary, drawing upon both the original report and new material included in this document.

[1] (Altitude Aviation Advisory, 2018)
[2] (Azimuth Associates, 2017 a), (Azimuth Associates, 2017 b), (Azimuth Associates, 2017 c)
[3] (Northpoint Aviation Services)
[4] (AviaSolutions, 2016), (AviaSolutions, 2017)
[5] (Azimuth Associates, January 2018 a), (Azimuth Associates, January 2018 b), (Azimuth Associates, January 2018 c)
[6] (Azimuth Associates, July 2018 a), (Azimuth Associates, July 2018 b), (Azimuth Associates, July 2018 c)

2. Executive Summary

2.1. Overview

8. We have undertaken an in-depth review of the Azimuth reports, and developed our own analysis of the future potential for freight at a reopened Manston Airport.

    - The Executive Summary sets out our overall conclusions.
    - Full supporting references can be found either in the main body of the report or in our original report.

9. Manston has historically played a role as a niche air freight airport. We do not see potential for a more significant role in the future. This is in contrast to Azimuth. Azimuth's forecasts show the airport more than doubling its previous annual freight record in the first year of freight traffic returning. By year 18 of Azimuth's forecast, Manston is forecast to exceed the 2018 freight tonnage at East Midlands Airport (the largest dedicated freighter hub in the UK). This is simply not credible or likely.

10. We have identified significant weaknesses in the Azimuth analysis and forecasts. The following factors have not been acknowledged and/or adequately reflected:

    - There is no overall shortage of freight capacity in the UK or South East specifically. While Heathrow is constrained, there is significant spare freight capacity at the established dedicated freighter hubs at Stansted and East Midlands.
    - Cargo activity in the UK has become very consolidated on the 3 cargo hubs (Heathrow, Stansted and East Midlands). All three of these airports have plans to significantly expand cargo capacity, and they forecast strong growth in cargo tonnage. Furthermore, other established passenger airports have the capability of handling much higher cargo volumes if demand existed.
    - There has been a strong trend towards bellyhold freight, with the role of dedicated freighters diminishing. The most recent (2017) Department for Transport ("DfT") forecasts to 2050 assume the number of freighter flights in the UK will remain flat at 2016 levels[7].
    - Trucking is a highly integrated component of the air freight business model, and not merely a substitute for air freighter flights when airport capacity is constrained. The increasing use of truck feeder services is due to cost efficiencies and is not restricted to the UK.
    - Manston is in a poor location to serve the wider South East or UK market. Other structural disadvantages include lack of critical mass, lack of a passenger hub, and night flight restrictions. These factors have limited Manston's role to that of a niche freight airport.

11. We consider the Azimuth freight forecasts to be extremely optimistic, with negligible supporting evidence. In particular:

    - Historic performance is ignored (both at Manston or more generally across the UK market – the Azimuth growth forecast for Manston would be unprecedented in a UK context).
    - There is a heavy reliance on qualitative techniques, with no substantive attempt to quantify the size of the markets Manston will be competing in, or how it would gain market share.
    - Many of the references from published studies are too generic to be meaningful or are taken out of context.
    - In making the case for Manston, Azimuth seeks to rely on reports prepared by York Aviation in 2013 and 2015. We share York Aviation's view, as set out in a parallel report commissioned by

[7] (UK Department for Transport, 2017, p. 33)

SHP, that these reports do not support Azimuth's conclusion that there would be a substantive role for Manston in the UK air freight industry.

12. Finally, we also view the Azimuth cargo air transport movement ("ATM") projections for Manston to be very optimistic and again unlikely. The projected average freight loads per flight are much lower than historic levels, and also lower than typically seen at cargo airports specialising in general freight (i.e. with limited integrator presence). Even if the freight forecasts were achieved (which we consider very unlikely), we would anticipate significantly lower numbers of cargo air transport movements.

13. RSP has not provided any detailed business plan / financial forecasts that would be necessary to support either debt and/or equity raising processes. As a start-up business with no track record of performance or profitability, it should be noted that there would be a much higher threshold of information required by funders. With RSP stating that construction will be underway in 2020, it is highly surprising that this information has not been shared with the Examination

14. Based on the analysis of lower throughput UK regional airports and our experience of the UK airport funding market, we would expect RSP to struggle to secure material levels of debt or equity investment for its project.

15. Furthermore, based on our experience and taking into account the very high-level information provided on capital investment, we are of the opinion that the airport is unlikely to be economically viable even if RSP could deliver on its optimistic forecasts.

2.2. Introduction

16. Azimuth has published four reports in support of RSP's DCO application. Volume 1[8] aims to answer the following questions:

> *"Does the UK require additional airport capacity in order to meet its political, economic, and social aims?*
>
> *Should this additional capacity be located in the South East of England?*
>
> *Can Manston Airport, with investment from RiverOak, relieve pressure on the UK network and meet the requirement of a nationally significant infrastructure project?"*

17. Azimuth concludes that *"the answer to each of the above questions is overwhelmingly yes"*. However, the questions conflate different issues. The first two questions provide poor context for the third question and are not relevant to RSP's proposals for Manston.

18. We agree that the UK needs additional airport capacity, and that it should be located in the South East of England. This is not surprising given that:

- In September 2012, the Government asked Howard Davies to chair an independent Commission to identify and recommend options to maintain the UK's position as Europe's most important aviation hub[9] ("the Airports Commission").
- The Airports Commission concluded that "*a new runway in the South East is needed by 2030*". It also "*concluded that the best answer is to expand Heathrow's runway capacity*" as "*Gatwick… is unlikely to provide as much of the type of capacity which is most urgently required: long-haul destinations in new markets. Heathrow can provide that capacity most easily and quickly. The benefits are significantly greater, for business passengers, freight operators and the broader economy*[10]".

[8] (Azimuth Associates, July 2018 a, p. I)
[9] (Airports Commission, 2015, p. 37)
[10] (Airports Commission, 2015, p. 4)

- In October 2016, the Government announced that its preferred scheme to meet the need for new airport capacity in the South East was a Northwest runway at Heathrow. This was subsequently confirmed in the Airports National Policy Statement ("ANPS"), published in June 2018. The ANPS[11] stated that "*expansion at Heathrow Airport delivers the biggest boost in long haul flights, and the greatest benefit therefore to air freight. This is further facilitated by the existing and proposed airport development of freight facilities as part of the Northwest Runway scheme…. Expansion at Heathrow Airport will further strengthen the connections of firms from across the UK to international markets*." The ANPS, ratified by Parliament, has settled the "need" case for the Northwest runway at Heathrow, but no other form of airport development.

19. However, while we agree with the positive response to the first two questions, it does not automatically lead to a "yes" for the third question. The third question covers fundamentally different issues to the first two questions.

20. There are clear distinctions between different types of airport capacity. The Gatwick option would have provided more incremental runway movements than the recommended Heathrow option[12]. However, a key reason for recommending Heathrow was that *"It delivers more substantial economic and strategic benefits than any other shortlisted option, strengthening connectivity…*[13]*"*

21. RSP is promoting a reopened Manston Airport on the basis of providing capacity for dedicated freighter flights:

- Bellyhold freight comprises over 70% of mainland UK[14] freight, a proportion that has been growing since 2004. Azimuth's freight forecasts do not assume any bellyhold freight[15]. We agree with this Azimuth assumption and consider that the development of bellyhold freight at Manston is extremely unlikely.
- Azimuth's forecasts passenger traffic of ca. 1.4 million by the 20th year of operation[16]. We consider these forecasts to be optimistic. However, even taking these forecasts at face value, the passenger throughput would represent less than 1% of 2018 passenger traffic at London airports.

22. Therefore, rather than asking "*Can Manston Airport, with investment from RiverOak, relieve pressure on the UK network and meet the requirement of a nationally significant infrastructure project?*", more relevant, targeted questions would be:

- Considering planned airport expansions, will there be a need for further airport capacity in the UK for dedicated freighters?
- Will the South East in particular require additional capacity for dedicated freighters?
- Would a reopened Manston be well placed to effectively serve a significant proportion of the dedicated freighter market?
- Are there other potential airport options for new dedicated freighter capacity?

23. In the rest of the Executive Summary, we address each of the sub-questions above in turn.

2.3. Need for Further Airport Capacity in the UK for Dedicated Freighters

Current Situation

[11] (UK Department for Transport, June 2018, p. 23)
[12] (Airports Commission, 2015, p. 238)
[13] (Airports Commission, 2015, p. 245)
[14] For data robustness reasons, Northern Ireland airports have been excluded from some of our analysis. In these circumstances, we reference mainland UK as shorthand for England, Scotland and Wales.
[15] (Azimuth Associates, July 2018 c, p. 13)
[16] (Azimuth Associates, July 2018 c, p. I)

24. There is no overall shortage in UK airport capacity for dedicated freighter operations. Both of the two largest freighter hubs, East Midlands and Stansted, can accommodate significantly more freighter services than they currently operate.

25. The UK does lack available dedicated freighter capacity at its major passenger hub airport, Heathrow.

    - Heathrow is also the UK's largest freight airport with ca. 65% of the mainland UK overall throughput.
    - Freight forwarder activity has consolidated around Heathrow on the strength of its extensive network of long-haul passenger services. These services, typically using widebody aircraft, provide substantial bellyhold cargo capacity.
    - At Heathrow, only ca. 5% of freight is carried on dedicated freighters. A lack of available runway slots restricts freighter activity. In the absence of operating constraints, major passenger hubs tend to also play a role as key hubs for freighter aircraft (e.g. Frankfurt). Freighter services complement the connectively provided by passenger flights, while the cargo industry benefits from economies of scale and scope from the consolidation of activity at a hub airport.

26. Where dedicated freighter flights cannot be accommodated at Heathrow (due to capacity constraints), freight customers have the following choices:

    - Operate freighter flights (or use existing freighter flights) from other UK airports where capacity is available (e.g. Stansted, East Midlands).
    - Transport freight in the bellyhold of passenger flights from Heathrow (or other UK airports).
    - Transport freight to a major European air freight hub (e.g. Liege, Frankfurt), typically by road truck.
    - Use surface modes of transport (road, rail, water) for the whole journey (note that this is not a realistic option for most potential air freight consignments due to the distances involved and/or urgency of shipment).

27. Azimuth asserts that UK air freight has been constrained since 2000[17]. Furthermore, Azimuth concludes that shortage of airport capacity is leading to more trucking of freight ("*flying freight from Manston, negating the need to truck, to and from European airports for air transportation*[18]").

28. We consider that these conclusions are highly simplistic:

    - As discussed above, we agree there is a shortage of dedicated freighter capacity at the UK's main passenger hub airport (Heathrow). However, freighter capacity is available at other airports. For example, both Stansted and East Midlands have expanded freighter activity significantly since 2000, and continue to have spare capacity.
    - Therefore, any shortage of air freight capacity in the UK relates specifically to Heathrow hub capacity rather than a more general lack of capacity.
    - Trucking is a highly integrated component of the air freight business model, and not merely a substitute for air freighter flights when airport capacity is constrained. The increasing use of truck feeder services is due to cost efficiencies and is not restricted to the UK. We see no evidence that the growth in trucking is primarily driven by lack of Heathrow capacity for air freighter flights.
    - In any case, even if there were significant levels of trucking caused by constraints at Heathrow, this would only be reduced by the provision of more Heathrow runway capacity. As there is already spare capacity at other airports in the UK, provision of further capacity would not make any significant difference to trucking levels. There is no reason why economic decisions to truck freight rather than fly would change in the absence of new Heathrow capacity.

[17] (Azimuth Associates, July 2018 a, p. 17)
[18] (Azimuth Associates, July 2018 a, p. 40)

Future Requirement

29. We have assessed the future demand for air freight in the UK, reflecting some notable trends:

    - Increasing role of passenger aircraft in the carriage of air freight, and the relative diminishing in importance of freighter aircraft. Passenger demand has developed strongly in recent years. This has led to expansion of cargo capacity in the bellyhold of passenger aircraft outstripping growth in air freight demand.
    - This trend has led to cutbacks in dedicated freighter operations from leading airlines such as Cargolux, IAG, Air France-KLM and Singapore Airlines. In mainland UK, freight tonnes carried on all-freighter aircraft peaked in 2004, and has fallen from 36% of the total air freight to 29% by 2018E. The most recent Department for Transport forecasts to 2050 assume the number of freighter flights in the UK will remain flat at 2016 levels[19].
    - There has also been a clear move towards consolidation of air freight activity at major passenger or freight hubs. In mainland UK, the leading 3 airports (East Midlands, Stansted and Heathrow) have steadily grown their share of overall air freight tonnes on dedicated freighter services – from 44% in 1990 to 88% in 2018E. The mainland UK bellyhold market is even more consolidated, with the leading 3 airports (Heathrow, Manchester, Gatwick) achieving a combined market share of 97%+ in each year since 1996.

30. These fundamental market trends have not been recognised or have been ignored by Azimuth in its assessment of the potential for a reopened Manston.

31. In our original report, we developed a forecast of UK air freight demand to 2050, linked to UK economic growth. We forecast a compound annual growth rate ("CAGR") 2016-40 of 2.4%, much higher than recent growth rates. This results in ca. 4.2m tonnes of demand in 2040. We consider that these forecasts remain valid.

32. Based on published expansion plans and various prudent assumptions, in our original report we estimated that the available air freight capacity at the leading 5 UK airports alone will be around 5m tonnes per year in 2040 (see Section 7.1 of our original report). This is comfortably higher than the envisaged demand levels. Furthermore, the potential freighter capacity is significantly above our freighter demand forecast, and the potential bellyhold capacity is significantly above our bellyhold demand forecast.

    - Since our original report, Heathrow, Gatwick, Stansted and Luton have all either progressed existing expansion plans or identified further capacity enhancements (incremental to the levels identified in the original report).

33. Furthermore, we do not envisage overall capacity shortages in the shorter term. Only towards 2050 could capacity start to become constrained, assuming no further development of capacity from 2040 onwards. Therefore, any business that Manston could capture would primarily be at the expense of other UK airports.

Conclusion

34. The UK currently has sufficient overall airport capacity for air freight, albeit capacity at Heathrow is constrained.

35. Based on planned expansions at the existing major airports, we do not envisage a need for additional freight capacity to be developed in the period to 2040, or possibly 2050.

36. Therefore, there is not a compelling need for development of further airport capacity for freighter aircraft in the UK.

[19] (UK Department for Transport, 2017, p. 33)

2.4. South East Requirement for Additional Dedicated Freighter Capacity

37. Cargo is less time sensitive than passengers. Therefore, an airport's cargo catchment area is typically many times larger than its passenger catchment. This is one of the key factors that leads to the high degree of consolidation seen for air cargo.

    - For example, Leipzig Airport considers its catchment covers a 10-hour trucking radius, while Liege sees its catchment as all areas within access of a full day trucking.
    - East Midlands serves the whole of England and Wales, exploiting its central location in England.
    - Similarly, the extensive network of long haul flights from Heathrow means it attracts freight from the whole of Great Britain.

38. Mainly due to the hub strength of Heathrow, almost 80% of 2018E mainland UK air freight was flown from airports in the South East & East of England. Heathrow and Stansted alone achieved 65% and 9% market share respectively.

39. Much of the UK's high value manufacturing is located outside London and the South East[20]. In Q1 2015, only 15% of UK manufacturing jobs were located in London and South East[21]. Clearly, a substantial proportion of air freight using Heathrow in particular will be travelling to/from other areas of the UK.

40. We do not see a need for new air freight capacity to be located in the South East specifically. New capacity would be most usefully concentrated at existing major air freight hubs, whether in the South East (Heathrow, Stansted) or outside (East Midlands). This would enable the air freight industry to continue to benefit from the economies of scale and scope flowing from market consolidation.

41. The Airports Commission negatively assessed the freight potential of Gatwick due to its location. It stated, "*Gatwick's position to the south of London limits its effectiveness as a national freight hub*[22]." This is consistent with our view that locations which can be accessed from a wide national catchment (whether in the South East or not) are more advantageous than locations in less accessible parts of the South East. We would also consider Gatwick to be a more accessible location than Manston.

2.5. Market Position of a Reopened Manston

42. We have argued above that there is no requirement for additional air freighter capacity in the South East, over and above developments already in the pipeline (being consented or planned) at existing airports.

43. However, even if our assessment is incorrect and further capacity is needed in the future, Manston would not be an effective solution.

44. While a reopened Manston would contribute to overall UK freighter capacity, it clearly would not provide "hub" capacity of the type that is constrained at Heathrow.

    - The inability of Manston to achieve more than 43,000 tonnes[23] in any single year in the period from 2000 until its 2014 closure highlights that the capacity provided at Manston was not a suitable substitute for Heathrow freighter capacity.
    - In the same way, many other UK airports have material underutilised freighter capacity despite Heathrow constraints.

45. Manston's geographical location severely restricts its ability to develop into a national dedicated freighter hub. Were Manston airport to be reopened at some point in future, it would likely be competing directly with East Midlands and Stansted for cargo-only flights. The outlook for the airport in this scenario is poor.

[20] (Heathrow Airport, 2014, p. 19)
[21] (House of Commons Library, 2015, p. 7)
[22] (Airports Commission, 2015, p. 24)
[23] Average ca. 28,000 tonnes/year for the period 2000-2013 (last full year of operation). Source: CAA airport statistics.

46. Firstly, the location of Manston on a peninsula physically limits the size of its catchment area.

- Within a 3-hour drive, only the South East & East of England, and a small part of the Midlands, are accessible.
- In comparison, most of England and Wales can be accessed within 3 hours of East Midlands Airport, while Manston's catchment is essentially a sub-set of the Stansted catchment.
- The case studies of Liege and Leipzig, as well as the strong growth of cargo at East Midlands, indicate the importance of a large catchment area and central location. While these airports attract cargo from an extensive area, they also benefit from strong cargo demand within their immediate catchment.

47. In addition to Manston's poor geographic location, it is also relatively far from important transport infrastructure. The motorway network is not especially close (the airport is ca. 22 miles from the M2 and 38 miles from the M20). Successful freight airports in the UK and Europe have been shown to be extremely close to the national motorway network, helping to minimise the shipper/consignee to airport transport time[24].

48. Secondly, there is a consensus in the air freight industry that the ability to handle night flights is critical for many types of air cargo (in particular for express freight, but also for other types of cargo).

- East Midlands and Stansted are both able to accommodate flights 24 hours per day.
- Both Liege Airport and Leipzig Airport cite the ability to accept night flights, and the support of local government in doing so, as factors in their success.
- It is unclear (in the context of historic restrictions) whether or not night flights would be allowed at Manston Airport were it to reopen. However, it does seem clear that restrictions on night flying would have severe limitations for air cargo potential at the airport.

49. Finally, as noted previously, there is a clear move towards consolidation of freight activity at a few large airports. In order to be successful, Manston would need to reverse this well-established trend. It is not apparent how this could be achieved, even with markedly lower airport charges (which in turn would compromise the financial viability of the airport).

50. Therefore, even if there was a future need for additional airport capacity for freighter activity, Manston is poorly placed in both geographic and potential operational terms to service such a requirement. Other airports are in a much better position to exploit any such future opportunities.

[24] For example, East Midlands Airport is within 3 miles of the M1 motorway. Similarly, Stansted is less than 3 miles of the M11 motorway. The Heathrow Cargo Centre is within 3 miles of the M4, ca. 5 miles from the M25 and ca. 8 miles from the M3.

2.6. Other Potential Options for New Dedicated Freight Capacity

51. Azimuth concludes that "*Manston is the only real choice for the location of a freight-focused airport in the South East of England*[25]". As discussed above, we dispute the need for a new freight-focussed airport, or that any such airport would need to be located in the South East. If new capacity was needed in the South East, a more central location than Manston's position on a peninsula would be desirable.

52. Bournemouth Airport is dismissed by Azimuth on account of its location and distance from the motorway network. We agree that these are significant disadvantages but similar issues apply to Manston (with its location arguably even more compromised than Bournemouth).

- From the South West, West London and the Midlands, Bournemouth is generally more accessible than Manston.[26]
- Bournemouth Airport[27] highlights that:

> *"With ample room to grow, our thriving cargo facility is expanding to meet the demands of importers and exporters from across the UK. Accommodating a huge variety of freight and passenger aircraft, Bournemouth supports cargo logistics round the clock, with the following benefits: 2271m runway, excellent good weather record, congestion free (with no slot restrictions), experienced in handling many cargo aircraft including the AN-124 Ruslan, 'Freighter friendly' airport management."*

53. As discussed, the South East is not necessarily the best location for new freighter capacity. Outside the South East, Doncaster Sheffield Airport has a central UK location. It markets itself as "*the UK's Freighter Gateway*[28]":

> *"At the centre of the UK with easy access to the M18, M1, A1M, M62 and M180 Doncaster- Sheffield is the ideal airport for freighter operations. DSA is justifiably gaining the reputation as the most effective freighter airport in the UK. The attributes that are delivering this include…. exceptional performance record, 24 hour operation, runway 2,893m x 60m, CAT III, Class "D" controlled airspace, no slot constraints/congestion, Competitive jet fuel prices, short taxiing distances, excellent cargo reception and handling, inclusive pricing, NEQ capacity up to 9,300kg Hotac."*

54. Both these airports are currently operational, and benefit from a large site with a long runway. Doncaster Sheffield operates 24 hours a day, whilst night flights at Bournemouth can be arranged with prior notice.

55. Furthermore, Birmingham and Doncaster Sheffield have longer runways than Manston, with spare capacity to develop freighter activity. Both have superior locations than Manston.

[25] (Azimuth Associates, July 2018 a, p. 29)
[26] For example, the following distances have been sourced from Google Maps for the typical fastest routing. Bournemouth Airport to Hounslow: 90 miles, Manston Airport to Hounslow: 103 miles. Bournemouth Airport to Bristol: 70 miles, Manston Airport to Bristol: 201 miles. Bournemouth Airport to Birmingham: 167 miles, Manston Airport to Birmingham: 197 miles.
[27] www.bournemouthairport.com/about-us/doing-business-together/cargo/
[28] www.therouteshop.com/profiles/doncaster-sheffield-airport/

2.7. Conclusion

56. It is highly unlikely that a reopened Manston could play any significant role in serving the needs of the UK air cargo industry. There is currently no shortage of overall capacity, and future demand growth into the long term can be met with planned expansion from the leading cargo airports in the UK.

57. The Azimuth freight forecasts for Manston are summarised below:

- In Year 2 (the first year of freight traffic), tonnage is forecast to be more than double the previous Manston peak annual value.
- By Year 11, freight throughput is forecast at similar tonnage to 2018 Stansted performance. Growth from Year 2 to Year 11 is forecast at CAGR 9.7%.
- By Year 20, Manston is forecast to exceed the 2018 freight tonnage at East Midlands Airport (the largest dedicated freighter hub in the UK).

58. We consider the forecasts to be extremely optimistic, not credible or likely, with negligible supporting evidence.

- Growth in freight at Manston would be unprecedented in a UK market context, and in complete contrast to previous historic performance.
- As discussed previously, we do not expect there to be an overall shortage of freighter capacity in the UK or South East. Even if we are wrong in this assessment, Manston and other smaller airports have shown no signs of benefiting from supposed capacity shortages in recent years. Furthermore, there is demonstrable spare capacity at Stansted and East Midlands, both better established and located.
- The rationale for why Manston will be able to achieve a massive uplift on previous performance is weak. The stated advantages of using Manston were present when the airport struggled to grow freight volumes, despite investment in infrastructure and marketing (the previous owners invested £7m on new aprons and taxiways, increasing the freight capacity to 200,000 tonnes[29] per annum). Lack of Manston capacity was not a factor.
- As well as the forecasts ignoring historic performance, they also do not reflect the very clear market trends towards consolidation of freight at major passenger and dedicated freighter hubs. UK airports outside the major three freight hubs have seen volumes fall. There is also a trend away from freighter services towards bellyhold freight, driven by competitive pricing of bellyhold cargo space (due in turn to strong growth in bellyhold capacity as a result of expansion of passenger services).

59. Manston previously operated as a niche air freight airport. While it could theoretically regain this role in the future, its structural disadvantages (location, lack of critical mass, lack of passenger hub, night flight restrictions etc.) will severely limit its potential. Even if reinvested, relaunched and supported, we would not expect freight volumes to be materially above historic levels, and considerably below the volumes forecast by Azimuth.

60. Finally, the forecast of freighter ATMs is simply not credible.

- By year 20, ca. 17,000 freighter flights are forecast for Manston.
- This represents one-third of current mainland UK freighter flights, in a market where the number of freighter ATMs has been contracting. This trend has been recognised by the DfT, with its 2017 forecasts to 2050 assuming the number of freighter flights in the UK will remain flat at 2016 levels[30].

[29] (Wiggins Group plc, 2002, p. 16)
[30] (UK Department for Transport, 2017, p. 33)

61. In particular, we note that York Aviation's professional opinion[31] is that the capability of Manston Airport is 21,000 annual air cargo aircraft movements. This capacity is more than enough to accommodate any potential a reopened Manston Airport may have.

62. In paragraph 22, we put forward four questions in relation to RSP's proposals for Manston. These are more relevant and targeted than the broader questions posed by Azimuth in its first report[32]. The answers to our questions have been developed over the course of the Executive Summary of this report. We summarise our conclusions in the table below.

Question	Response
Considering planned airport expansions, will there be a need for further airport capacity in the UK for dedicated freighters?	No, planned expansions at existing airports should comfortably provide sufficient freighter capacity until 2040 and beyond.
Will the South East in particular require additional capacity for dedicated freighters?	No, Stansted is planning significant capacity growth. A third runway at Heathrow will provide additional bellyhold capacity (putting downward pressure on freighter demand). Finally, the South East market can be well served by airports more centrally located in England.
Would a reopened Manston be well placed to effectively serve a significant proportion of the dedicated freighter market?	No, a reopened Manston would only serve a niche role, similar to its historic record. It has a poor location and operating restrictions.
Are there other potential airport options for new dedicated freighter capacity?	Yes, there are many UK airports with excess freighter capacity. For example, Doncaster Sheffield Airport has a central UK location. It markets itself as the UK's freighter gateway. It benefits from a large site with a long runway, and has 24 hour operations.

Table 1 – Summary of Analysis of Potential Future Freight Role for a Reopened Manston Airport

63. As can be seen above, when one asks more targeted questions, the outcome is very different to that presented by Azimuth. Our overall conclusion is that the RSP proposals and the Azimuth forecasts are deeply flawed. The outlook put forward by RSP / Azimuth does not reflect market realities. We would expect freight tonnage and freight ATM outturn at a reopened Manston to be considerably below the Azimuth forecasts, in line with previous levels when in operation.

[31] (York Aviation, 2017)
[32] (Azimuth Associates, 2017 a, p. I)

2.8. Addendum

64. There have been some relevant developments in the air cargo sector since October 2018. Cargo demand in the UK and globally was particularly strong at the end of 2017 and in the early months of 2018. However, this was a short-term spike, with UK cargo volumes contracting by the end of 2018. IATA[33] has expressed concerns about the strength of the cargo market globally.

65. In any case, the assessment of future cargo demand for Manston should be based on established historic trends, not short-term fluctuations in demand. Recent developments have not changed our view on the long-term growth potential of the air cargo market in the UK.

66. The general trend towards bellyhold freight has continued (albeit with year to year variations), as has the consolidation of freight at the largest cargo airports. On the supply side, the Heathrow third runway project has continued to progress. Stansted has received planning permission for a lifting of its passenger planning cap, while Gatwick and Luton have brought forward plans to grow capacity.

67. There have been only some relatively minor changes to content in the updated Azimuth reports from the versions we reviewed as part of our previous report. The arguments put forward by Azimuth are fundamentally unchanged, the unrealistic Manston traffic projections have not been modified and the weaknesses we had previously identified have not been addressed.

68. The new Azimuth reports contain some new material. This new material can be broadly characterised as:

- Extrapolation from the (temporary) strong global cargo demand in late 2017/early 2018 to support the long-term case for Manston.
- New references in support of its arguments for the potential of Manston. However, the conclusions drawn from these references are typically inappropriate. A deeper analysis of the new material highlights either limited applicability for Manston or that the new material is not supportive of the case made by Azimuth.
- Additional background material which is not directly relevant to the case for Manston.

69. Therefore, our conclusions from our original report remain valid. The Azimuth forecasts and report do not provide any meaningful evidence that a reopened Manston Airport would be remotely viable.

- The arguments put forward by Azimuth run contrary to well established industry trends.
- The projections put forward have negligible quantitative justification, relying on a range of potential operators which either are unlikely to be interested in Manston or are no longer active in the freighter segment[34].
- There is no convincing reasoning why a reopened Manston would be more successful than other airports with similar characteristics, or that improvements on historic performance could be achieved.

[33] (IATA, 2019)
[34] (York Aviation, 2019, p. 23)

2.9. Funding Viability

70. RSP has provided very limited financial forecasts or financing details relating to the application for the redevelopment and reopening of Manston Airport.

71. The lack of detailed and substantiated financial forecasts, and nothing of substance in relation to how the proposed investment could be commercially financed raises significant questions around the financial viability and fundability of the proposal.

72. The RSP forecasts equate to demand of 3.1m Work Load Units[35] (WLUs) in Year 10. The performance benchmarking illustrates the difficulty that smaller throughput airports up to ca. 3m WLUs per annum have to generate sufficient revenue and profitability to be commercially viable.

73. The financial viability challenges for lower throughput UK airports have been highlighted in recent years with three airports taken over by the public sector, where experienced private sector operators could not operate these airports on a viable commercial basis:

- **Glasgow Prestwick Airport**: purchased by Scottish Government for a reported £1 in 2013. Since taking ownership, the Scottish Government has provided loans of ca. £38m. The business reported a post-tax loss of £7.6m in the year to 31st March 2018. We also note that Infratil was a previous owner of Manston Airport and, despite having airport experience from its 66% ownership of Wellington Airport in New Zealand (with 6.3m passengers in 2018), was unable to develop either Prestwick or Manston into sustainable businesses.
- **Cardiff Airport**: purchased by the Welsh Government for a reported £52m in 2013. Since taking ownership, the Welsh Government has provided loans of ca. £14m. The business reported a post-tax loss of £5.6m in the year to 31st March 2018. The previous owner, Abertis, was an experienced operator of Belfast International and Luton airports in the UK and a number of international airports. Despite this, passenger numbers declined from ca. 2m in 2007 to just over 1.0m in 2012.
- **Durham Tees Valley Airport:** purchase announced in January 2019 by Tees Valley Combined Authority for a reported £40m. The business reported a post-tax loss of £2.4m in the year to 31st March 2017. Current owner, Peel Group, is an experienced operator of Liverpool and Doncaster Sheffield airports.

74. This context is important for the proposed reopening of Manston Airport as the analysis illustrates:

- A significant level of throughput is required to generate sufficient revenue to result in positive EBITDA[36] to service debt and / or capital investment – London Southend and Cardiff with 1.1m and 1.5m WLUs respectively achieved marginally positive EBITDA but posted large post-tax losses.
- Commercial lenders and equity providers will expect a track record of EBITDA generation to support funding of the business. A reopened Manston Airport would be a start-up business with a material capital investment requirement and no history of profitability.
- Our experience is that commercial debt and equity providers would be unlikely to provide funding to a reopened Manston Airport on a standalone basis without (i) parent company guarantees (from an entity of sufficient financial standing), and (ii) strong evidence of clear contractual volume and revenue commitments from airline users.
- The benchmarking indicates that a significant proportion (or all) of the funding would need to be provided by way of shareholder loans, as the required levels would not be available from debt providers.
- Based on the analysis of lower throughput UK regional airports and our experience of the UK airport debt market, we would expect a reopened Manston Airport to struggle to secure material

[35] A Work Load Unit = 1 passenger or 100kg of cargo
[36] EBITDA is earnings before interest, tax, depreciation and amortisation

levels of debt in the commercial lending market. As equity funders would also require detailed business plan information to inform their investment decisions, we would expect RSP to struggle to secure material equity investment given the loss-making history of the business over many years.

- RSP's application documents do not provide the most basic information that would allow any funder (debt or equity) to assess the financial viability of a reopened airport.
- Without a detailed business plan and supporting financial forecasts with detailed cost and revenue assumptions and supporting information that can be assessed and tested, there is little prospect of RSP raising any debt and / or investor finance from parties that would ordinarily fund UK airports.
- With RSP stating that construction will be underway in 2020, it is surprising that this information is not available and been shared with the Examination.
- The financial viability challenges for lower throughput UK airports have been highlighted in recent years with three airports being taken over by the public sector. Where new airports across Europe have been developed or airports reopened, it is highly unusual that the public sector has not made a material financial contribution to the viability of the proposals. The potential wider economic benefits to the region are usually cited to justify public sector investment (as was the case for the Cardiff and Prestwick airport investments by the public sector).
- No public sector investment is proposed by RSP which is likely to make funding of the proposal even more challenging on a commercial basis.
- Notwithstanding this, based on our experience and taking into account the very high level information provided on capital investment, we are of the opinion that the airport is unlikely to be economically viable even if RSP could deliver on its highly optimistic forecasts.
- Our expertise of supporting many institutional investors in the UK and international airport sector confirms that they would have the same issues and challenges as a debt provider with the lack of financial information related to the deliverability and viability of the RSP proposals.
- A further material issue for the RSP proposal is the much higher threshold of information required to satisfy debt or equity providers for a start-up business with no track record of performance or profitability. This is particularly the case where the project sponsor has no demonstrable track record of developing or operating a commercially successful airport business. This lack of experience and credibility is likely to be a major issue for potential debt and/or equity providers.

3. Review of Recent Developments

3.1. Cargo Demand Growth

75. Since 1990, the UK air freight market can be divided into two distinct periods based on the growth trends seen. The period 1990-2000 was generally one of strong growth, with CAGR of 6.9% and positive annual growth in 9 of 10 years. In contrast, the period from 2000-2016 (as highlighted in our previous report) was one of stagnation (CAGR 0.2%, positive annual growth in only 8 of 16 years).

76. 2017 was a much stronger year for UK air freight, with a 10% increase in the tonnes handled at mainland UK airports. However, growth as not sustained in 2018, where the estimated outturn was flat[37]. Furthermore, as we highlight later in this report, the growth in demand did not translate into more freighter activity.

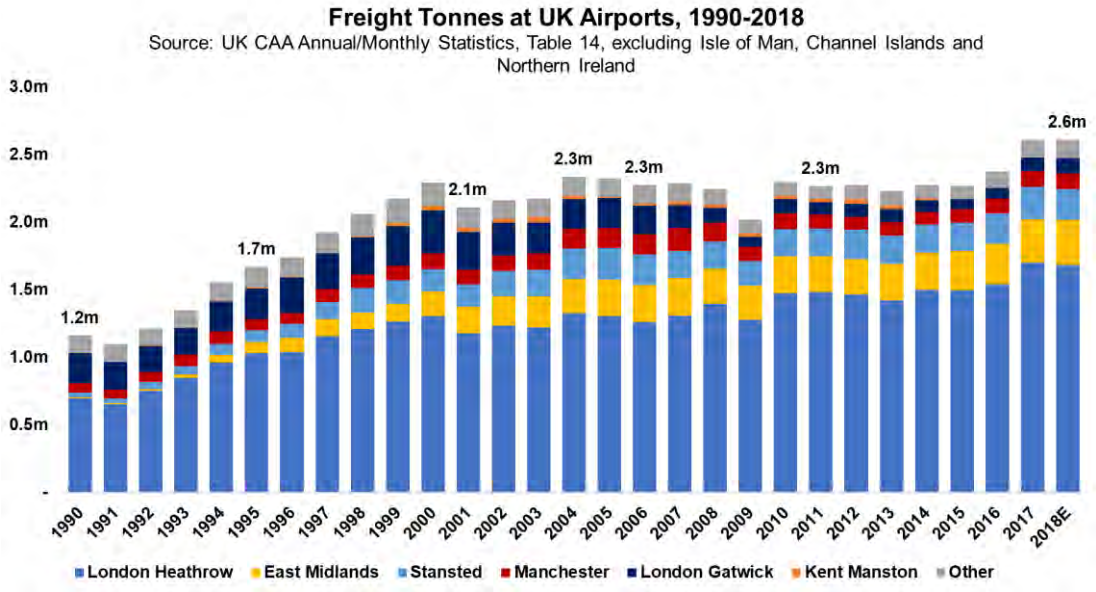

Figure 1 – Timeseries of mainland UK freight tonnage[38]

77. The short-term spike in demand was consistent with global trends. IATA reported that 2017 global air freight demand grew by 9.0%, measured in freight tonne kilometres[39], while European airlines recorded an 11.8% increase.

> *"Full-year 2017 demand for air freight grew at twice the pace of the expansion in world trade (4.3%). This outperformance was a result of strong global demand for manufacturing exports as companies moved to restock inventories quickly.*
>
> *Air cargo had its strongest performance since the rebound from the global financial crisis in 2010. Demand grew by 9.0%. That outpaced the industry-wide growth in both cargo capacity and in passenger demand. We saw improvements in load factors, yields and revenues. Air cargo is still a very tough and competitive business, but the developments in 2017 were the most positive that we have seen in a very long time."*

[37] In this report, we have estimated 2018 outturns for the UK from monthly CAA data. Traffic for the first 11 months of the year has been published. At the time of completion of this report, the December 2018 statistics were not complete. Data from airports representing around 7% of cargo tonnage had not yet reported. We have assumed that the trends for these "missing" airports were the same as for the reporting airports.

[38] In this report, we have removed Northern Ireland airports from our analysis of the UK market. We understand that there have been some data reliability issues with the Belfast International Airport cargo statistics. This was referenced on P68 of the Department for Transport UK Aviation Forecasts from 2017 (UK Department for Transport, 2017).

[39] (IATA, 2018)

78. However, more recent data indicates this period of strong growth has come to an end. Since June 2018, monthly growth in freight tonnes across mainland UK airports has been low or negative, with the trend generally worsening.

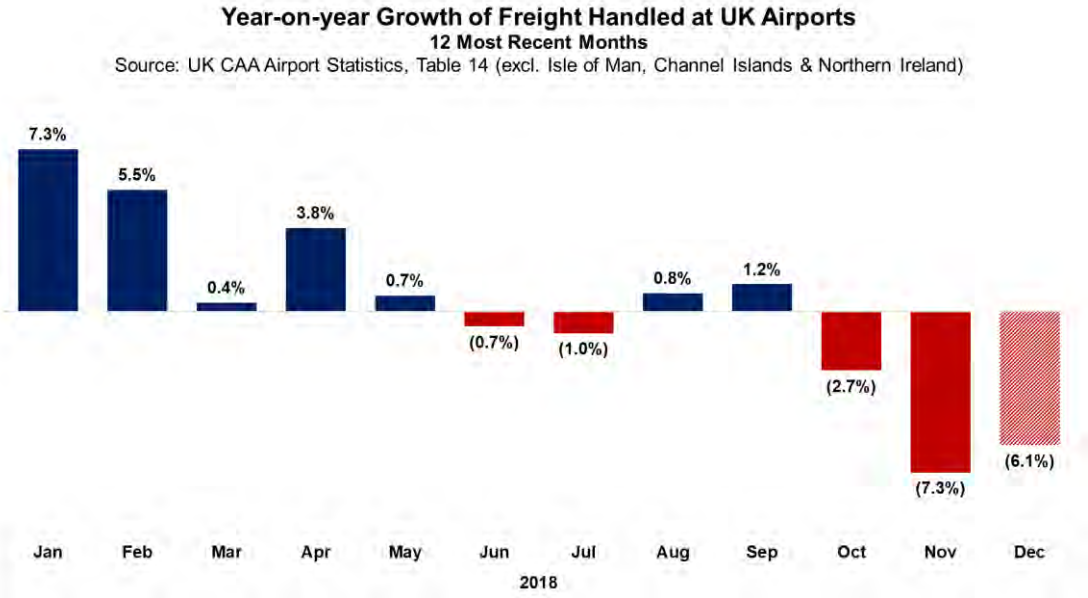

Figure 2 – Monthly freight tonnes at mainland UK airports (December estimated from preliminary results)

79. Global air freight demand has also been cooling and there is some caution about the outlook for 2019. In December 2018, global freight traffic declined compared to December 2017[40].

> *"Air cargo's performance in 2018 was sealed by a softening in demand in December. Year-on-year, December demand decreased by 0.5%. This was the worst performance since March 2016. Freight capacity, however, grew by 3.8%. This was the tenth month in a row that year-on-year capacity growth outstripped demand growth.*
>
> *International e-commerce grew in 2018 which was a positive factor for the year. Yet, there was a softening of several key demand drivers:*
>
> - *The restocking cycle, during which businesses rapidly built up inventories to meet demand, ended in early 2018;*
> - *Global economic activity weakened;*
> - *The export order books of all major exporting nations, with the exception of the US, contracted in the second half of 2018;*
> - *Consumer confidence weakened compared to very high levels at the beginning of 2018.*
>
> *"Air cargo demand lost momentum towards the end of 2018 in the face of weakening global trade, sagging consumer confidence and geopolitical headwinds. Still, demand grew by 3.5% compared to 2017. We are cautiously optimistic that demand will grow in the region of 3.7% in 2019. But with the persistence of trade tensions and protectionist actions by some governments there is significant downside risk. Keeping borders open to people and to trade is critical," said Alexandre de Juniac, IATA's Director General and CEO."*

[40] (IATA, 2019)

80. In our previous report, we forecast that the UK air freight market would grow by CAGR 2.4% to 2040. This level of growth is well ahead of overall trends since 2000.

- The strong growth recorded in 2017 and the first part of 2018 has not been sustained. A characteristic of the air cargo sector is temporary fluctuations in demand.
- Therefore, it is premature to reassess potential future growth rates until there is evidence of a continued uplift in growth rates.

3.2. Freighter vs. Bellyhold

81. One of the key trends seen in the UK has been the increasing role of passenger aircraft for carrying cargo, with the role of freighter aircraft diminishing. In 2004, freight carried on cargo only flights accounted for 37% of the mainland UK market. This has been consistently reducing, falling to 29% of the market by 2018E.

- While freight carried on all cargo aircraft grew in absolute terms in 2017, passenger aircraft bellyhold freight grew significantly faster.
- In 2018, we estimate that freight carried on all cargo aircraft fell in absolute terms, resulting in a further drop in share of total cargo.

82. Therefore, the established trend towards bellyhold freight has continued in both 2017 and 2018. The all-cargo segment that a reopened Manston would be targeting has become less important within the UK market.

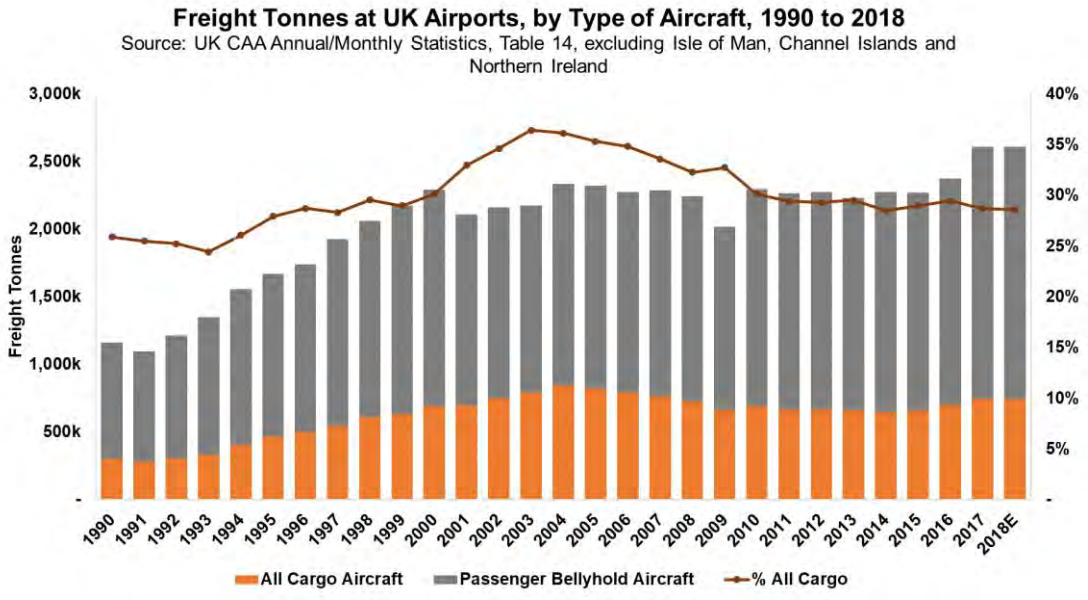

Figure 3 – Annual freight tonnes at mainland UK airports by type of aircraft

3.3. Consolidation Trend of Cargo-only Operations at Main Airports

83. In 1990, there were many UK airports from which carriers operated cargo only flights. Since then, there has been a very clear trend to consolidate cargo only operations at a few airports.

84. 2017 and 2018 have seen the continuation of this consolidation trend. The three largest airports for freight carried on cargo only aircraft (Heathrow, East Midlands, Stansted) accounted for 87.6% of this mainland UK market (by tonnage) in 2018E. This is up from 44% in 1990 and 86.7% in 2016.

85. Similarly, the consolidation trend at these top three airports continued for freighter ATMs in both 2017 and 2018. Despite strong growth in overall cargo volumes in 2017, the number of freighter movements across mainland UK actually fell. We estimate that there was a further drop in 2018.

- This indicates that even during spikes in cargo demand, this has not translated into additional freighter activity.
- The additional demand has been accommodated through a combination of greater use of passenger aircraft bellyhold capacity and increasing average loads per freighter aircraft.

86. These freighter flights have been increasingly concentrated on East Midlands, Heathrow and Stansted. We estimate that these three airports accounted for 68.4% of all cargo flights in 2018, compared to 65.0% in 2016 (and 23.3% in 1990).

- Number of freighter flights at "other" airports has fallen from ca. 73,000 in 1990 to ca. 16,000 in 2018E.

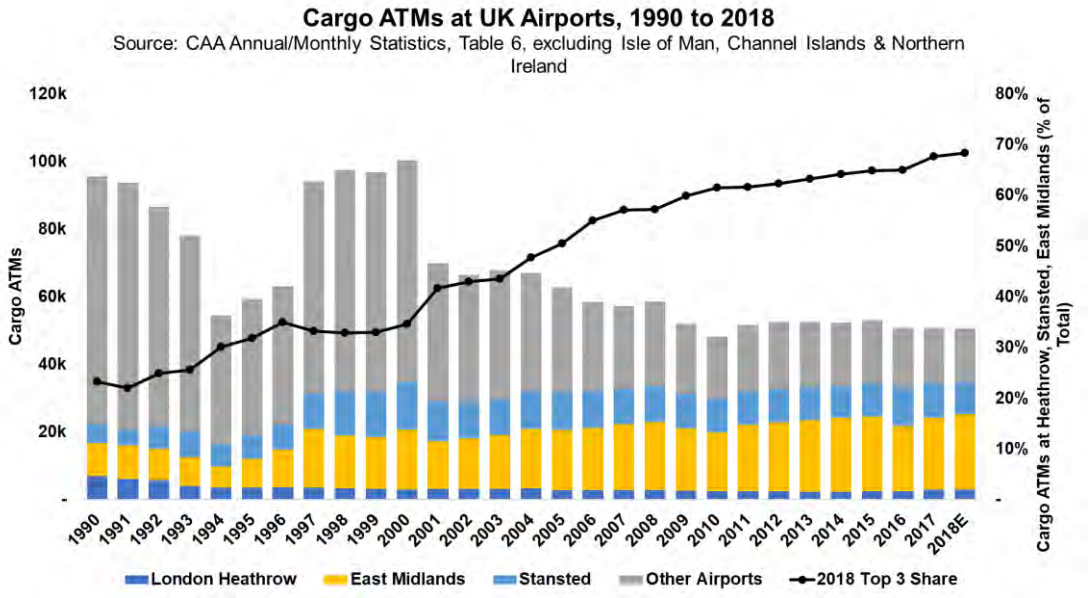

Figure 4 – Annual cargo flights at mainland UK airports

3.4. Developments at Individual Airports

Heathrow

87. Heathrow recorded strong freight growth in 2017, highlighting that there remains scope to grow even before the third runway is opened.

- +15.6% increase in freight carried on all-cargo aircraft (4th consecutive year of growth).
- +9.9% growth in freight carried in the bellyhold of passenger aircraft.
- Source: UK CAA Statistics.

88. The airport has reported marginal growth in cargo in 2018 (+0.1%), reflecting the more challenging market conditions[41].

89. Progress towards the opening of a third runway has continued, with the UK Parliament voting to approve the Airports National Policy Statement, which provides support for Heathrow expansion, by 415 votes to 119 in June 2018.

- Our previous report (Section 6.2) highlighted Heathrow's strategy to improve cargo competitiveness and lift freight volumes to 3 million tonnes a year by 2040 (compared to ca. 1.7m tonnes in 2018).

90. In January 2019, Heathrow launched an airspace consultation process[42], which includes plans to increase the number of flights operated off the existing two runways.

> *"We are exploring plans to use the existing runways more to create up to 25,000 ATMs per year. This would be in advance of the completion of the third runway and could only happen if consent for expansion is granted."*

Gatwick

91. Gatwick has continued to grow cargo volumes, linked to the development of long-haul passenger services using widebody aircraft. Cargo tonnes grew by 16.1% in 2018[43], following growth of +24.4% in 2017[44].

92. As of 2018, only 11% of ATMs at Gatwick were used by widebody aircraft (source: OAG). Thus, there is significant scope for Gatwick to increase its cargo capacity by increasing the share of widebody aircraft using the airport. To some extent this will happen naturally as passenger demand increases. Widebody share has risen in every year since 2014 (from 7.3% in 2014, to 11.2% in 2018).

93. Gatwick[45] is also exploring the potential utilisation of its existing standby runway, to increase the number of flights it can operate.

> *"… this draft master plan also sets out for the first time how the airport could meet future demand by potentially using our existing standby runway for departing flights only, alongside our main runway. We believe this development could be delivered by the mid-2020s, with relatively little disruption..."*

94. The scheme has the potential to increase the number of flights operated at the airport to 375,000–390,000, compared to 315,000-340,000 potentially achievable from the main runway only. Note in 2017/18, the actual number of flights was just above 280,000[46].

[41] (Heathrow Airport, 2019 a)
[42] (Heathrow Airport, 2019 b, p. 13)
[43] (Gatwick Airport, 2019)
[44] (Gatwick Airport, 2018 a)
[45] (Gatwick Airport, 2018 b, p. 7)
[46] (Gatwick Airport, 2018 b, pp. 80, 88)

Stansted

95. In 2018, Stansted was successful in its application to increase the planning condition limiting its passenger throughput. Its passenger cap was lifted to 43 million passengers per annum, compared to the previous limit of 35 million passengers[47].

96. In relation to air transport movements, the airport previously was constrained by the following annual limits:

- Passenger ATMs: A maximum of 243,500 p.a.
- Cargo ATMs: A maximum of 20,500 p.a.
- Other ATMs: A maximum of 10,000 p.a.

97. The new application did not raise the overall number of flights allowed (274,000) but abolished the sub-categories. This means there is now no specific limit to the number of cargo or passenger flights that can be operated in the future (within the overall cap).

Luton

98. Luton Airport currently is subject to a planning cap of 18 million passengers per annum. The freehold owners of Luton Airport (London Luton Airport Limited, a Luton Council company) have issued its vision[48] for development of the airport to 2050. It envisages growth up to 36-38 million passengers per year.

> *"To make the best use of the existing runway at LTN to provide the maximum benefit to the local and sub-regional economy; to deliver good levels of service; and to actively manage environmental impacts at the local and wider levels in line with our commitment to responsible and sustainable development."*
>
> *Our assessment is that the capacity of the existing runway is 36-38 mppa, or in the region of 240,000 aircraft movements[49] per year."*

[47] (Stansted Airport, 2018 b), (Stansted Airport, 2018 a, pp. 4, 26)
[48] (London Luton Airport Limited, December 2017, p. 5)
[49] During 2018, there were just over 105,000 air transport movements at Luton (source: UK CAA Statistics), less than half the assessed runway capacity.

3.5. Summary

99. There have been some relevant developments in the air cargo sector since October 2018. Cargo demand in the UK and globally was particularly strong at the end of 2017 and in the early months of 2018. However, this was a short-term event, with UK cargo volumes contracting by the end of 2018. IATA[50] has expressed concerns about the strength of the cargo market globally.

100. In any case, the assessment of future cargo demand for Manston should be based on established historic trends, not short-term fluctuations in demand. Recent developments have not changed our view on the long-term growth potential of the air cargo market in the UK. The general trend towards bellyhold freight has continued (albeit with year to year variations), as has the consolidation of freight at the largest cargo airports. Finally, despite strong growth in cargo demand in 2017, the number of freighter flights in the UK actually reduced.

101. In the period since our previous report, both Heathrow and Gatwick have recorded substantive growth in air freight tonnage. This demonstrates the continuing role both airports will play in meeting future demand. As both Heathrow and Gatwick grow the proportion of long-haul widebody passenger flights, this will generate incremental bellyhold capacity.

102. Furthermore, the four largest airports in the London airport system have all recently presented plans to add capacity in the medium term, prior to the proposed new runway at Heathrow. The scale of these proposed developments – if implemented – will make a significant contribution to relieving future airport capacity pressures. This is in addition to the forthcoming capacity increases that were highlighted in Section 6.4 of our previous report.

[50] (IATA, 2019)

4. Review of Recent Azimuth Reports

4.1. Introduction

103. Since we completed our analysis for our previous report, Azimuth has twice updated its set of reports. First, as part of the consultation process, Azimuth released an updated version of its set of reports in January 2018[51]. Then in July 2018, a further updated version was issued as part of the DCO application[52].

104. We have reviewed both sets of Azimuth reports.

- Much of the Azimuth reports are unchanged from the original version. We therefore do not duplicate our critique from the previous report.
- Where significant new material has been added, this has been critiqued.
- However, we have not commented on general background or non-material additions to the Azimuth reports.

105. The rest of this section reviews each Azimuth report in turn, in chronological order. Where new material appears more than once (e.g. in the Executive Summary and the main body of text, or in both sets of reports), we only comment on the first occurrence.

4.2. Reports Supporting Consultation Process (January 2018)

Volume I

106. Azimuth[53] refers to airfreight in Europe reaching capacity in 2017:

> *"At the end of November 2017, airfreight in Europe reached capacity, which has led to an increase in prices and delays[.] Heathrow Airport also reported severe congestion, with trucks queuing and some being turned away."*

107. It could be wrongly inferred that the lack of capacity being discussed relates to airport capacity. In fact, the situation appears to have been caused by a lack of airline capacity due to seasonal peaks (freight demand can be very lumpy).

- As noted above (see paragraph 77), in 2017 freight demand grew faster than airline capacity.
- This situation reversed in 2018 (see paragraph 79).
- In any case, there was no shortage of available airport capacity at all but the most congested passenger hubs.

108. Azimuth[54] also restates similar arguments as previously put forward in relation to the low level of freighter activity in the UK.

> *"… However, when the air freight market in the UK is considered against that of Europe, the lack of availability in the UK for freighter slots, airports' preference, in a constrained market, for passenger flights, and delays in loading and unloading freighter aircraft provide an equally plausible explanation for the reduced proportion of freighter to belly freight transport of goods in the UK."*

109. This argument ignores the availability of freighter capacity at centrally located airports such as East Midlands Airport. Other regional airports with the capacity to accommodate substantial freighter

[51] (Azimuth Associates, January 2018 a), (Azimuth Associates, January 2018 b), (Azimuth Associates, January 2018 c)
[52] (Azimuth Associates, July 2018 a), (Azimuth Associates, July 2018 b), (Azimuth Associates, July 2018 c)
[53] (Azimuth Associates, January 2018 a, p. I)
[54] (Azimuth Associates, January 2018 a, p. II)

operations include Doncaster Sheffield, Manchester, Liverpool and Prestwick (see Section 6.3 of our previous report).

110. Azimuth[55] refers to updated aviation demand forecasts:

> *"Chris Grayling MP, Secretary of State for Transport said that evidence from updated aviation demand forecasts, 'show that the need for additional runway capacity is even greater than originally thought. They show that all 5 of London's main airports will be completely full by the mid-2030s, and 4 of them within a decade.' "*

111. We have previously shown that Heathrow, Gatwick, Stansted and Luton have all recently presented plans to develop capacity (see Section 3.4). In all cases, the additional capacity is beyond what was envisaged by the Airports Commission[56] in its assessment of the potential for maximising existing runway capacity.

112. Furthermore, as discussed in the previous report[57], more centrally located airports such as East Midlands Airport are better placed to serve UK freight demand than London airports.

113. Azimuth[58] comments on congestion at Heathrow.

> *"Heathrow …. has seen cargo volumes increase by 10% this year, leading to congestion, delays and an inability to reach the airport's cargo centre."*

114. It is worth clarifying that the congestion is related to road access, rather than airport capacity itself. These road congestion issues are in the process of being addressed.

115. There are also references to recent developments at Amsterdam Schiphol Airport. Firstly[59], a parallel is drawn with Stansted Airport in relation to the possibility of freighter flights being displaced.

> *"Ryanair is the dominant carrier at Stansted Airport and, since the low cost carrier (LCC) model is based on fast turnarounds, the airline will not tolerate interference from cargo handling. Ryanair is increasing their offering to more distant destinations including Turkey, North Africa, Cyprus and the Middle East. For the airline to operate four rotations per day to maximise the profitability of each aircraft, late evening and potentially night time slots will be required….*
>
> *Freight carriers have traditionally used night slots at the airport and these may become less available if the LCCs utilise them. This situation occurred at Schiphol Airport (see Section 7.5 for more details), where air traffic capacity constraints were announced in September 2017. These constraints particularly affected freight operators, as passenger flights were preferenced for a number of reasons. As such, it may be that moving freight to Manston Airport could represent a significant opportunity for MAG should they want to free up slots for higher value passenger aircraft use."*

116. Low cost carriers and cargo airlines can coexist at airports (for example, East Midlands). The potential loss of night slots to low cost carriers at Stansted is purely speculative. Schiphol (one of Europe's major passenger connecting hubs) is not a good comparator airport to Stansted (a low cost carrier focussed airport).

117. The Azimuth report[60] then goes on to speculate:

> *"Manston Airport, focused on air freight, may benefit from the relocation of operations from Schiphol and the knock-on effect in northern Europe…. A freight-focused operation at*

[55] (Azimuth Associates, January 2018 a, p. 6)
[56] (Airports Commission, 2015)
[57] (Altitude Aviation Advisory, 2018, p. 47)
[58] (Azimuth Associates, January 2018 a, p. 11)
[59] (Azimuth Associates, January 2018 a, p. 17)
[60] (Azimuth Associates, January 2018 a, p. 38)

Manston Airport, in the South East of England but close to the rest of Europe, may provide an ideal option."

118. Manston is hardly in an ideal location to act as on overflow from Schiphol. Lelystad Airport, 45km to the north east of Amsterdam is being designated as an overflow airport from 2020. Otherwise, Liege and Leipzig (leading cargo hubs) are much more closely located to Schiphol than Manston.

119. On a separate point, we note that Schiphol saw a reduction in freighter flights of 10.4% in 2018 (due to slot restrictions), but cargo volumes only reduced by 2.5%. This is another illustration of the role passenger bellyhold capacity plays[61].

120. Finally, Azimuth refers on various occasions to recent strong growth in cargo demand. In Section 3.1 we highlight that growth in recent months has been slowing or negative. Furthermore, we argue it is more robust to base future projections on long established trends rather than short term spikes in demand.

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121. Azimuth make a couple of observations in relation to its forecasts.

"… However, in order to avoid any bias (optimism or pessimism), efforts to quality assure the analysis should be made. For this study, the methodology used to forecast air freight traffic has been peer reviewed by Loughborough University and by the RiverOak consultancy team.[62]"

"Some commentators believe that combining the volume and weight load factors would result in a considerably different, more successful, picture of the airfreight industry…. …. coupled with the potential for current reporting to underestimate the success of the airfreight industry, the DfT figure of 4% has been used to uplift on the Year 10 figures to extrapolate the long-term forecast for Manston Airport[63]."

122. We have not seen any evidence of satisfactory peer review.

- Clearly, the RiverOak consultancy team is not an independent reviewer, nor likely to have the specialist aviation expertise to adequately peer review the methodology.
- The reference to peer review by Loughborough University is not clear – we cannot see any further reference to a Loughborough University review of the Azimuth forecast approach. We do not know if Loughborough University has specifically peer reviewed the Azimuth forecasts themselves or commented (in another context) on the generic methodology that Azimuth subsequently claim to have applied.

123. Secondly, the industry approach to measuring load factor is irrelevant in the context of forecasts – while we agree that load factor as measured by weight does not always reflect volume restrictions, it does not distort historic cargo trends or invalidate future projections.

[61] (Schiphol, 2019)
[62] (Azimuth Associates, January 2018 c, p. 4)
[63] (Azimuth Associates, January 2018 c, p. 8)

4.3. Reports Supporting DCO Application (July 2018)

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124. In a general discussion on the political context for aviation in the UK, Azimuth draws on the Airports National Policy Statement issued by the Department for Transport in June 2018. This includes quotations from the document on the economic importance of air freight – which we do not dispute.

125. Azimuth[64] also states – in relation to the National Policy Statement – that:

> *"The Airport NPS indicates the Government's concerns over capacity constraints, pointing to the impact on connectivity. Profit maximisation means that profitable routes are operated at higher frequencies but other routes cease to be served, reducing the possibility of using belly freight to those destinations and increasing the need for dedicated freighers [freighters]".*

126. The conclusion about increasing the need for dedicated freighters appears to be from Azimuth rather than the National Policy Statement (there is no reference to freighters in the National Policy Statement).

- This is one of several examples where references cited by Azimuth are somewhat misleading – either by not clearly distinguishing between the source material and Azimuth's viewpoint, or by taking quotes out of their original context.

127. In fact, the National Policy Statement[65] recognises the leading role that long-haul passenger services play at Heathrow in relation to serving the UK freight market.

> *"The aviation sector can also boost the wider economy by providing more opportunities for trade through air freight. The time-sensitive air freight industry, and those industries that use air freight, benefit from greater quantity and frequency of services, especially long haul. By providing more space for cargo, lowering costs, and by the greater frequency of services, this should in turn provide a boost to trade and GDP benefits.*
>
> *As set out above, expansion at Heathrow Airport delivers the biggest boost in long haul flights, and the greatest benefit therefore to air freight. This is further facilitated by the existing and proposed airport development of freight facilities as part of the Northwest Runway scheme.…"*

128. Azimuth[66] also attempts to draw inappropriate parallels with Manchester in relation to the potential economic benefit of routes to /china.

> *"The potential for increased trade with China has been demonstrated by the impact of direct flights operating from Manchester. The DfT report that the value of goods exported by businesses from Manchester Airport has doubled since the route commenced (DfT, 2018a, p. 38). This success provides an indication of the potential for East Kent should routes between China and Manston Airport be made available."*

129. The growth in value of goods that is referenced was most probably driven by the launching of direct passenger services between Manchester and Beijing. This illustrates the important role bellyhold cargo plays. Linking this development to theoretical direct freighter services from China to Manston has limited relevance.

130. Azimuth[67] makes further assertions in relation to capacity constraints at Heathrow (see also paragraph 113):

[64] (Azimuth Associates, July 2018 a, p. 9)
[65] (UK Department for Transport, June 2018, p. 23)
[66] (Azimuth Associates, July 2018 a, p. 14)
[67] (Azimuth Associates, July 2018 a, p. 15)

> *"With warnings that services on key trade routes from Heathrow are reaching capacity, the UK's exporters could be hampered by lack of access to markets. In particular, routes such as Shanghai, Delhi, Mumbai, Los Angeles, Kokyo Haneda and Dubai are affected".*

131. The warnings have been issued by Heathrow, as part of its argument for a third runway. We point out that:

- New capacity will be added at Heathrow in the bellyhold of passenger aircraft when passenger demand results in additional flights (displacing less lucrative short haul flights prior to a third runway).
- Furthermore, there has been an expansion of long haul at Gatwick recently, with various new services to the Asia Pacific and Middle East regions. These are contributing to high rates of cargo growth at Gatwick.
- Finally, available capacity exists for additional dedicated freighter services at Stansted or East Midlands Airport, if demand exists.

132. Additional reference is made to recent strong growth rates in the UK for the cargo only market[68].

> *"In London, the cargo-only market grew by 5.5% in terms of tonnage between Q1 2016 to Q4 2016 and Q1 2017 to Q4 2017 … AirBridgeCargo has increased its freighters into Heathrow, Etihad has commenced freighter services at Stansted and East Midlands, and Manchester Airport saw 15% growth to China with the addition of Hainan Airline's Beijing service."*

133. Given the natural short-term fluctuations in the cargo market, we consider it of limited value to draw conclusions from growth rates of a single year. The references to new freighter services at Stansted and East Midlands contradicts the Azimuth assertion that the low levels of freighter growth in recent years are mainly due to airport capacity shortages.

134. Azimuth[69] also discusses the Department for Transport projections for freighters, where zero growth is modelled.

> *"Despite 2017 figures and industry forecasts, the DfT are currently showing no growth from 2016 figures in the all cargo market (DfT, 2017, 2.5.6). This issue was raised at a meeting with the DfT on 25 January 2018. The DfT's response, received on the 1 June 2018, points out that they do not model freight in detail and the zero percent growth is an assumption. The Department is currently revaluating air freight policy as part of the developing Aviation Strategy. It is unclear whether the zero percentage growth assumption is due to the absence of detailed information or is simply pragmatic, since the lack of capacity for dedicated freighters would preclude any substantial increase in movements, particularly in the South East."*

135. It is not normal practice to revise long term projections on the basis of a single year. Furthermore, there is no evidence to suggest that the zero-growth projection for all cargo services is based on capacity constraints.

- As discussed earlier in this report, there is no overall shortage of freighter capacity in the UK, either now or likely in the foreseeable future. Airports such as East Midlands are well positioned to serve freighter demand through most of mainland UK, including South-East England.

[68] (Azimuth Associates, July 2018 a, p. 17)
[69] (Azimuth Associates, July 2018 a, p. 18)

- A more likely explanation for the zero-growth assumption is that the DfT anticipates a continuation of trends towards bellyhold (UK CAA statistics indicate that the number of freighter flights have almost halved in the period 1998-2018).

136. Further assertions are made in relation to Stansted Airport[70], and the risk that freighter flights could be displaced (see also paragraph 115).

> *"… Viscount Aviation's analysis of this situation is that cargo flight timings are likely to be impacted severely since the airport will prioritise servicing Ryanair. This is because the proportion of the airport's income derived from Ryanair is considerable. This focus on service quality of the LCCs, coupled with the high usage of the single runway is likely to result in all-cargo flights waiting to land or take off, causing a knock-on effect to their schedules and hampering their operations. "*

137. This argument is speculative. The times of peak runway requirement for low cost carriers and freighters are unlikely to overlap. In any case, the Viscount Aviation report has not been published. Therefore, it is not possible to fully comment on the arguments put forward.

138. Azimuth[71] draws on a news article to put forward the proposition that there is potential for the transformation of low usage cargo focused airports, referencing Hahn Airport in particular.

> *"This move to build up dedicated freighter capacity, 'is opening a new debate about the viability of cargo airports'. Amazon's interest in Hahn Airport, a former military airbase, 120 kilometres from Frankfurt, which has reported years of losses, low usage, and has a 23.00 to 05.00 hours curfew, is indicative of the potential for the redevelopment of cargo focused airports. "*

139. However, the article[72] provided as a source for this proposition is generally sceptical about the potential for the redevelopment of cargo focussed airports such as Hahn:

> *"Even a flight curfew between 11 pm and 5 am at Frankfurt [the main airport] could not cement Hahn's position as a cargo gateway. "*
>
> *"Mike Webber, a former airport cargo executive turned industry consultant… "If you had to do a cost analysis to build a cargo airport to accommodate Amazon, you wouldn't do it," he said. He argued that the growth of e-commerce may open opportunities for some airports with existing infrastructure, but would not usher in a renaissance for cargo airports, because the industry was unlikely to see a proliferation of e-tailers with dedicated airfreight operations. "How many Amazons are there going to be?" he asked."*
>
> *"Whether an operation would translate into profits for airports which landed a chunk of this business is another question. Few cargo airports have managed to produce black figures, Mr Webber said…… cargo is an unlikely avenue to profitability, Mr Webber added."*

140. Furthermore, Amazon's apparent interest in Hahn has been refuted[73].

> *"Earlier this year, the newspaper Süddeutschen Zeitung had reported that Amazon had held talks with Frankfurt-Hahn Airport, which has been losing money and up for sale at least since February. Amazon, the paper reported, was likely one of three unnamed bidders that had shown interest in buying HHN.*

[70] (Azimuth Associates, July 2018 a, p. 25)
[71] (Azimuth Associates, July 2018 a, p. 31)
[72] (The Load Star, 2016)
[73] (Air Cargo World, 2016)

Today, however, officials for HHN told Lloyd's Loading List that neither the airport nor its municipal owner had been in contact with Amazon regarding any possible sale."

141. Section 6.3 of the Azimuth[74] report discusses – in some detail - dedicated freighter use compared to belly freight. It expands previous arguments about the importance of dedicated freighters within the air cargo sector. The role played by dedicated freighters, despite diminishing in recent years, is not disputed. However – as with previous Azimuth reports - no evidence is provided to support the assertion that the low level of freighter activity in the UK is due to lack of airport capacity. Once again, Azimuth does not acknowledge:

- The availability of substantial airport capacity in central UK locations (e.g. East Midlands Airport).
- The availability of substantial bellyhold capacity due to the extensive long-haul network at Heathrow.
- The obvious geographic disadvantages of the UK as a location for distribution of long-haul cargo across Europe. In particular, for the important freight market of Europe-Asia, the UK's location requires dedicated freighters to overfly most of Europe to reach the UK (inefficient from a time and cost perspective compared to flying to/from mainland European points and then distributing cargo across Europe through road feeder services).

142. Section 6.4[75] of the Azimuth report highlights the role of road feeder services. It correctly identifies that cost and convenience have been key factors in the relative growth of trucking (compared to air) for short haul cargo.

143. We agree that for long haul cargo, an entire journey by truck is not practical. However, road feeder services are an integral part of the air cargo business model. For all but the most time sensitive cargo, a combination of flying and road feeder services provides fast journey times.

- This approach has massive cost benefits from the consolidation of disparate cargo flows.
- For example, accessing cheap bellyhold capacity at Heathrow and major mainland European hubs can more than offset the costs of cross channel trucking.

144. As discussed earlier, the UK is not suitably located to act as a central distribution point for Europe, which has been a major factor in the relatively limited freighter activity in the UK.

145. The most recent Boeing cargo forecast[76] comments on the role of trucking in the context of Europe.

"Air cargo has never been solely an airport-to-airport service. Rather, air cargo is a single component of a transportation infrastructure that links the shipper and the consignee. Trucking offers door-to-door and factory-to-distribution center service, which air transport alone cannot provide.

Scheduled airlines that serve the intra-Europe market have used truck flights, trucking services registered with their own flight number, to extend their networks and add scheduling flexibility.

Long-haul truck-flight operations in Europe supplement overall air logistics systems. Their dramatic rise in the past decade has clearly contributed to a decline in growth of scheduled freight carried by air. According to the truck-flight schedules published by airlines, since 2008, airport pairs of truck flights grew 2.5 percent on average per year.

Weekly frequencies of truck flights grew 15.5 percent on average per year between 2008 and 2013, but the growth has paused since 2013. After a long period of stagnation from

[74] (Azimuth Associates, July 2018 a, p. 33)
[75] (Azimuth Associates, July 2018 a, p. 36)
[76] (Boeing, 2018, p. 40)

2013 to 2017, weekly frequencies of truck flights grew 18.9 percent in 2018. Most of the growth occurred in the major hub airports of the carriers, strengthening their air cargo networks.

Truck-flight operations provide regularly scheduled freight service for high-value or work-in-progress goods between manufacturing facilities, especially to and from central and eastern Europe. Scheduled truck operations are often used where demand is too low or infrequent to warrant dedicated freighter airplane service."

146. Similar trends have been identified in North America[77]:

"Truck flights allow combination carriers to offer service comparable to that of pure cargo carriers. Rising fuel costs magnify the inherent cost advantages of ground transport over air transport, and although fuel costs decreased in the 2015–2017 timeframe, ground transport retained its cost advantage over air transport."

[77] (Boeing, 2018, p. 24)

4.4. Summary

147. There have been only some relatively minor changes to content in the updated Azimuth reports from the versions we reviewed as part of our previous report. The arguments put forward by Azimuth are fundamentally unchanged, the unrealistic Manston traffic projections have not been modified and the weaknesses we had previously identified have not been addressed

148. The new Azimuth reports contain some new material. This new material can be broadly characterised as:

- Extrapolation from the (temporary) strong global cargo demand in late 2017/early 2018 to support the long-term case for Manston.
- New references in support of its arguments for the potential of Manston. However, the conclusions drawn from these references are typically inappropriate. A deeper analysis of the new material highlights either limited applicability for Manston or that the new material is not supportive of the case made by Azimuth.
- Additional background material which is not directly relevant to the case for Manston.

149. Therefore, our conclusions from our original report remain valid. These are summarised below.

- Manston has historically played a role as a niche air freight airport. We do not see potential for a more significant role in the future. It is in a poor location to serve the wider South East or UK market. Other structural disadvantages include lack of critical mass, lack of a passenger hub, and night flight restrictions.
- We have identified significant weaknesses in the Azimuth analysis and forecasts. The following factors have not been acknowledged and/or adequately reflected – there is no overall shortage of freight capacity in the UK or South East specifically, cargo activity in the UK has become very consolidated on the 3 cargo hubs (Heathrow, Stansted and East Midlands), there has been a strong trend towards bellyhold freight (with the role of dedicated freighters diminishing) and trucking is a highly integrated component of the air freight business model, and not merely a substitute for air freighter flights when airport capacity is constrained.
- We consider the Azimuth freight forecasts to be extremely optimistic, with negligible supporting evidence. In particular, historic performance is ignored, there is a heavy reliance on qualitative techniques (with no substantive attempt to quantify the size of the markets Manston will be competing in, or how it would gain market share) and many of the references from published studies are too generic to be meaningful or are taken out of context.

150. Overall, the Azimuth forecasts and report do not provide any meaningful evidence that a reopened Manston Airport would be remotely viable.

- The arguments put forward by Azimuth run contrary to well established industry trends.
- The projections put forward have negligible quantitative justification, relying on a range of potential operators which either are unlikely to be interested in Manston or are no longer active in the freighter segment[78].
- There is no convincing reasoning why a reopened Manston would be more successful than other airports with similar characteristics, or that improvements on historic performance could be achieved.

[78] (York Aviation, 2019, p. 23)

5. UK Regional Airport Financial Performance and Debt Funding Characteristics

5.1. Introduction

151. This section provides an overview of UK regional airport financial performance, with particular focus on lower throughput regional airports (similar to the Manston Airport proposal).

152. RSP has provided very limited financial forecasts or financing details relating to the application for the redevelopment and reopening of Manston Airport.

153. The lack of detailed and substantiated financial forecasts, and nothing of substance in relation to how the proposed investment could be commercially financed raises significant questions around the financial viability and fundability of the proposal.

154. The financial viability challenges for lower throughput UK airports have been highlighted in recent years with three airports taken over by the public sector, where experienced private sector operators could not operate these airports on a viable commercial basis.

155. This section highlights the key components and characteristics of the airport business that the providers of debt (or equity) are likely to focus on when evaluating credit worthiness of the asset in relation to a potential debt and/or equity raising process.

156. This analysis is referenced in the following sections when considering the potential performance of a reopened Manston Airport, and its likely ability to raise debt and/or equity on the commercial market.

5.2. Altitude Aviation Experience of the Airport Debt and Equity Market

157. The Altitude team has advised on many airport debt transactions relating to UK and international airports over a long period. Examples of our recent airport debt transaction experience on processes that have reached financial close is set out below.

Airport	Debt Amount	Closing Date
Leeds Bradford Airport	Ca. £80m	2019
London Luton Airport	Ca. £390m	2017
Budapest Airport	Ca. €1.3bn	2017
Bristol Airport	Ca. £279m	2015
Glasgow, Aberdeen and Southampton airports	Ca. £500m	2014
Edinburgh Airport	Ca. £500m	2014

158. Our experience from these successful debt processes is that lenders will only provide funds where they have confidence that the request is supported by a detailed and sustainable business plan that can withstand a high level of stress testing. We have not seen any detailed information from RSP that would support a successful request for debt funding of the proposed business.

159. The Altitude team has also advised on many airport equity transactions relating to UK and international airports over a long period. Examples of recent airport equity transaction experience that have reached financial close is set out below.

Airport	Description
2018	
London Gatwick (UK)	Due diligence support for Vinci Airport's acquisition of a 50.01% equity stake in Gatwick Airport (reported price £2.9 billion). The project is due to reach financial close in June 2019.
Airports Worldwide (UK, Sweden, USA, Costa Rica)	Due diligence support for Vinci Airport's acquisition of Airports Worldwide (sale agreed, price undisclosed). The transaction comprised equity in five airports (Belfast International, Stockholm Skavsta, Orlando Sanford, San Jose (Costa Rica) and Liberia (Costa Rica), and four US airport management contracts.
Luton Airport (UK)	Vendor due diligence support for sale of Ardian's 49% stake in London Luton Airport Operations Limited to AMP Capital (sale agreed, price undisclosed).
Belgrade Airport (Serbia)	Due diligence support for Vinci Airport's successful bid for a 25 year concession to develop and operate Belgrade Airport (Vinci announced as preferred bidder in January 2018 with a bid of €501m initial payment, investment of €732m over the concession period and annual payments of €4.3m to €16m). The project reached financial close in December 2018.
2017	
Copenhagen Airport (Denmark)	Vendor due diligence support for minority equity disposal by Macquarie European Infrastructure Fund 3 of its 46.6% shareholding in Kastrup Airport Parents ApS, a holding company which indirectly holds a 57.7% ownership in Copenhagen Airports A/S. The indirect 26.9% shareholding in Copenhagen Airport had an implied enterprise value of €1.6bn (ca. 20x EBITDA multiple).
Birmingham / Bristol airports (UK)	Vendor due diligence support for minority equity disposal by Ontario Teachers' Pension Plan (undisclosed but reported to reflect ca. 22x EBITDA multiple).
Leeds Bradford Airport (UK)	Due diligence support for 100% acquisition for ca. £220m by AMP Capital (ca. 29x EBITDA multiple).
Previous Years	
Tirana Airport (Albania)	Due diligence for China Everbright and Friedmann Pacific joint venture, Keen Dynamics Limited acquisition from AviAlliance (undisclosed, 2016).
London City Airport (UK)	Vendor due diligence for equity disposal by GIP and Oaktree Capital (ca. £2.0bn, 2016).
Toronto City Centre Terminal (Canada)	Commercial support for the disposal of City Centre Terminal Corp. Porter completed the sale of its passenger terminal concession to Nieuport Aviation Infrastructure Partners in January 2015.
Glasgow, Aberdeen and Southampton airports (UK)	Due diligence for Ferrovial Aeropuertos and Macquarie European Infrastructure Fund acquisition of 100% equity (£1.05bn, 2014).

160. As with successful debt funding, our experience from UK and global airport equity transactions that have reached financial close is that equity providers require very detailed business plan information before they will consider an investment. As with debt providers, equity providers will expect detailed business plan stress testing to ensure equity returns are reasonable across a range of potential business outcomes. RSP has not presented any detailed business plan information for the proposed business which would allow the assumptions to be tested in the context of the UK regional airport sector financial performance.

5.3. Airport Sector Key Features

161. The global airport sector has a broadly consistent set of key features that flow to operational and financial performance.

162. The level and type of demand is the key feature that drives all aspects of operational and financial performance. Credible short, medium, and long-term traffic forecasts are essential to inform business and capital development plans.

- Debt providers expect to be presented with a detailed business plan that includes traffic, business plan, and capital investment forecasts for at least 10 years. The required forecast period can be significantly longer and is normally aligned with the term of debt requested with some allowance for potential extension of the debt repayment period.
- Equity providers would typically expect business plan forecasts for up to 30 years to reflect the longer-term return period.
- In their application documents, RSP advised that they need to raise all the funds required for capital investment (i.e. they do not currently appear to have shareholder funding available for this requirement). Our experience from equity investors is that they would require as much information as debt providers to critically examine the business case to ensure they have a clear idea of how they could make an acceptable risk-adjusted return across a range of potential outcomes.

163. Based on our experience of many airport debt and equity processes, the table below highlights the key airport characteristics, and supporting analysis and detailed outputs that debt and/or equity providers would expect to be provided for each key area of the particular airport business.

164. RSP has not presented any detailed business plan information that would support either debt and/or equity raising processes.

165. A further material issue for the RSP proposal is the much higher threshold of information required to satisfy debt or equity providers for a start-up business with no track record of performance or profitability. This is particularly the case where the project sponsor has no demonstrable track record of developing or operating a commercially successful airport business. This lack of experience and credibility is likely to be a major issue for potential debt and/or equity providers.

Key Characteristic	Main Features	Comment	Material Typically Provided to Debt Provider
Demand	Catchment and consumer choice (airlines, destinations, cargo operators, etc.)	• Long run demand linked to GDP, disposable income, affordability, airline economics, etc. • Structural features e.g. hub, inbound tourism, cargo demand, etc.	• Detailed traffic forecast to include passenger segmentation (domestic, short haul, long haul, low cost carrier, etc.), cargo demand (bellyhold, freighter, expeditor), and other (business jet, general aviation, etc.). • Traffic report which covers all aspects of traffic demand including air transport movements (ATMs), aircraft stand demand, runway and terminal busy hour rates, etc.
Competition	Competing airports' features, capacity, etc.	• Detailed assessment of airport competition, and why users choose a particular airport. • Modal substitution options.	• Debt providers would expect the traffic report to include detail of the airport's competition, including discussion on competing airport characteristics.
Revenue	Diverse revenue streams	• Detailed outline of all airline, passenger, and non-aviation related revenues. • Clear rationale for forecast assumptions (airline contracts, concession contracts, property leases, etc.). • Detailed performance benchmarking analysis.	• Business plan to include a detailed build up of all revenue categories over the forecast horizon. • Business plan report should include detailed analysis of historic performance vs. forecast performance, and outcomes vs. sample benchmark airports.
Operating Costs	Operating leverage	• Lower unit costs as volumes increase driven by high fixed costs. • Detailed analysis of fixed and variable costs including staff costs by functional department, and non-staff costs by main outsourced categories.	• Operating cost forecast to include analysis vs. historic performance and regional airport recent trends. • Operating cost forecast to be driven by the appropriate drivers and assumptions clearly explained to debt providers.
Profitability	Profitability driven by airport size and passenger profile	• Operating expenditure consumes a high share of revenue at lower throughput airports. • Operational leverage is difficult to achieve at lower throughput airports.	• Detailed financial model to include debt provisions and below EBITDA operating costs (depreciation, dividends, etc.). • Downside demand / cost scenarios to demonstrate resilience of the business case – what happens if forecast are not achieved? • Detailed financial model to demonstrate debt covenants can be met under a range of scenarios throughout the forecast period.
Investment	Infrastructure leverage / investment flexibility	• High investment cost for lower throughput airports. • More efficient use of infrastructure as throughput increases. • Flexibility on incremental capacity investment.	• Detailed process capacity assessment. • Investment plan to achieve approvals to commence operations. • Investment in capacity and asset renewals over the forecast period.

Figure 5 - Airport Market Key Characteristics (source: Altitude)

5.4. Airport Business Model Components

166. An airport's business model typically comprises the demand, revenue, cost and investment categories illustrated below. The structure and components tend to be broadly consistent across all airports with the main performance variables being driven by volume and traffic segmentation.

Traffic	Passengers	Cargo	Business / General Aviation / Other
Airline Customers	Full Service	Bellyhold	Corporate
	Low Cost	Cargo Operators	Medical
	Charter	Integrators	Govt., etc.
Customer Segmentation	Business	Airborne	
	Leisure	Trucked	
	Charter		
Revenue	Aeronautical		
	Non-aeronautical		
Operating Cost	Staff		
	Non-staff		
EBITDA	Per pax / Margin %		
Capex	Aero Growth	Aero Repex	
	Non-aero Growth	Non-aero Repex	

Figure 6 – Summary Airport Business Model (source: Altitude)

167. Airport financial performance improvement is driven by each of the categories included in Figure 6, to varying degrees.

168. The primary driver for any airport is the traffic forecast (passengers, freight, etc.), as this is the main source of revenue, operating costs, and capital investment.

169. The airport sector benefits from diverse revenue streams which can be allocated into the two high-level categories of:

- Aeronautical revenue (revenue relating to the movement of passenger and / or freight, including aircraft landing and parking fees, passenger terminal use fees, security charges, etc.).
- Non-aeronautical revenue (retail, car parking, advertising, property rentals, etc.).

170. Aeronautical revenue would be expected to increase as traffic throughput increases. UK regional airports such as Manston Airport would not be subject to formal economic regulation and are free to set aeronautical charges without reference to an aeronautical regulator as long as the charges are (i) transparent, and (ii) non-discriminatory between airline users.

- Targeted incentives are used to support traffic growth with the airport providing financial incentives for carriers to become established and to add capacity.

- However, low cost carriers tend to require a high level of financial incentives through low (or no) aeronautical charges and / or marketing financial support for carriers to launch services and add capacity.
- We would also expect cargo operators to also be heavily incentivised to commence and develop services at a reopened Manston Airport.
- The requirement to incentivise passenger and cargo airlines would be expected to lead to low aeronautical revenue, particularly in the early years. This is likely to be a material issue for external debt and / or equity providers who would expect to see clear evidence of the airport's ability to meet financing costs.

171. We note that Azimuth Volume 4 paragraph 2.2.10 claims its forecast take into account the costs of integrators and freight forwarders switching airports:

> *"Additionally, the costs of switching airports have been taken into account when considering the likelihood of integrators and freight forwarders moving to Manston Airport. These include (CAA, 2013, p. 26):*
>
> *The cost of physical relocation.*
>
> *Cancellation of long-term contracts.*
>
> *Loss of economies of scale, although if an entire operation is switched, economies of scale would be gained at the new airport.*
>
> *Market effects such as marketing new routes and a potential loss of custom in the early years following the switch.*
>
> *Network effects lost by switching to a smaller airport.*
>
> *Capacity constraints at other airports, particularly in slot allocations.*
>
> *Sunk costs such as an airline's investment in the airport from which they are switching."*

172. We would have expected RSP to provide detailed financial forecast information to support the Azimuth assertions which could then be tested in the context of actual performance of the UK smaller throughput airport sector.

173. However, RSP has not presented any detailed financial or business plan information that would allow any debt and/or equity providers to make an informed funding decision

174. Non-aeronautical revenue is largely driven by traffic throughput.

- Passenger throughput drives terminal retail, food and beverage, and currency exchange revenues. It also drives car parking and car rental revenues.
- A number of non-aeronautical revenue categories are not directly driven by passenger throughput including property rentals, advertising, etc).
- Property revenue at a reopened Manston Airport is likely to be driven by cargo throughput generating demand for cargo processing facilities rather than passenger throughput. Passenger airlines, particularly low-cost carriers seek to minimise direct costs at an airport and avoid renting property space wherever possible.
- Other property demand can come from non-aviation related businesses which does not need to be located at an airport.

175. Operating costs tend to be driven by underlying fixed costs and subsequent passenger and terminal space growth rather than cargo throughput.

- Airports have a high level of fixed cost, irrespective of the level of throughput, to meet regulatory requirements e.g. perimeter and passenger related security, airfield operations, air traffic control, fire and rescue, along with core head office management and commercial functions.
- The impact of these high fixed costs has a disproportionate impact on the profitability of lower throughput airports with lower revenue generating capability.
- Once revenue has exceeded fixed operating costs, passenger growth typically increases at a faster rate than incremental operating costs resulting in declining unit cost (operating cost per passenger or tonne of freight). This is a major challenge for smaller throughput airports to increase revenue to materially exceed the structural fixed costs of the airport sector to then be in a position of sustained profitability.

176. Analysis in the next section will illustrate the challenging financial performance of lower throughput UK regional airports (passengers and / or cargo throughput below 3 million work load units[79] (WLUs) per annum) which tends to be driven by the high fixed costs.

- Note that the RSP's forecasts equate to demand of 3.1m WLUs in Year 10.

177. EBITDA as a measure of cash generated from the operating business to fund debt and capital investment, and EBITDA margin are driven by the revenue and operating cost performance of the airport. Small UK regional airports are typically operating with negative EBITDA and / or low EBITDA and EBITDA margins. This means they cannot generate sufficient cash to service debt service debt or capital investment.

178. Capital expenditure is driven by (i) meeting the regulatory and licencing requirements to operate, (ii) traffic throughput, and (iii) asset condition which impacts replacement capital investment levels. Whilst airports can defer some element of asset replacement, it is a major component of the operating licence to demonstrate the airport can fund the required capital investment to meet the statutory requirements.

5.5. UK Airport Benchmarking Group

179. This section focuses on the financial performance of a set of lower throughput UK regional airports (annual throughput below 3 million WLUs) that provide a good comparison with the Year 10 forecast for a reopened Manston Airport. The selected airports are set out below.

Airport	Airport Code	Financial Year	Pax	WLU
Belfast City	BHD	31-Dec-17	2.6m	2.6m
Southampton	SOU	31-Dec-17	2.1m	2.1m
Cardiff	CWL	31-Mar-18	1.5m	1.5m
Doncaster Sheffield	DSA*	31-Mar-17	1.2m	1.3m
Southend	SEN	28-Feb-18	1.1m	1.1m
Exeter	EXE	31-Mar-18	0.9m	0.9m
Prestwick	PIK	31-Mar-18	0.7m	0.8m
Bournemouth	BOH*	31-Mar-17	0.7m	0.7m
Norwich	NWI	31-Mar-18	0.5m	0.5m
Newquay	NQY	31-Mar-18	0.5m	0.5m
Humberside	HUY	31-Mar-18	0.2m	0.2m
Durham Tees Valley	MME*	31-Mar-17	0.1m	0.1m

Table 2 – UK Benchmark Airports 2017 Data (source: company reports)

180. The airports included in the benchmark analysis have an annual throughput of up to 3 million passengers and 3 million WLUs. Note that the most recently available financial data has been used (note that airports with an * refers to financial data for the year ending March 2017).

[79] A work load unit (WLU) is defined as one passenger or 100 kg of cargo.

181. The sample set provides a good range of smaller throughput airport businesses to reflect the proposed rate of development for a reopened Manston over the initial ten-year period.

182. The detailed analysis highlights just how challenging the market is for these airports and the low of negative levels of profitability consistently achieved.

183. We also highlight below that three of the benchmark airports have had to be taken over by the public sector in recent years when experienced private sector airport operators could not develop the airports to achieve sustainable financial performance.

5.6. Airports Rescued by the Public Sector

184. The financial viability challenges for lower throughput UK airports have been highlighted in recent years with three airports taken over by the public sector, where experienced private sector operators could not operate these airports on a viable commercial basis:

- **Glasgow Prestwick Airport**: purchased by Scottish Government for a reported £1 in 2013. Since taking ownership, the Scottish Government has provided loans of ca. £38m. The business reported a post-tax loss of £7.6m in the year to 31st March 2018. We also note that Infratil was a previous owner of Manston Airport and, despite having airport experience from its 66% ownership of Wellington Airport in New Zealand (with 6.3m passengers in 2018), was unable to develop either Prestwick or Manston into sustainable businesses.
- **Cardiff Airport**: purchased by the Welsh Government for a reported £52m in 2013. Since taking ownership, the Welsh Government has provided loans of ca. £14m. The business reported a post-tax loss of £5.6m in the year to 31st March 2018. The previous owner, Abertis, was an experienced operator of Belfast International and Luton airports in the UK and a number of international airports. Despite this, passenger numbers declined from ca. 2m in 2007 to just over 1.0m in 2012.
- **Durham Tees Valley Airport**: purchase announced in January 2019 by Tees Valley Combined Authority for a reported £40m. The business reported a post-tax loss of £2.4m in the year to 31st March 2017. Current owner, Peel Group, is an experienced operator of Liverpool and Doncaster Sheffield airports.

5.7. P&L Performance

185. Lower throughput UK regional airports can achieve high revenue yield (total revenue / Work Load Unit) as non-passenger related revenue can be a high share when the traffic throughput is low.

- This is evident in the chart below which illustrates that the two smallest airports in the study (Durham Tees Valley and Humberside) achieve the highest total revenue yield / WLU. However, both airports have KLM service to Amsterdam as virtually the only commercial airline customer paying historically high charges – a situation that is highly unlikely to be replicated at Manston.
- However, it would be expected that this yield reduces as the airport grows and the relatively fixed revenues (e.g. property rentals) are diluted as passenger and cargo throughput increases. The larger airports in our study are mostly on the right side of the chart with lower revenue yields.
- A start-up at Manston would be expected to achieve low yields due to the need to highly incentivise both passenger and cargo operators to set up and commence operations at the airport.

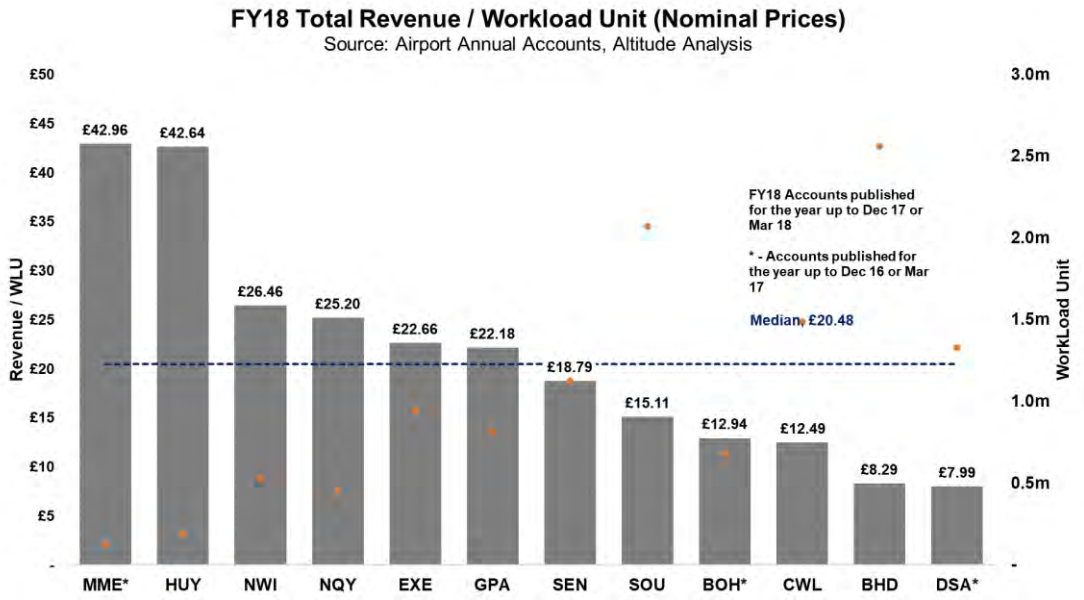

Figure 7 - Total Revenue Yield / WLU

186. As previously outlined, airports have high fixed costs. This results in higher unit cost (total operating expenditure / WLU) at smaller airports. The operational efficiency of the airport improves as the airport grows and fixed costs are spread over a higher level of throughput. This operational leverage is an important feature of the airport sector's financial performance.

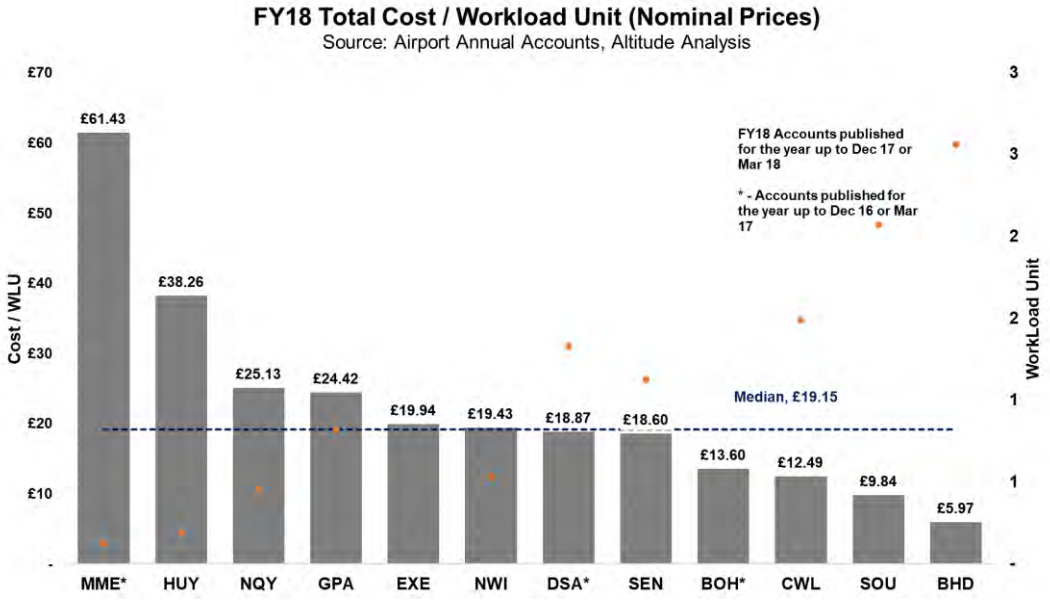

Figure 8 - Total Unit Cost

187. We would expect a start-up Manston to have high unit costs for a number of years. However, we have not seen detailed financial information from RSP to test the reasonableness of their assumptions.

188. As outlined, EBITDA is a measure of the airport's ability to generate cash to finance the business, including servicing debt and funding capital investment.

189. The EBITDA / WLU chart clearly illustrates the requirement for airports to achieve critical mass of throughput before being able to generate positive EBITDA.

190. This can be challenging with seven of the twelve airports in the study having negligible or negative EBITDA performance which means no cash to service debt or fund capital investment.

191. This highlights the difficulties for any potential future operator of Manston Airport to generate sufficient throughput and revenue to offset the high fixed costs of a UK regional airport.

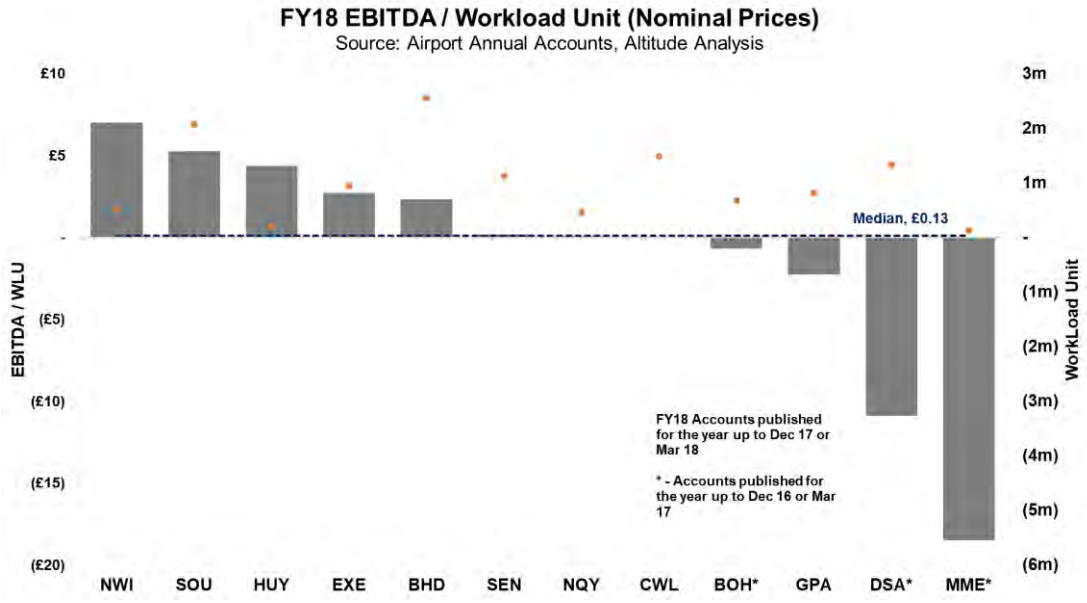

Figure 9 - EBITDA / Pax

192. Larger regional airports such as Southampton and Belfast City have a positive EBITDA / WLU, whilst smaller airports such as Durham Tees Valley, Doncaster Sheffield, Prestwick and Bournemouth generate negative EBITDA / WLU.

- Southampton and Belfast City airports both serve city catchments and do not have material levels of low cost carrier traffic. They consequently enjoy higher profitability than the other airports. Manston would not be able to replicate a similar business model as the local market characteristics do not exist to support to support such a model.
- By contrast, airports with higher levels of throughput such as Cardiff and Doncaster Sheffield generate negligible or negative EBITDA which we assume is a consequence of having to highly incentivise passenger and/or cargo airlines to use the airport. We would expect this to be the case at a reopened Manston which implies no or limited cash to service debt and capital investment.

193. Based on our experience and the financial performance at UK regional airports, we would expect high levels of incentivisation of future commercial operations to be a feature of the financial performance of a reopened Manston Airport, particularly in the early years.

- This will have a material negative impact of the ability of the business to raise external debt or equity on a standalone basis without having a parent company guarantee (from an entity of sufficient financial standing) or other assurances in place.
- This would clearly have a material impact on the viability of RSP's proposals. However, we are unable to assess this due to lack of detailed business plan information to support the application.

194. Analysis of net profit after tax illustrates the ability of the business to reward equity shareholders, generate cash reserves, and to finance capital investment.

- It also gives debt providers an indication of the resilience of the business to withstand any downturns in demand e.g. economic shocks, airline withdrawal / scale reduction / failure.
- For the RSP proposal, the requirement to generate positive cashflow is amplified by the requirement to fund and repay the significant initial investment to reopen the airport, as well as future incremental capital investments.

- The evidence from our analysis of the benchmark sample airports is that the ability to generate positive post-tax cash flows is very challenging for existing businesses and is likely to be even more challenging for the start-up business proposed by RSP.

195. The figure illustrates that UK regional airports with low levels of throughput struggle to generate positive net profit after tax.

- Only 3 airports produced a positive result, indicating the difficulty to maintain a viable business at low levels of throughput.
- The chart also illustrates the challenges faced by smaller airports to withstand declines in demand, which will be a major concern for both debt and equity providers.

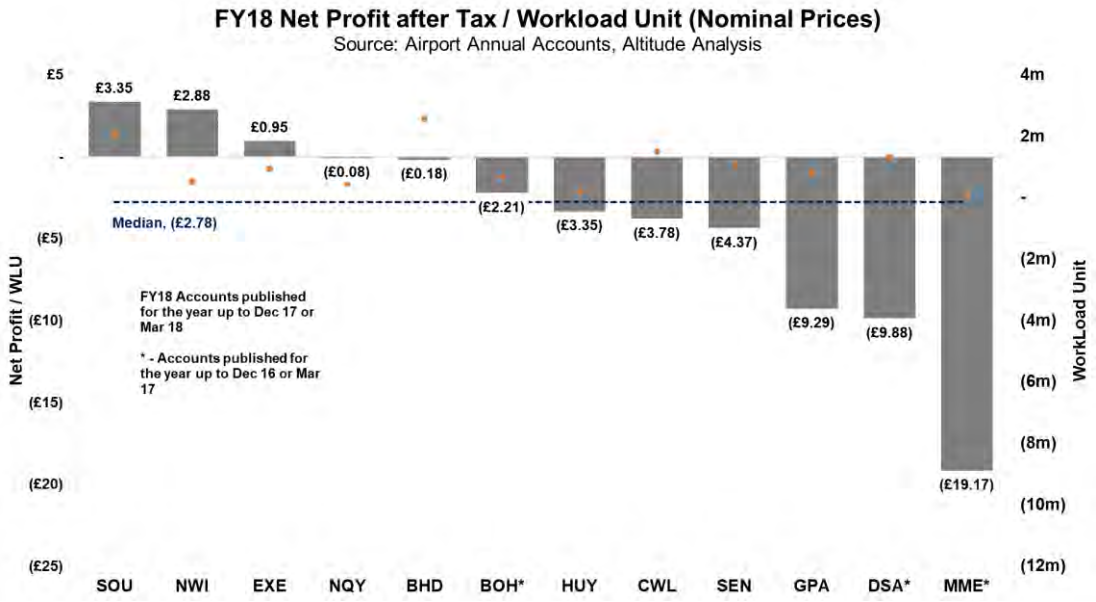

Figure 10 - Net Profit / Pax

196. To summarise the selected UK regional airport performance, we have combined revenue, EBITDA and net profit after tax into a single chart to illustrate the challenges faced by lower throughput airports.

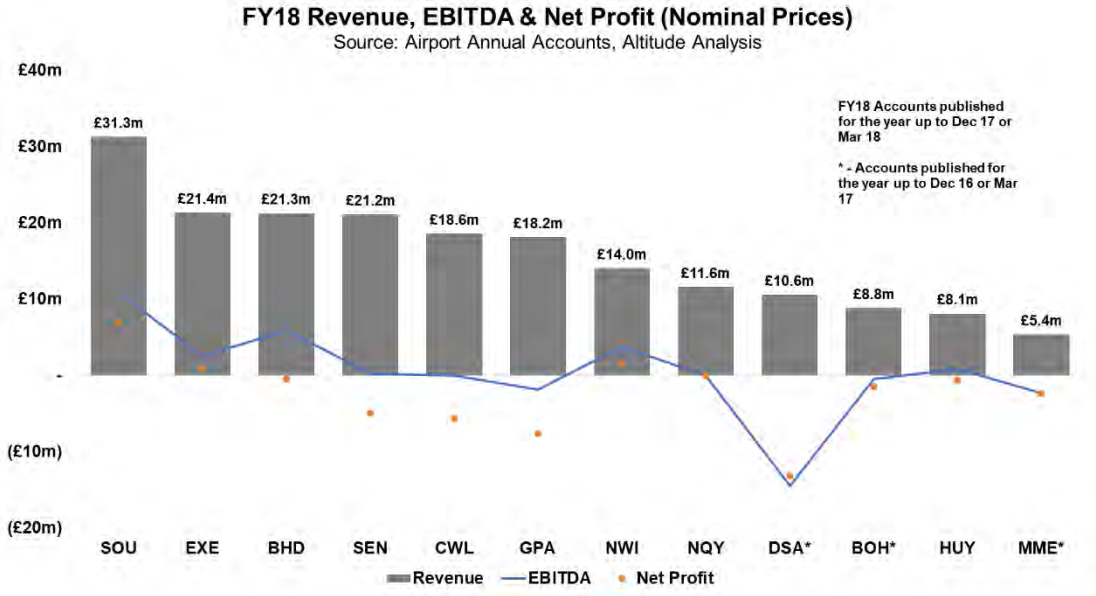

Figure 11 - Revenue, EBITDA & Net Profit

197. A summary of the benchmarking airports' financial performance is outlined in the table below.

Airport	Airport Code	Pax	WLU	Revenue	Opex	EBITDA	Net Profit after Tax
Belfast City	**BHD**	2.6m	2.6m	£21.3m	£15.3m	£6.0m	(£0.5m)
Southampton	**SOU**	2.1m	2.1m	£31.3m	£20.4m	£10.9m	£6.9m
Cardiff	**CWL**	1.5m	1.5m	£18.6m	£18.6m	£0.0m	(£5.6m)
Doncaster Sheffield	**DSA***	1.2m	1.3m	£10.6m	£25.1m	(£14.5m)	(£13.1m)
Southend	**SEN**	1.1m	1.1m	£21.2m	£20.9m	£0.2m	(£4.9m)
Exeter	**EXE**	0.9m	0.9m	£21.4m	£18.8m	£2.6m	£0.9m
Prestwick	**PIK**	0.7m	0.8m	£15.9m	£21.0m	(£5.2m)	(£6.2m)
Bournemouth	**BOH***	0.7m	0.7m	£8.8m	£9.3m	(£0.5m)	(£1.6m)
Norwich	**NWI**	0.5m	0.5m	£14.0m	£10.3m	£3.7m	£1.5m
Newquay	**NQY**	0.5m	0.5m	£11.6m	£11.6m	(£0.0m)	(£0.0m)
Humberside	**HUY**	0.2m	0.2m	£8.1m	£7.8m	£0.3m	(£0.6m)
Durham Tees Valley	**MME***	0.1m	0.1m	£5.4m	£7.7m	(£2.3m)	(£2.4m)

*Table 2 – UK Benchmark Airport 2017 Financial Data (source: company reports, * refers to financial data for the year ending March 2017)*

198. As expected, the larger airports produce more revenue which in turn leads to positive EBITDA. However, only three airports generate positive net profit after tax.

199. This is driven by the highly fixed operating costs at smaller airports outweighing their ability to generate revenue, which leads to negative EBITDA and negative net profit after tax.

200. Based on the detailed analysis of the lower throughput UK airport sector presented above and with the absence of detailed financial forecasts from RSP, we are of the opinion that the business would face severe challenges to become commercially viable even if RSP delivered on its highly optimistic forecasts. This is further highlighted by the historic loss-making performance of the airport when it previously operated by experienced owners.

5.8. Debt Level Analysis

201. This section provides analysis of the level of debt financing of the benchmark airports. This provides some insights on the level of debt at the airports and the ability of the airports to service the debt.

202. The table below provides a summary of the latest available operational characteristics and debt levels.

Airport	Airport Code	Financial Year	Pax	WLU	Revenue	Opex	EBITDA	Debt	Net Profit after Tax	Debt / EBITDA	Debt / Revenue
Belfast City	**BHD**	**31-Dec-17**	2.6m	2.6m	£21.3m	£15.3m	£6.0m	£26.6m	(£0.5m)	4.5x	1.3x
Southampton	**SOU**	**31-Dec-17**	2.1m	2.1m	£31.3m	£20.4m	£10.9m	£25.0m	£6.9m	2.3x	0.8x
Cardiff	**CWL**	**31-Mar-18**	1.5m	1.5m	£18.6m	£18.6m	£0.0m	£37.2m	(£5.6m)	6,207.0x	2.0x
Doncaster Sheffield	**DSA***	**31-Mar-17**	1.2m	1.3m	£10.6m	£25.1m	(£14.5m)	£39.9m	(£13.1m)	(2.8x)	3.8x
Southend	**SEN**	**28-Feb-18**	1.1m	1.1m	£21.2m	£20.9m	£0.2m	£159.8m	(£4.9m)	742.3x	7.6x
Exeter	**EXE**	**31-Mar-18**	0.9m	0.9m	£21.4m	£18.8m	£2.6m	£8.9m	£0.9m	3.5x	0.4x
Prestwick	**PIK**	**31-Mar-18**	0.7m	0.8m	£18.2m	£20.0m	(£1.8m)	£43.4m	(£7.6m)	(23.7x)	2.4x
Bournemouth	**BOH***	**31-Mar-17**	0.7m	0.7m	£8.8m	£9.3m	(£0.5m)	£53.8m	(£1.5m)	(118.7x)	6.1x
Norwich	**NWI**	**31-Mar-18**	0.5m	0.5m	£14.0m	£10.3m	£3.7m	£12.4m	£1.5m	3.3x	0.9x
Newquay	**NQY**	**31-Mar-18**	0.5m	0.5m	£11.6m	£11.5m	£0.0m	£2.5m	(£0.0m)	82.9x	0.2x
Humberside	**HUY**	**31-Mar-18**	0.2m	0.2m	£8.1m	£7.3m	£0.8m	£4.3m	(£0.6m)	5.1x	0.5x
Durham Tees Valley	**MME***	**31-Mar-17**	0.1m	0.1m	£5.4m	£7.7m	(£2.3m)	£19.0m	(£2.4m)	(8.2x)	3.5x

Table 3 – Operational and Debt Summary (source: company reports)

203. The figure below illustrates the level of debt for each of the benchmark airports.

204. It should be noted that the debt levels quoted in the table are not commercial debt facilities that would typically be provided to airports. Each has its own special circumstance, for example:

- Cardiff and Prestwick debt is provided by their respective Welsh and Scottish government owners.
- Southend debt is provided by shareholder loans. Note that Southend Airport has a very large level of shareholder provided debt due to major redevelopment of the airport in the last few years, including a new passenger terminal. This funding is highly unlikely to be available in the commercial debt market.
- Doncaster Sheffield and Durham Tees Valley (until the sale to the public sector is completed later in 2019) debt is funded by shareholder loans from the Peel Group.
- Exeter, Bournemouth and Norwich are funded by the Rigby Group shareholder.
- Durham Tees Valley and Doncaster are related to Peel Group (with minority local authority shareholding).

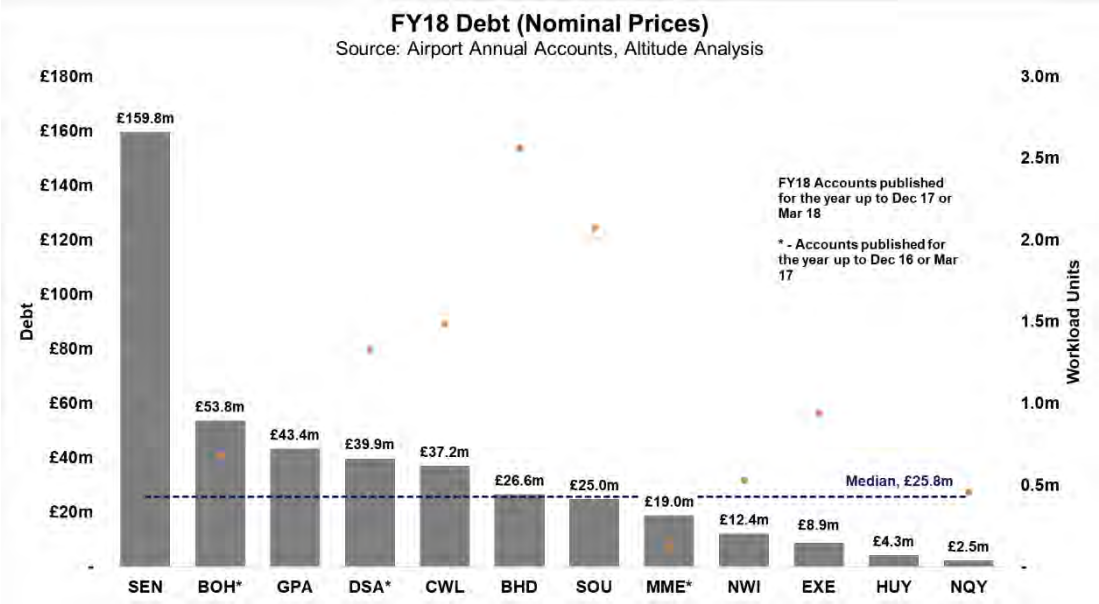

Figure 12 – Debt Levels

205. Larger throughput airports tend to have more debt due to higher capital expenditure requirements, e.g. capacity expansion and maintenance of runways and terminals, compared to the smaller throughput airport.

206. The debt / revenue ratio evaluates the airport's ability to generate revenue relative to its level of debt and throughput. The figure below illustrates this ratio for the benchmark airports.

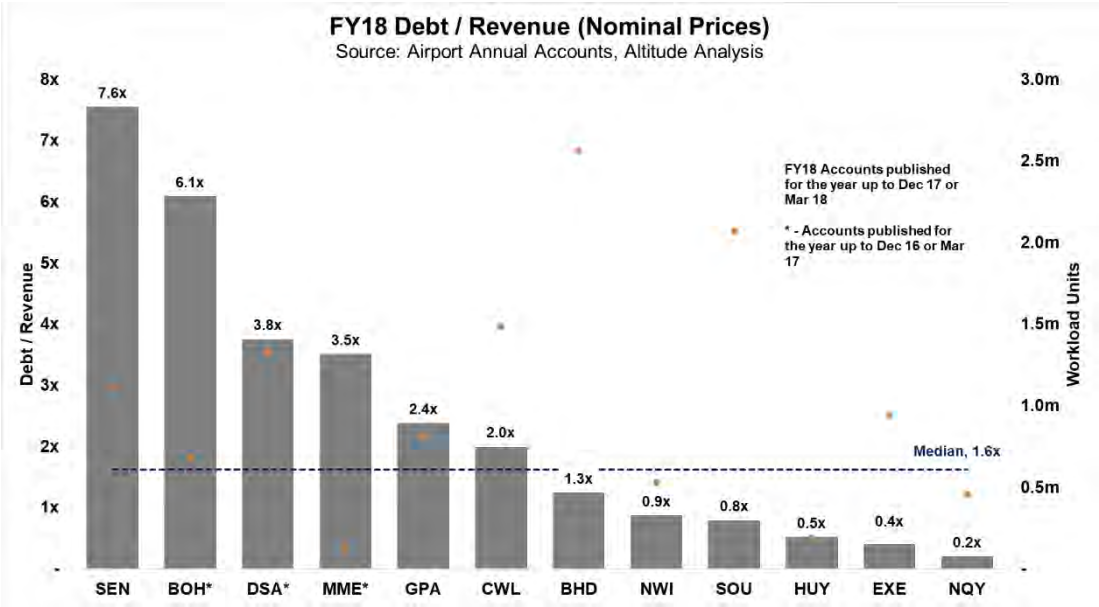

Figure 8 - Debt / Revenue Ratio

207. As outlined, Southend has significantly upgraded its infrastructure in recent years to accommodate passenger growth including a new terminal, primarily funded by debt (provided by way of shareholder loans). This has led to the airport having the highest debt / revenue ratio in the sample.

208. Excluding Southend, the larger throughput airports tend to have debt / revenue ratios below the median level (1.6x) whilst smaller airports tend to be well above the median.

209. Whilst the level of debt / revenue is interesting, analysis of the debt / EBITDA ratio provides a view of the ability of the business to generate sufficient operating cashflow to service the debt. Note that not all airports appear on the chart due to the scale of ratios. A full summary of these ratios is included in Table 3 above.

210. Debt / EBITDA ratio illustrates the ability of an airport to service its debt. The figure illustrates that small airports range between very high (e.g. Southend, Cardiff) and negative debt / EBITDA ratios which is driven by the challenging EBITDA performance environment set out in the financial performance section.

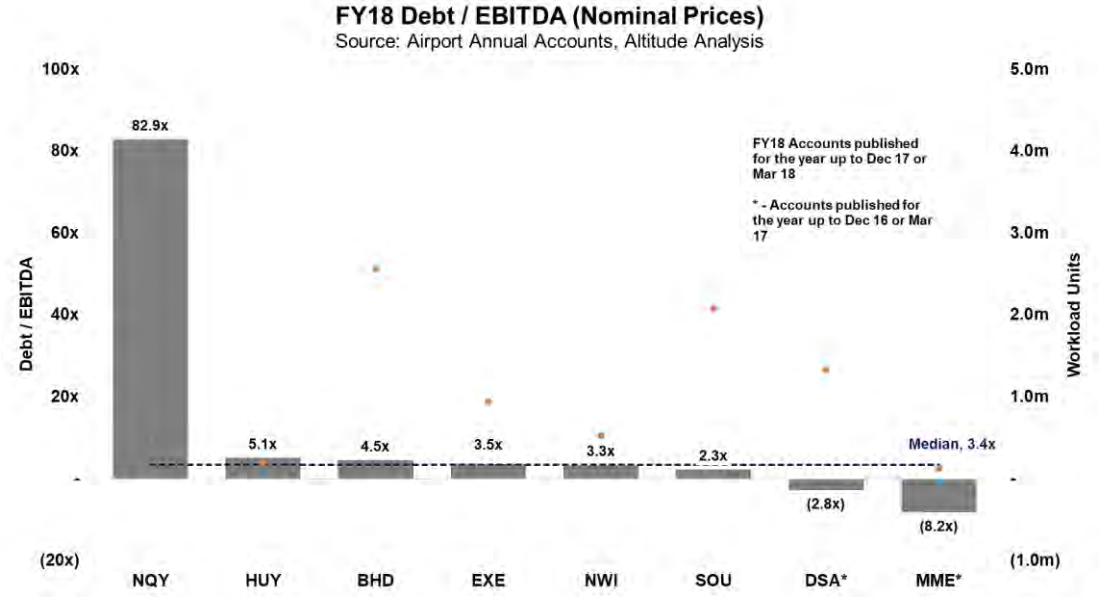

Figure 9 - Debt / EBITDA Ratio

211. Debt providers in the UK airport sector have tended to provide lending levels fluctuating around the range of 4x to 8x debt / EBITDA levels, depending on the external financing environment and particular characteristics of the airport.

- This range reflects larger throughput airports than the benchmark airports and have a lower perceived risk profile for debt providers due to the higher throughput levels and longer history of profitable performance.
- As part of their evaluation of the particular risks associated with an airport, lenders will assess the counterparty risk which we would expect to result in a material difference between experienced operators such as the Peel Group and RSP with no track record in the sector. The higher risk profile would be expected to result in no or less debt being provided and at higher cost than for experienced operators.

212. The chart illustrates that a number of the airports are in the 2x to 5x debt / EBITDA range, with the two largest throughput airports (Southampton and Belfast City) having relatively conservative debt / EBITDA ratio of 2.3x and 4.5x respectively.

- Our experience supports the view that the low levels of debt for those airports with positive EBITDA reflects the inherent risks for debt providers and places a ceiling on the level of commercial debt available for lower throughput airports.
- We would expect the perceived risks for debt providers to be higher for a reopened Manston Airport without strong support from a parent company or underpinned with firm revenue and volume commitments from passenger and cargo airlines reflected in executed contracts. Our experience is that it would be highly unusual for airlines to enter into such binding contractual commitments a number of years before an airport becomes operational.

213. For the other benchmark airports, the very high or negative debt / EBITDA ratios would make it extremely difficult to attract commercial debt providers and / or at reasonable interest rates.

- As outlined, many of the benchmark airports have debt provided through shareholder loans as commercial debt would not be available for these marginal and / or loss-making airports.

5.9. Summary

214. As outlined in the introduction, RSP has provided very limited financial forecasts or financing details relating to the application for the redevelopment and reopening of Manston Airport.

215. The lack of detailed and substantiated financial forecasts, and nothing of substance in relation to how the proposed investment could be commercially financed raises significant questions around the financial viability and fundability of the proposal.

216. The RSP forecasts equate to demand of 3.1m WLUs in Year 10. The performance benchmarking illustrates the difficulty that smaller throughput airports up to ca. 3m WLUs per annum have to generate sufficient revenue and profitability to be commercially viable.

217. There has also been a trend for smaller throughput UK regional airports being rescued by the public sector after experienced private sectors could not operate these airports on a viable commercial basis. RSP is not an experienced airport operator and does not have a track record of successfully developing or operating a commercially viable airport.

218. This context is important for the proposed reopening of Manston Airport as the analysis illustrates:

- A significant level of throughput is required to generate sufficient revenue to result in positive EBITDA[80] to service debt and / or capital investment – London Southend and Cardiff with 1.1m and 1.5m WLUs respectively achieved marginally positive EBITDA but posted large post-tax losses.
- Commercial lenders and equity providers will expect a track record of EBITDA generation to support funding of the business. A reopened Manston Airport would be a start-up business with a material capital investment requirement and no history of profitability.
- Our experience is that commercial debt and equity providers would be unlikely to provide funding to a reopened Manston Airport on a standalone basis without (i) parent company guarantees (from an entity of sufficient financial standing), and (ii) strong evidence of clear contractual volume and revenue commitments from airline users.
- The benchmarking indicates that a significant proportion (or all) of the funding would need to be provided by way of shareholder loans, as the required levels would not be available from debt providers.
- Based on the analysis of lower throughput UK regional airports and our experience of the UK airport debt market, we would expect a reopened Manston Airport to struggle to secure material levels of debt in the commercial lending market. As equity funders would also require detailed business plan information to inform their investment decisions, we would expect RSP to struggle to secure material equity investment given the loss-making history of the business over many years.
- RSP's application documents do not provide the most basic information that would allow any funder (debt or equity) to assess the financial viability of a reopened airport.
- Without a detailed business plan and supporting financial forecasts with detailed cost and revenue assumptions and supporting information that can be assessed and tested, there is little prospect of RSP raising any debt and / or investor finance from parties that would ordinarily fund UK airports.
- With RSP stating that construction will be underway in 2020, it is surprising that this information is not available and been shared with the Examination.
- The financial viability challenges for lower throughput UK airports have been highlighted in recent years with three airports being taken over by the public sector. Where new airports across Europe

[80] EBITDA is earnings before interest, tax, depreciation and amortisation

have been developed or airports reopened, it is highly unusual that the public sector has not made a material financial contribution to the viability of the proposals. The potential wider economic benefits to the region are usually cited to justify public sector investment (as was the case for the Cardiff and Prestwick airport investments by the public sector).

- No public sector investment is proposed by RSP which is likely to make funding of the proposal even more challenging on a commercial basis.
- Notwithstanding this, based on our experience and taking into account the very high-level information provided on capital investment, we are of the opinion that the airport is unlikely to be economically viable even if RSP could deliver on its highly optimistic forecasts.
- Our expertise of supporting many institutional investors in the UK and international airport sector confirms that they would have the same issues and challenges as a debt provider with the lack of financial information related to the deliverability and viability of the RSP proposals.
- A further material issue for the RSP proposal is the much higher threshold of information required to satisfy debt or equity providers for a start-up business with no track record of performance or profitability. This is particularly the case where the project sponsor has no demonstrable track record of developing or operating a commercially successful airport business. This lack of experience and credibility is likely to be a major issue for potential debt and/or equity providers.

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7. Annex – Altitude Report from January 2018

Analysis of the Freight Market Potential of a Reopened Manston Airport

Issued: January 2018

(Analysis completed in October 2017)

Scope of the Report and Limitation of Liability

- This report contains the results of our analysis in relation to potential air cargo demand at the former Manston Airport site (the "Work"). It has been prepared for Stone Hill Park Limited ("SHP") in connection with the proposed application for a Development Consent Order by RiverOak Strategic Partners Limited and for no other purpose. The proposed application is for the redevelopment and reopening of Manston Airport for international air freight along with passenger, executive travel and aircraft engineering services ("the Project"). The proposed application would also, we understand, seek to compulsorily acquire the whole of the former Manston Airport site from SHP.
- We do not accept a duty of care to any person other than SHP in respect of this report.

ALTITUDE AVIATION ADVISORY LIMITED

January 2018

Contents

1. Introduction

1.1. Objectives of the Study

1. This report has been commissioned by Stone Hill Park Limited ("SHP"), the owners of the former Manston Airport site. The site is currently subject to a proposed application for a Development Consent Order ("DCO") under the Planning Act 2008 currently promoted by RiverOak Strategic Partners Limited ("RSP"). The proposed application is for the redevelopment and reopening of Manston Airport for international air freight along with passenger, executive travel and aircraft engineering services ("the Project"). RSP contends that the Project is a Nationally Significant Infrastructure Project for airport development for air freight and hence, should fall within the Planning Act 2008. RSP's proposed application could also seek powers of compulsory acquisition over the site, allowing RSP to compel the purchase of the site from SHP's ownership to RSP's ownership. The report has been developed in this context.

2. To date, RSP has generated a range of submissions as part of the DCO pre-application process. These include reports commissioned from Azimuth Associates ("Azimuth")[1] and Northpoint Aviation Services ("Northpoint")[2].

3. The objective of this report is to provide a review of the Azimuth and Northpoint reports. We also review other relevant documents, including two AviaSolutions reports[3] commissioned by Thanet District Council.

4. The Azimuth and Northpoint submissions are notable for making major assertions as fact without providing relevant supporting evidence. While we have drawn on our own extensive experience in the UK and international airport sector, we have utilised published material to support our analysis. As such, we have made efforts to limit the extent to which we rely on our own opinions, assumptions and/or calculations.

5. The focus of our analysis is the air cargo sector. We provide an evidence based assessment of key issues impacting the future development of air cargo in the UK. This comprises of:

    - Review of key historic and likely future trends in the air cargo sector.
    - Assessment of the ability of existing airports to meet future freighter and bellyhold cargo demand in the UK.
    - Appraisal of the ability of the Manston Airport site (if re-opened) to support the future development of the UK air cargo sector. Specifically, we investigate whether the site has the potential to meet the objectives specified by RSP in its proposed DCO application.

6. In this report, we do not, at this stage, undertake an in-depth review of air passenger related issues.

[1] (Azimuth Associates, 2017 a), (Azimuth Associates, 2017 b), (Azimuth Associates, 2017 c)
[2] (Northpoint Aviation Services)
[3] (AviaSolutions, 2016), (AviaSolutions, 2017)

1.2. Structure of the Report

7. Later in this section (Section 1.3), we provide an overview of the air cargo sector for the general reader. This includes an explanation of some key terms used in our report and an overview of important market dynamics. In the appendices (sections 10 and 11), a fuller description is provided.

8. A brief overview of Altitude Aviation Advisory is presented in Section 1.4.

9. The next section of the report (Section 2) is the Executive Summary.

10. In Section 3, we review the introductory section of the Azimuth suite of reports. In particular, we review the stated aims of the Azimuth reports, and comment on whether the questions put forward by Azimuth are appropriate and sufficiently targeted to adequately support the proposed DCO application.

11. In sections 4 to 7, we present our own analysis of the UK and global cargo market, including historic trends and outlook. This is then referenced later in the report when we critique the Azimuth freight forecasts.

    - Section 4 – We provide an analysis of how the UK cargo sector has developed, and focus on individual airports that are relevant in the consideration of the future potential for Manston. We also provide a summary of Manston's historic performance.
    - Section 5 – We investigate if there is an overall shortage of airport freight capacity in the UK, or if shortages are restricted to Heathrow only.
    - Section 6 – We provide a review of published capacity expansion plans from existing airports. This allows us to build up a picture of freight capacity at UK airports in the period to 2050.
    - Section 7 – Our forecast for UK freight demand is presented in this section. Our forecasts are compared with other published projections. We also assess whether there is likely to be any overall imbalances between demand and supply in the period to 2050.

12. In Section 8, we provide a comprehensive review of the Azimuth freight forecasts for Manston. This includes a critique of the methodology as well as the forecast projections themselves.

13. In the appendices, background material on the air freight segment and recent trends is included. There is also a case study of two major European freighter airports and further supporting analysis for some of the material in the main body of the report. We also review other related reports by Northpoint (on behalf of RSP) and AviaSolutions (on behalf of Thanet District Council).

14. Finally, a list of figures and a list of references are included at the end of the document.

1.3. Introduction to the Air Cargo Sector

15. Generally, products that make use of air transportation are high value and/or time critical, and can be easily packaged.

16. Whilst there are many different types of *air cargo*, at a high level, most can be categorised as either *freight*[4] or *mail*. Most freight can then be defined as either *general* or *express*.

    - Mail is typically letters and parcels, delivered to final destination by the postal service of a given country.
    - Express freight is typically "next-day" shipments that are collected from the shipper by close of business and are required by the consignee by close of business the following day.
    - General freight is everything else (this category is very broad, and also includes several types of low-volume specialist products such as hazardous, valuable and live animal cargo).

[4] In this report, we concentrate on the freight segment (which is more relevant in the context of Manston). Where it is not meaningful to distinguish between freight and mail, we provide analysis of the air cargo segment overall.

17. Air cargo can be carried either in a dedicated aircraft (a *freighter* or *cargo only aircraft*), or in the hold of commercial passenger aircraft (when it is known as *bellyhold cargo*).

18. A freighter aircraft will be able to carry more cargo than can be carried in the bellyhold of a similarly sized passenger aircraft. Furthermore, freighter aircraft are able to handle larger individual pieces of cargo than can be loaded in the bellyhold of passenger aircraft.

19. With this exception, there is typically no aircraft driven preference from the customer as to whether cargo is shipped in a freighter or in the bellyhold of a passenger aircraft. Other sources of preference include:

    - Freighters may be the only option if there are no passenger flights offering bellyhold capacity (the number of unserved destinations has shrunk as the number of passenger flights has grown).
    - From an origin with both bellyhold and freighter capacity, a larger number of frequencies and destinations may be available via bellyhold, due to the generally more extensive schedules of passenger airlines than cargo airlines.
    - Bellyhold capacity on passenger aircraft is often significantly cheaper to provide than freighter capacity, as many of the largest fixed costs are assigned to the passenger business (e.g. aircraft operation, landing fees, fuel needed to fly the aircraft[5]).

20. In recent years, bellyhold has been capturing an increasing share of the overall air cargo market. This is a global development, primarily due to faster growth in passenger demand than cargo demand. Therefore, bellyhold cargo capacity has been growing ahead of cargo demand, diminishing the need for dedicated freighter aircraft.

21. The air transport of air freight is typically carried out by one of three types of operator:

    - *Cargo only airlines* (using freighters), such as Cargolux.
    - *Passenger airlines* (using bellyhold space on passenger aircraft), such as British Airways. Some passenger airlines also operate a number of freight-only aircraft (a relatively small number compared to the number of passenger aircraft they operate).
    - *Integrators*, such as DHL, use a mix of their own freighter aircraft and purchased space on passenger aircraft. A large majority of the cargo handled by integrators is express freight. Integrators have a wider role than purely air transportation; they transport freight from door-to-door using a network of vans and trucks, as well as aircraft when necessary.

22. All carriers make extensive use of trucking in order to get freight to/from an airport. *Road feeder services* use trucks to bring freight to an airport from consolidation points across the catchment region.

23. Additionally, trucks will replace flights where it makes economic sense to do so.

    - For express freight, where next day delivery is required, this typically includes destinations within ca. 500km of the airport.
    - For general freight (i.e. without next day delivery requirement), trucks may be the more economic option for any intra-regional route. Replacement of flights with trucks has become more prevalent in Europe, to the extent that Airbus comments on it in their most recent forecast.

24. In this report, we refer to the concepts of *passenger hub* and *cargo hub* airports. These are terms that can be used somewhat loosely, and on occasion can simply be used to signify a large airport. For clarity, we define here precisely what we mean by these terms.

25. First, it is useful to present the Airports Commission[6] definition of a passenger hub:

[5] Incremental fuel needed for the uplift of cargo will typically be charged to the cargo business.
[6] (Airports Commission, 2015, p. 13)

> *"Airlines and alliances route their traffic through one or more key airports ('hubs'), with feeder traffic from other airports in the network (the 'spokes') supplementing local origin and destination traffic at the hub. For passengers, the hub-and-spoke model maximises the choice of direct destinations at the hub airport and offers potential to travel to a very wide variety of destinations on one ticket."*

26. Although the UK has several large airports, Heathrow is the only major passenger hub in the UK. A significant proportion of its passengers are transfer or connecting passengers (changing flights at Heathrow). In contrast, Gatwick is not a major passenger hub, despite being the 8th largest airport in Europe in 2016. Its traffic primarily consists of passengers starting or finishing their air journey at Gatwick.

27. The concept of a cargo hub is similar to a passenger hub. Cargo is fed into the hub from a wide geographic area. This can be through cargo feeder flights generating *transhipment cargo* (cargo which is transferred from one aircraft to another at the cargo hub). The other source of cargo that feeds into a cargo hub is from road feeder services. These trucking routes play a similar role to flights in bringing freight from a large catchment into the airport, which is then transferred to a flight (or even onto another trucking service).

28. Major passenger hubs are frequently also acting as cargo hubs (due to the significant amount of bellyhold capacity available, the schedule connectivity, and the economies of scale). Heathrow is the UK's largest cargo hub, despite having a relatively small number of dedicated freighter services. Frankfurt is a leading example of a major passenger hub that also has an extensive range of freighter flights.

29. The other two cargo hubs in the UK are East Midlands and Stansted. Neither airport is a passenger hub. In both cases, cargo is almost exclusively carried on dedicated freighter aircraft. *Dedicated freighter hubs* (cargo hubs at non-passenger hub airports) typically have fairly unrestricted operating conditions (e.g. 24-hour operations, slot availability) and are centrally located. Integrators usually account for a substantial share of cargo at dedicated freighter hubs.

30. These definitions are important in the context of Manston. The location of Manston on a peninsula prevents its development as a cargo hub[7]. Even if the airport was to successfully attract high cargo tonnage in the future (which we consider unlikely), it would merely become a large cargo airport rather than a cargo hub.

31. The final term to introduce is *freight forwarders*. These are firms specialising in arranging storage and shipping of merchandise. Freight forwarders typically provide warehousing, negotiate and book aircraft cargo space, prepare documentation, arrange insurance and track progress of freight. They also consolidate cargo, where several smaller shipments are assembled and shipped together to avail of better freight rates and security of cargo[8]. Freight forwarder activity is usually concentrated at major cargo hubs (whether bellyhold or dedicated freighter hubs). This is due to economies of scale benefits.

[7] True cargo hubs are at the centre of their catchment area, with 360-degree connectivity (i.e. receiving road feeder services from all spokes of the wheel). Due to its location, Manston could only receive road feed from the west of the airport.
[8] www.businessdirectory.com

1.5. About Altitude Aviation Advisory

32. Altitude was formed in May 2013, and brings together a wide range of experience gained within the aviation sector. The two principals have worked in the aviation sector for a combined total of more than 50 years.

33. Team members have been involved in a diverse mix of strategic and commercial projects for a wide range of clients including airports, airlines, investors, debt providers, government and regulatory bodies. Our main service areas are airport transactions, business optimisation, traffic forecasting, route development and economic regulation.

34. Since 2013, we have worked directly for 10 different UK airports on a range of strategic, business planning and traffic forecast assignments. We have also provided due diligence support for various UK airport transactions covering 8 airports (all to financial close). In total, we have undertaken multiple projects across 13 different UK airports, either directly and/or as part of a transaction.

35. While the UK is our home market, the company has a global footprint. Our team experience encompasses over 150 airports worldwide. In 2017 alone, we have undertaken projects in Australia, Italy, USA, Russia, Denmark, Turkey, Belgium, Ireland, Serbia, Iceland, Hungary, Cyprus, and Portugal.

36. The Altitude team has considerable cargo experience. This includes previous employment working in the cargo division of a major airline and consultancy experience leading stand-alone cargo strategy projects in geographies as diverse as the UK, Eastern Europe, Middle East, and North America.

2. Executive Summary

2.1. Overview

37. We have undertaken an in-depth review of the Azimuth reports, and developed our own analysis of the future potential for freight at a reopened Manston Airport.

38. Manston has historically played a role as a niche air freight airport. We do not see potential for a more significant role in the future. This is in contrast to Azimuth. Azimuth's forecasts show the airport more than doubling its previous annual freight record in the first year of freight traffic returning. By year 18 of Azimuth's forecast, Manston is forecast to exceed the 2016 freight tonnage at East Midlands Airport (the largest dedicated freighter hub in the UK). This is simply not credible or likely.

39. We have identified significant weaknesses in the Azimuth analysis and forecasts. The following factors have not been acknowledged and/or adequately reflected:

- There is no overall shortage of freight capacity in the UK or South East specifically. While Heathrow is constrained, there is significant spare freight capacity at the established dedicated freighter hubs at Stansted and East Midlands.
- Cargo activity in the UK has become very consolidated on the 3 cargo hubs (Heathrow, Stansted and East Midlands). All three of these airports have plans to significantly expand cargo capacity, and they forecast strong growth in cargo tonnage. Furthermore, other established passenger airports have the capability of handling much higher cargo volumes if demand existed.
- There has been a strong trend towards bellyhold freight, with the role of dedicated freighters diminishing. The most recent (2017) Department for Transport ("DfT") forecasts to 2050 assume the number of freighter flights in the UK will remain flat at 2016 levels[9].
- Trucking is a highly integrated component of the air freight business model, and not merely a substitute for air freighter flights when airport capacity is constrained. The increasing use of truck feeder services is due to cost efficiencies and is not restricted to the UK.
- Manston is in a poor location to serve the wider South East or UK market. Other structural disadvantages include lack of critical mass, lack of a passenger hub, and night flight restrictions. These factors have limited Manston's role to that of a niche freight airport.

40. We consider the Azimuth freight forecasts to be extremely optimistic, with negligible supporting evidence. In particular:

- Historic performance is ignored (both at Manston or more generally across the UK market – the Azimuth growth forecast for Manston would be unprecedented in a UK context).
- There is a heavy reliance on qualitative techniques, with no substantive attempt to quantify the size of the markets Manston will be competing in, or how it would gain market share.
- Many of the references from published studies are too generic to be meaningful or are taken out of context.
- In making the case for Manston, Azimuth seeks to rely on reports prepared by York Aviation in 2013 and 2015. We share York Aviation's view, as set out in a parallel report commissioned by SHP, that these reports do not support Azimuth's conclusion that there would be a substantive role for Manston in the UK air freight industry.

41. Finally, we also view the Azimuth cargo air transport movement ("ATM") projections for Manston to be very optimistic and again unlikely. The projected average freight loads per flight are much lower than historic levels, and also lower than typically seen at cargo airports specialising in general freight (i.e. with

[9] (Department for Transport, 2017a, p. 33)

limited integrator presence). Even if the freight forecasts were achieved (which we consider very unlikely), we would anticipate significantly lower numbers of cargo air transport movements.

2.2. Introduction

42. Azimuth has published four reports in support of RSP's proposed DCO application. Volume 1[10] aims to answer the following questions:

> *"Does the UK require additional airport capacity in order to meet its political, economic, and social aims?*
>
> *Should this additional capacity be located in the South East of England?*
>
> *Can Manston Airport, with investment from RiverOak, relieve pressure on the UK network and meet the requirement of a nationally significant infrastructure project?"*

43. Azimuth concludes that *"the answer to each of the above questions is overwhelmingly yes"*. However, the questions conflate different issues. The first two questions provide poor context for the third question, and are not relevant to RSP's proposals for Manston.

44. We agree that the UK needs additional airport capacity, and that it should be located in the South East of England. This is not surprising given that:

- In September 2012, the Government asked Howard Davies to chair an independent Commission to identify and recommend options to maintain the UK's position as Europe's most important aviation hub[11] ("the Airports Commission").
- The Airports Commission concluded that "*a new runway in the South East is needed by 2030*". It also "*concluded that the best answer is to expand Heathrow's runway capacity*" as "*Gatwick… is unlikely to provide as much of the type of capacity which is most urgently required: long-haul destinations in new markets. Heathrow can provide that capacity most easily and quickly. The benefits are significantly greater, for business passengers, freight operators and the broader economy*[12]".
- In October 2016, the Government announced that its preferred scheme to meet the need for new airport capacity in the South East was a Northwest runway at Heathrow. This was subsequently confirmed in its revised draft Airports National Policy Statement ("ANPS"), published in October 2017. The ANPS[13] stated 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*." The draft ANPS, once ratified by Parliament, will settle the "need" case for the Northwest runway at Heathrow, but no other form of airport development.

45. However, while we agree with the positive response to the first two questions, it does not automatically lead to a "yes" for the third question. The third question covers fundamentally different issues to the first two questions.

46. There are clear distinctions between different types of airport capacity. The Gatwick option would have provided more incremental runway movements than the recommended Heathrow option[14]. However, a key reason for recommending Heathrow was that *"It delivers more substantial economic and strategic benefits than any other shortlisted option, strengthening connectivity…*[15]*"*

[10] (Azimuth Associates, 2017 a, p. I)
[11] (Airports Commission, 2015, p. 37)
[12] (Airports Commission, 2015, p. 4)
[13] (Department for Transport, 2017b, p. 31)
[14] (Airports Commission, 2015, p. 238)
[15] (Airports Commission, 2015, p. 245)

47. RSP is promoting a reopened Manston Airport on the basis of providing capacity for dedicated freighter flights:

- Bellyhold freight comprises ca. 70% of UK freight (see Figure 4), a proportion that has been growing since 2004 (see Figure 5). Azimuth's freight forecasts do not assume any bellyhold freight[16]. We agree with this Azimuth assumption, and consider that the development of bellyhold freight at Manston is extremely unlikely.
- Azimuth's forecasts passenger traffic of ca. 1.4 million by the 20th year of operation[17]. We consider these forecasts to be optimistic. However, even taking these forecasts at face value, the passenger throughput would represent less than 1% of 2016 passenger traffic at London airports.

48. Therefore, rather than asking "*Can Manston Airport, with investment from RiverOak, relieve pressure on the UK network and meet the requirement of a nationally significant infrastructure project?*", more relevant, targeted questions would be:

- Considering planned airport expansions, will there be a need for further airport capacity in the UK for dedicated freighters?
- Will the South East in particular require additional capacity for dedicated freighters?
- Would a reopened Manston be well placed to effectively serve a significant proportion of the dedicated freighter market?
- Are there other potential airport options for new dedicated freighter capacity?

49. In the rest of the Executive Summary, we address each of the sub-questions above in turn.

2.3. Need for Further Airport Capacity in the UK for Dedicated Freighters

Current Situation

50. There is no overall shortage in UK airport capacity for dedicated freighter operations. Both of the two largest freighter hubs, East Midlands and Stansted, can accommodate significantly more freighter services than they currently operate (see Section 5.3).

51. The UK does lack available dedicated freighter capacity at its major passenger hub airport, Heathrow.

- Heathrow is also the UK's largest freight airport with ca. 65% of the UK's overall throughput (see paragraph 109).
- Freight forwarder activity has consolidated around Heathrow on the strength of its extensive network of long haul passenger services. These services, typically using widebody aircraft, provide substantial bellyhold cargo capacity.
- At Heathrow, only ca. 5% of freight is carried on dedicated freighters (see Figure 4). A lack of available runway slots restricts freighter activity. In the absence of operating constraints, major passenger hubs tend to also play a role as key hubs for freighter aircraft (e.g. Frankfurt). Freighter services complement the connectively provided by passenger flights, while the cargo industry benefits from economies of scale and scope from the consolidation of activity at a hub airport.

52. Where dedicated freighter flights cannot be accommodated at Heathrow (due to capacity constraints), freight customers have the following choices:

- Operate freighter flights (or use existing freighter flights) from other UK airports where capacity is available (e.g. Stansted, East Midlands).
- Transport freight in the bellyhold of passenger flights from Heathrow (or other UK airports).

[16] (Azimuth Associates, 2017 c, p. 11)
[17] (Azimuth Associates, 2017 c, p. 16)

- Transport freight to a major European air freight hub (e.g. Liege, Frankfurt), typically by road truck.
- Use surface modes of transport (road, rail, water) for the whole journey (note that this is not a realistic option for most potential air freight consignments due to the distances involved and/or urgency of shipment).

53. Azimuth asserts that UK air freight has been constrained since 2000[18]. Furthermore, Azimuth concludes that shortage of airport capacity is leading to more trucking of freight ("*flying freight from Manston, negating the need to truck, to and from European airports for air transportation*[19]").

54. We consider that these conclusions are highly simplistic:

- As discussed above, we agree there is a shortage of dedicated freighter capacity at the UK's main passenger hub airport (Heathrow). However, freighter capacity is available at other airports. For example, both Stansted and East Midlands have expanded freighter activity significantly since 2000, and continue to have spare capacity.
- Therefore, any shortage of air freight capacity in the UK relates specifically to Heathrow hub capacity rather than a more general lack of capacity.
- Trucking is a highly integrated component of the air freight business model, and not merely a substitute for air freighter flights when airport capacity is constrained. The increasing use of truck feeder services is due to cost efficiencies and is not restricted to the UK (see Figure 32). We see no evidence that the growth in trucking is primarily driven by lack of Heathrow capacity for air freighter flights.
- In any case, even if there were significant levels of trucking caused by constraints at Heathrow, this would only be reduced by the provision of more Heathrow runway capacity. As there is already spare capacity at other airports in the UK, provision of further capacity would not make any significant difference to trucking levels. There is no reason why economic decisions to truck freight rather than fly would change in the absence of new Heathrow capacity.

Future Requirement

55. We have assessed the future demand for air freight in the UK, reflecting some notable trends:

- Increasing role of passenger aircraft in the carriage of air freight, and the relative diminishing in importance of freighter aircraft. Passenger demand has developed strongly in recent years. This has led to expansion of cargo capacity in the bellyhold of passenger aircraft outstripping growth in air freight demand (see Figure 37).
- This trend has led to cutbacks in dedicated freighter operations from leading airlines such as Cargolux, IAG, Air France-KLM and Singapore Airlines (see paragraph 425). Airbus forecasts growth of just 42 freighters in European fleets by 2036[20]. In the UK, freight tonnes carried on all-freighter aircraft peaked in 2004, and has fallen from 37% of the total air freight to 30% by 2016 (see Figure 5). The most recent Department for Transport forecasts to 2050 assume the number of freighter flights in the UK will remain flat at 2016 levels[21].
- There has also been a clear move towards consolidation of air freight activity at major passenger or freight hubs[22]. In the UK, the leading 3 airports (East Midlands, Stansted and Heathrow) have steadily grown their share of overall UK air freight tonnes on dedicated freighter services – from 41% in 1990 to 86% in 2016 (see Figure 7). The UK bellyhold market is even more consolidated,

[18] (Azimuth Associates, 2017 a, p. 8)
[19] (Azimuth Associates, 2017 a, p. 19)
[20] (Airbus, 2017a, p. 105)
[21] (Department for Transport, 2017a, p. 33)
[22] See Paragraph 24 onwards for our definition of passenger and cargo hubs. Note that the location of Manston on a peninsula prevents its development as a cargo hub. Even if the airport was to successfully attract high cargo tonnage in the future, it would merely become a large cargo airport rather than a cargo hub.

with the leading 3 airports (Heathrow, Manchester, Gatwick) achieving a combined market share of 97%+ in each year since 1996 (see Figure 11).

56. These fundamental market trends have not been recognised or have been ignored by Azimuth in its assessment of the potential for a re-opened Manston.

57. We have developed a forecast of UK air freight demand to 2050, linked to UK economic growth (see Section 7.1). We forecast a compound annual growth rate ("CAGR") 2016-40 of 2.4%, much higher than recent growth rates (e.g. CAGR 2010-16 of 0.4%, CAGR 2000-2016 of 0.2%). This results in ca. 4.2m tonnes of demand in 2040.

58. Based on published expansion plans and various prudent assumptions (see Section 6.4), we estimate that the available air freight capacity at the leading 5 UK airports alone will be around 5m tonnes per year in 2040. This is comfortably higher than the envisaged demand levels. Furthermore, the potential freighter capacity is significantly above our freighter demand forecast, and the potential bellyhold capacity is significantly above our bellyhold demand forecast.

59. Furthermore, we do not envisage overall capacity shortages in the shorter term. Only towards 2050 could capacity start to become constrained, assuming no further development of capacity from 2040 onwards. Therefore, any business that Manston could capture would primarily be at the expense of other UK airports.

Conclusion

60. The UK currently has sufficient overall airport capacity for air freight, albeit capacity at Heathrow is constrained.

61. Based on planned expansions at the existing major airports, we do not envisage a need for additional freight capacity to be developed in the period to 2040, or possibly 2050.

62. Therefore, there is not a compelling need for development of further airport capacity for freighter aircraft in the UK.

2.4. South East Requirement for Additional Dedicated Freighter Capacity

63. Cargo is less time sensitive than passengers. Therefore, an airport's cargo catchment area is typically many times larger than its passenger catchment. This is one of the key factors that leads to the high degree of consolidation seen for air cargo.

- For example, Leipzig Airport considers its catchment covers a 10-hour trucking radius (see Figure 38), while Liege sees its catchment as all areas within access of a full day trucking (see Figure 39).
- East Midlands serves the whole of England and Wales, exploiting its central location in England.
- Similarly, the extensive network of long haul flights from Heathrow means it attracts freight from the whole of Great Britain.

64. Mainly due to the hub strength of Heathrow, 78% of 2016 UK air freight was flown from airports in the South East & East of England. Heathrow and Stansted alone achieved 65% and 7% market share respectively.

65. Much of the UK's high value manufacturing is located outside London and the South East[23]. In Q1 2015, only 15% of UK manufacturing jobs were located in London and South East[24]. Clearly, a substantial proportion of air freight using Heathrow in particular will be travelling to/from other areas of the UK.

66. We do not see a need for new air freight capacity to be located in the South East specifically. New capacity would be most usefully concentrated at existing major air freight hubs, whether in the South East

[23] (Heathrow Airport, 2014, p. 19)
[24] (House of Commons Library, 2015, p. 7)

(Heathrow, Stansted) or outside (East Midlands). This would enable the air freight industry to continue to benefit from the economies of scale and scope flowing from market consolidation.

67. The Airports Commission negatively assessed the freight potential of Gatwick due to its location. It stated, "*Gatwick's position to the south of London limits its effectiveness as a national freight hub*[25]." This is consistent with our view that locations which can be accessed from a wide national catchment (whether in the South East or not) are more advantageous than locations in less accessible parts of the South East. We would also consider Gatwick to be a more accessible location than Manston.

2.5. Market Position of a Reopened Manston

68. We have argued above that there is no requirement for additional air freighter capacity in the South East, over and above developments already in the pipeline (being consented or planned) at existing airports.

69. However, even if our assessment is incorrect and further capacity is needed in the future, Manston would not be an effective solution.

70. While a re-opened Manston would contribute to overall UK freighter capacity, it clearly would not provide "hub" capacity of the type that is constrained at Heathrow.

- The inability of Manston to achieve more than 43,000 tonnes[26] in any single year in the period from 2000 until its 2014 closure highlights that the capacity provided at Manston was not a suitable substitute for Heathrow freighter capacity.
- In the same way, many other UK airports have material underutilised freighter capacity despite Heathrow constraints.

71. Manston's geographical location severely restricts its ability to develop into a national dedicated freighter hub. Were Manston airport to be re-opened at some point in future, it would likely be competing directly with East Midlands and Stansted for cargo-only flights. The outlook for the airport in this scenario is poor.

72. Firstly, the location of Manston on a peninsula physically limits the size of its catchment area.

- Within a 3-hour drive, only the South East & East of England, and a small part of the Midlands, are accessible (see Figure 17).
- In comparison, most of England and Wales can be accessed within 3 hours of East Midlands Airport, while Manston's catchment is essentially a sub-set of the Stansted catchment.
- The case studies of Liege and Leipzig, as well as the strong growth of cargo at East Midlands, indicate the importance of a large catchment area and central location. While these airports attract cargo from an extensive area, they also benefit from strong cargo demand within their immediate catchment.

73. In addition to Manston's poor geographic location, it is also relatively far from important transport infrastructure. The motorway network is not especially close (the airport is ca. 22 miles from the M2 and 38 miles from the M20). Successful freight airports in the UK and Europe have been shown to be extremely close to the national motorway network, helping to minimise the shipper/consignee to airport transport time[27].

74. Secondly, there is a consensus[28] in the air freight industry that the ability to handle night flights is critical for many types of air cargo (in particular for express freight, but also for other types of cargo).

- East Midlands and Stansted are both able to accommodate flights 24 hours per day.

[25] (Airports Commission, 2015, p. 24)
[26] Average ca. 28,000 tonnes/year for the period 2000-2013 (last full year of operation). Source: CAA airport statistics.
[27] For example, East Midlands Airport is within 3 miles of the M1 motorway. Similarly, Stansted is less than 3 miles of the M11 motorway. The Heathrow Cargo Centre is within 3 miles of the M4, ca. 5 miles from the M25 and ca. 8 miles from the M3.
[28] For a typical industry comment on this issue, see paragraph 446

- Both Liege Airport and Leipzig Airport cite the ability to accept night flights, and the support of local government in doing so, as factors in their success.
- It is unclear (in the context of historic restrictions) whether or not night flights would be allowed at Manston Airport were it to reopen. However, it does seem clear that restrictions on night flying would have severe limitations for air cargo potential at the airport.

75. Finally, as noted previously, there is a clear move towards consolidation of freight activity at a few large airports. In order to be successful, Manston would need to reverse this well-established trend. It is not apparent how this could be achieved, even with markedly lower airport charges (which in turn would compromise the financial viability of the airport).

76. Therefore, even if there was a future need for additional airport capacity for freighter activity, Manston is poorly placed in both geographic and potential operational terms to service such a requirement. Other airports are in a much better position to exploit any such future opportunities.

2.6. Other Potential Options for New Dedicated Freight Capacity

77. Azimuth concludes that "*Manston is the only real choice for the location of a freight-focused airport in the South East of England*[29]". As discussed above, we dispute the need for a new freight-focussed airport, or that any such airport would need to be located in the South East. If new capacity was needed in the South East, a more central location than Manston's position on a peninsula would be desirable.

78. Bournemouth Airport is dismissed by Azimuth on account of its location and distance from the motorway network. We agree that these are significant disadvantages but similar issues apply to Manston (with its location arguably even more compromised than Bournemouth).

- From the South West, West London and the Midlands, Bournemouth is generally more accessible than Manston.[30]
- Bournemouth Airport[31] highlights that:

> *"With ample room to grow, our thriving cargo facility is expanding to meet the demands of importers and exporters from across the UK. Accommodating a huge variety of freight and passenger aircraft, Bournemouth supports cargo logistics round the clock, with the following benefits: 2271m runway, excellent good weather record, congestion free (with no slot restrictions), experienced in handling many cargo aircraft including the AN-124 Ruslan, 'Freighter friendly' airport management."*

79. As discussed, the South East is not necessarily the best location for new freighter capacity. Outside the South East, Doncaster Sheffield Airport has a central UK location. It markets itself as "*the UK's Freighter Gateway*[32]":

> *At the centre of the UK with easy access to the M18, M1, A1M, M62 and M180 Doncaster-Sheffield is the ideal airport for freighter operations. DSA is justifiably gaining the reputation as the most effective freighter airport in the UK. The attributes that are delivering this include…. exceptional performance record, 24 hour operation, runway 2,893m x 60m, CAT III, Class "D" controlled airspace, no slot constraints/congestion, Competitive jet fuel prices, short taxiing distances, excellent cargo reception and handling, inclusive pricing, NEQ capacity up to 9,300kg Hotac."*

[29] (Azimuth Associates, 2017 a, p. 19)
[30] For example, the following distances have been sourced from Google Maps for the typical fastest routing. Bournemouth Airport to Hounslow: 90 miles, Manston Airport to Hounslow: 103 miles. Bournemouth Airport to Bristol: 70 miles, Manston Airport to Bristol: 201 miles. Bournemouth Airport to Birmingham: 167 miles, Manston Airport to Birmingham: 197 miles.
[31] www.bournemouthairport.com/about-us/doing-business-together/cargo/
[32] www.therouteshop.com/profiles/doncaster-sheffield-airport/

80. Both these airports are currently operational, and benefit from a large site with a long runway. Doncaster Sheffield operates 24 hours a day, whilst night flights at Bournemouth can be arranged with prior notice.

81. Furthermore, Birmingham and Doncaster Sheffield have longer runways than Manston, with spare capacity to develop freighter activity. Both have superior locations than Manston.

2.7. Conclusion

82. It is highly unlikely that a re-opened Manston could play any significant role in serving the needs of the UK air cargo industry. There is currently no shortage of overall capacity, and future demand growth into the long term can be met with planned expansion from the leading cargo airports in the UK.

83. The Azimuth freight forecasts for Manston are summarised below:

- In Year 2 (the first year of freight traffic), tonnage is forecast to be more than double the previous Manston peak annual value.
- By Year 11, freight throughput is forecast at similar tonnage to 2016 Stansted performance. Growth from Year 2 to Year 11 is forecast at CAGR 9.7%.
- By Year 18, Manston is forecast to exceed the 2016 freight tonnage at East Midlands Airport (the largest dedicated freighter hub in the UK).

84. We consider the forecasts to be extremely optimistic, not credible or likely, with negligible supporting evidence.

- Growth in freight at Manston would be unprecedented in a UK market context, and in complete contrast to previous historic performance.
- As discussed previously, we do not expect there to be an overall shortage of freighter capacity in the UK or South East. Even if we are wrong in this assessment, Manston and other smaller airports have shown no signs of benefiting from supposed capacity shortages in recent years. Furthermore, there is demonstrable spare capacity at Stansted and East Midlands, both better established and located.
- The rationale for why Manston will be able to achieve a massive uplift on previous performance is weak. The stated advantages of using Manston were present when the airport struggled to grow freight volumes, despite investment in infrastructure and marketing (the previous owners invested £7m on new aprons and taxiways, increasing the freight capacity to 200,000 tonnes[33] per annum). Lack of Manston capacity was not a factor.
- As well as the forecasts ignoring historic performance, they also do not reflect the very clear market trends towards consolidation of freight at major passenger and dedicated freighter hubs. UK airports outside the major three freight hubs have seen volumes fall. There is also a trend away from freighter services towards bellyhold freight.

85. Manston previously operated as a niche air freight airport. While it could theoretically regain this role in the future, its structural disadvantages (location, lack of critical mass, lack of passenger hub, night flight restrictions etc.) will severely limit its potential. Even if reinvested, relaunched and supported, we would not expect freight volumes to be materially above historic levels, and considerably below the volumes forecast by Azimuth.

86. Finally, the forecast of freighter ATMs is simply not credible.

- By year 20, ca. 17,000 freighter flights are forecast for Manston.

[33] (Wiggins Group plc, 2002, p. 16)

- This represents one-third of current UK freighter flights, in a market where the number of freighter ATMs has been contracting. This trend has been recognised by the DfT, with its 2017 forecasts to 2050 assuming the number of freighter flights in the UK will remain flat at 2016 levels[34].

87. In particular, we note that York Aviation's professional opinion[35] is that the capability of Manston Airport is 21,000 annual air cargo aircraft movements. This capacity is more than enough to accommodate any potential a re-opened Manston Airport may have.

88. In paragraph 48, we put forward four questions in relation to RSP's proposals for Manston. These are more relevant and targeted than the broader questions posed by Azimuth in its first report[36]. The answers to our questions have been developed over the course of the Executive Summary of this report. We summarise our conclusions in the table below.

Question	Response
Considering planned airport expansions, will there be a need for further airport capacity in the UK for dedicated freighters?	No, planned expansions at existing airports should comfortably provide sufficient freighter capacity until 2040 and beyond.
Will the South East in particular require additional capacity for dedicated freighters?	No, Stansted is planning significant capacity growth. A third runway at Heathrow will provide additional bellyhold capacity (putting downward pressure on freighter demand). Finally, the South East market can be well served by airports more centrally located in England.
Would a reopened Manston be well placed to effectively serve a significant proportion of the dedicated freighter market?	No, a reopened Manston would only serve a niche role, similar to its historic record. It has a poor location and operating restrictions.
Are there other potential airport options for new dedicated freighter capacity?	Yes, there are many UK airports with excess freighter capacity. For example, Doncaster Sheffield Airport has a central UK location. It markets itself as the UK's freighter gateway. It benefits from a large site with a long runway, and has 24 hour operations.

Table 1 – Summary of Analysis of Potential Future Freight Role for a Reopened Manston Airport

89. As can be seen above, when one asks more targeted questions, the outcome is very different to that presented by Azimuth. Our overall conclusion is that the RSP proposals and the Azimuth forecasts are deeply flawed. The outlook put forward by RSP / Azimuth does not reflect market realities. We would expect freight tonnage and freight ATM outturn at a reopened Manston to be considerably below the Azimuth forecasts.

[34] (Department for Transport, 2017a, p. 33)
[35] (York Aviation, 2017)
[36] (Azimuth Associates, 2017 a, p. I)

3. Review of Azimuth Reports - Context

3.1. Aims of Azimuth Report

90. This section reviews the first Azimuth report, titled "*Manston Airport: A National and Regional Aviation Asset, Volume I, Demand in the south east of the UK, March 2017*".

91. The first Azimuth report[37] aims to answer the following questions:

> *"Does the UK require additional airport capacity in order to meet its political, economic, and social aims?*
>
> *Should this additional capacity be located in the South East of England?*
>
> *Can Manston Airport, with investment from RiverOak, relieve pressure on the UK network and meet the requirement of a nationally significant infrastructure project?"*

92. Azimuth concludes that *"the answer to each of the above questions is overwhelmingly yes"*. However, the questions conflate different issues. The first two questions provide poor context for the third question, and are not relevant to RSP's proposals for Manston.

93. We agree that the UK needs additional airport capacity, and that it should be located in the South East of England. This is not surprising given that:

- In September 2012, the Government asked Howard Davies to chair an independent Commission to identify and recommend options to maintain the UK's position as Europe's most important aviation hub[38] ("the Airports Commission").
- The Airports Commission concluded that "*a new runway in the South East is needed by 2030*". It also "*concluded that the best answer is to expand Heathrow's runway capacity*" as "*Gatwick… is unlikely to provide as much of the type of capacity which is most urgently required: long-haul destinations in new markets. Heathrow can provide that capacity most easily and quickly. The benefits are significantly greater, for business passengers, freight operators and the broader economy*[39]".
- In October 2016, the Government announced that its preferred scheme to meet the need for new airport capacity in the South East was a Northwest runway at Heathrow. This was subsequently confirmed in its revised draft Airports National Policy Statement ("ANPS"), published in October 2017. The ANPS[40] stated 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*." The draft ANPS, once ratified by Parliament, will settle the "need" case for the Northwest runway at Heathrow, but no other form of airport development.

94. However, while we agree with the positive response to the first two questions, it does not automatically lead to a "yes" for the third question. The third question covers fundamentally different issues to the first two questions.

95. There are clear distinctions between different types of airport capacity. The Gatwick option would have provided more incremental runway movements than the recommended Heathrow option[41]. However, a key reason for recommending Heathrow was that *"It delivers more substantial economic and strategic benefits than any other shortlisted option, strengthening connectivity…*[42]*"*

[37] (Azimuth Associates, 2017 a, p. I)
[38] (Airports Commission, 2015, p. 37)
[39] (Airports Commission, 2015, p. 4)
[40] (Department for Transport, 2017b, p. 31)
[41] (Airports Commission, 2015, p. 238)
[42] (Airports Commission, 2015, p. 245)

96. RSP is promoting a reopened Manston Airport on the basis of providing capacity for dedicated freighter flights:

- Bellyhold freight comprises ca. 70% of UK freight (see Figure 4), a proportion that has been growing in recent years (see Figure 5). The Azimuth freight forecasts do not assume any bellyhold freight[43]. We agree with this Azimuth assumption, and consider that the development of bellyhold freight at Manston is extremely unlikely.
- Azimuth forecasts passenger traffic of ca. 1.4 million by the 20th year of operation[44]. We consider these forecasts to be optimistic. However, even taking these forecasts at face value, the passenger throughput would represent less than 1% of 2016 passenger traffic at London airports.

97. Therefore, rather than asking "*Can Manston Airport, with investment from RiverOak, relieve pressure on the UK network and meet the requirement of a nationally significant infrastructure project?*", more relevant, targeted questions would be:

- Considering planned airport expansions, will there be a need for further airport capacity in the UK for dedicated freighters?
- Will the South East in particular require additional capacity for dedicated freighters?
- Would a reopened Manston be well placed to effectively serve a significant proportion of the dedicated freighter market?
- Are there other potential airport options for new dedicated freighter capacity?

98. Over the course of this report, we address each of the sub-questions above in turn (an overview of our analysis is included in the Executive Summary).

3.2. Aviation Economic Contribution

99. Azimuth[45] refers to a study by the Centre for Economics and Business Research on the impact on trade of airport capacity shortages. Given the distinctions between different types of airport capacity[46], general references to the economic impacts of airport capacity shortages have limited relevance. More relevant is whether there is or will be a shortage of airport capacity for dedicated freighter aircraft. In Section 5, we address this issue directly.

100. On a similar basis, references to a European shortage of runway capacity[47] in Paragraph 2.2.2 are too general to be meaningful in the context of Manston Airport. Additional capacity can only contribute to alleviating shortages if it is the right type of capacity and in the right location.

3.3. RSP Vision for Manston Airport

101. The RSP vision for Manston Airport[48] also creates misconceptions. The Azimuth report states the vision is "*To revive Manston as a successful freight-focused airport*". This implies Manston was previously a successful freight airport. In analysing this, the following points are particularly relevant:

- Its throughput has never exceeded ca. 43,000 tonnes or more than 2.0% UK market share in a single year.
- The airport was also chronically loss making, with major operating losses each year from 2006 until its closure (period of data availability).

[43] (Azimuth Associates, 2017 c, p. 11)
[44] (Azimuth Associates, 2017 c, p. 16)
[45] (Azimuth Associates, 2017 a, p. 5)
[46] Passenger hub capacity, other hub capacity, freighter hub capacity, other freighter capacity, geographic location of capacity relative to demand etc.
[47] (Azimuth Associates, 2017 a, p. 5)
[48] (Azimuth Associates, 2017 a, p. 1)

- The historic volumes and financial performance clearly indicates that Manston Airport was not a viable financial proposition, despite considerable investment in freight capacity.

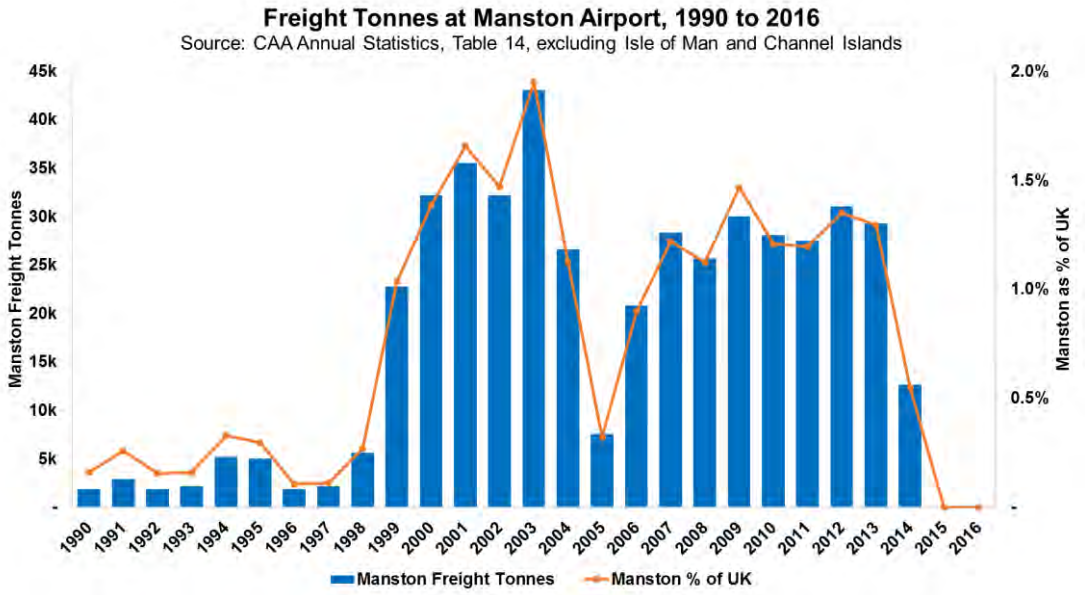

Figure 1 - Manston Airport Freight Tonnes 1990-2016

Figure 2 - Manston Airport Operating Margin (Operating Profit / Revenue) 2006-2014

102. As part of the RSP vision, it is stated that "*The only cargo hubs in the UK are East Midlands and Stansted airports, both of which focus on the integrator market. The UK needs a new hub for dedicated freighters, providing them with rapid turnaround times and the specialist security clearing ability that is currently absent at other UK airports.*"

- This description ignores Heathrow, which accounted for ca. 65% of all UK freight in 2016. It also implies, without foundation, that the focus on integrators at East Midlands and Stansted is incompatible with dedicated freighter provision.
- Furthermore, no evidence is presented to support the assertion that other UK airports are unable (either now or in the future) to support rapid turnaround times or possess specialist security clearing ability.

103. The reported vision also comments that "*The ideal location for this is close to the main market in the South East. RiverOak's long-term plan is to integrate Manston into the UK's airport network, effectively providing Heathrow with its fourth runway primarily dedicated to freighter cargo*."

- We highlight in paragraph 219 that the surface catchment area for freight is very wide, and there is no requirement for additional airport capacity for freight to be located in the South East specifically.
- The comment about Manston acting as a fourth runway for Heathrow is evidently untenable. Manston is ca. 100 miles from Heathrow, a similar distance as Birmingham Airport. Heathrow's existing two runways recorded ca. 473,000 air transport movements in 2016[49] (ca. 236,500 per runway), whereas Manston has never achieved more than 5,000 commercial air transport flights (passenger, cargo, air taxi combined) in a single year in the period since 2000.

[49] CAA Airport Statistics

4. Development of the UK Air Cargo Industry

4.1. Introduction

104. This section provides an overview of the development of the air cargo sector in the UK. The aim of this section is to highlight the key trends and the characteristics of the main airport players.

105. This analysis is then referenced in the following sections when considering the future outlook for the sector, and the role a reopened Manston could conceivably play.

4.2. UK Air Freight Development Since 1990

106. Since 1990, the UK air freight market can be divided into two distinct periods based on the growth trends seen. The period 1990-2000 was generally one of strong growth, with CAGR of 6.9% and positive annual growth in 9 of 10 years. In contrast, the period since then (2000-2016) has been one of stagnation (CAGR 0.2%, positive annual growth in only 8 of 16 years).

107. The 11th September terrorist attack in 2001, and the global financial crisis in 2008-09 coincided with particularly poor years for the UK air freight market.

108. In 2016, 2.4m tonnes of freight tonnes was handled at UK airports. This is the first year the previous 2004 peak was (slightly) exceeded.

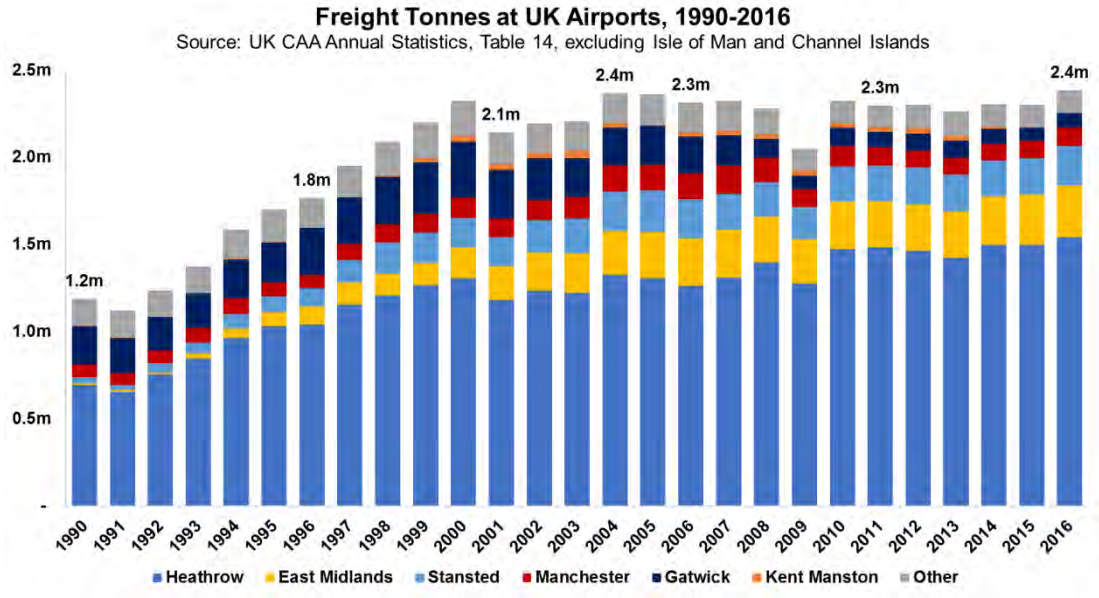

Figure 3 – Timeseries of UK freight tonnage

109. Heathrow is the airport in the UK that handles the most air freight. It has occupied this position through the entirety of the period 1990-2016. This is despite having constrained capacity (on the number of aircraft movements) through much of the period. In 2016 the airport achieved a market share of 64.6%.

110. East Midlands and Stansted are now the second and third largest airports for air freight in the UK. It has taken these airports 20+ years to reach this level, having grown from a very low market share in 1990. They had a 2016 market share of 12.6% and 9.4% respectively.

111. Manchester is the fourth largest UK airport for air freight. Note that it has grown very slowly, and continues to do so (1990-2016 CAGR of 1.6%, compared to 2.8% for UK airports excluding Manchester; 2011-2016 CAGR of 0.25%, compared to 0.77% for UK airports excluding Manchester).

112. In 2016 Gatwick was only the 5th largest UK air freight airport, having been clearly second-largest until ca. 2000.

113. Between them, these 5 airports accounted for ca. 95% of all UK air freight handled in 2016 (up from 87% in 1990).

114. Note that at no time in the period since 1990 has Manston played a significant part in the UK air freight market. Its share peaked at 2.0% in 2003, and in the 5 full years prior to its closure in 2014 (2009-13), it had an average share of 1.3%. The number of cargo ATMs only exceeded 1,000/year on a single occasion since 2000 (1,081 in 2003), averaging 462/year in the 2009-13 period (see Section 4.11).

4.3. UK Freighter versus Bellyhold Mix

115. At the top 5 airports in the UK, there are two distinctly different models of freight operation in place. At East Midlands and Stansted, virtually all freight is carried on cargo only aircraft (the low-cost carriers that operate passenger flights from these airports do not currently handle freight).

116. In contrast, at Heathrow, Manchester and Gatwick, less than 10% of freight is carried on cargo only aircraft (5.4%, 9.2% and 0.0% respectively).

- Overall, 29.7% of UK air freight in 2016 was carried on cargo only aircraft, with 70.3% carried in the bellyhold of passenger aircraft.

117. Despite Heathrow's low *proportion* of freight carried on cargo only aircraft, it continues to handle a significant share of the total UK freight carried on cargo aircraft[50].

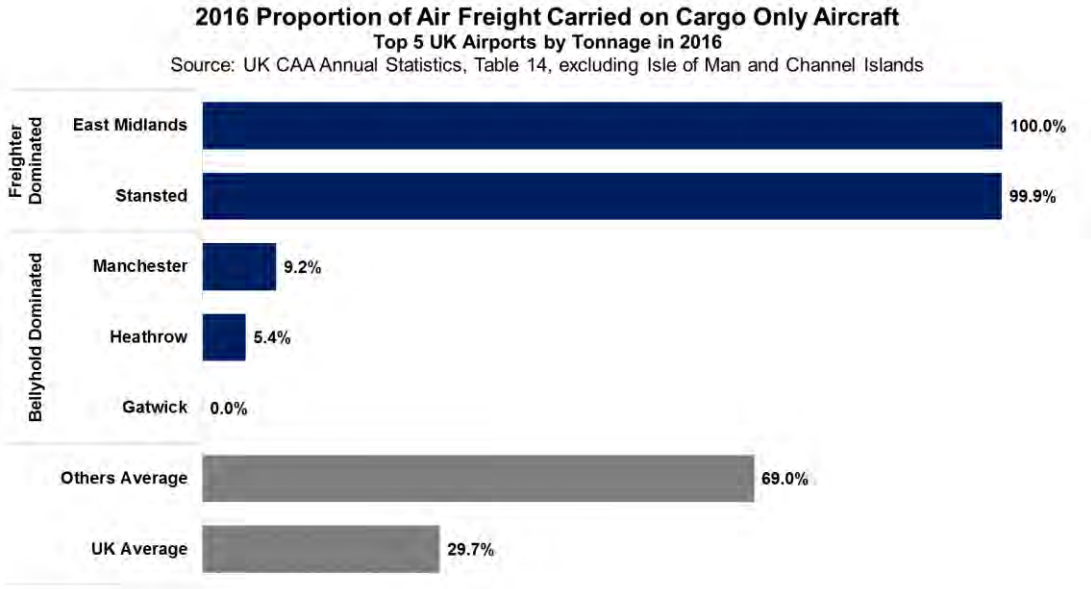

Figure 4 – Freighter/Bellyhold split at selected UK airports

[50] In 2016, Heathrow handled 12% of all UK freight carried on cargo only aircraft (a share it has broadly maintained since 2003).

118. Freight carried on all-cargo aircraft peaked in 2004, and has fallen significantly since while bellyhold freight has generally been growing. This is consistent with global trends highlighted in the appendix (Section 11.3) of this report.

Figure 5 – Split of UK air freight between bellyhold and dedicated freighter aircraft

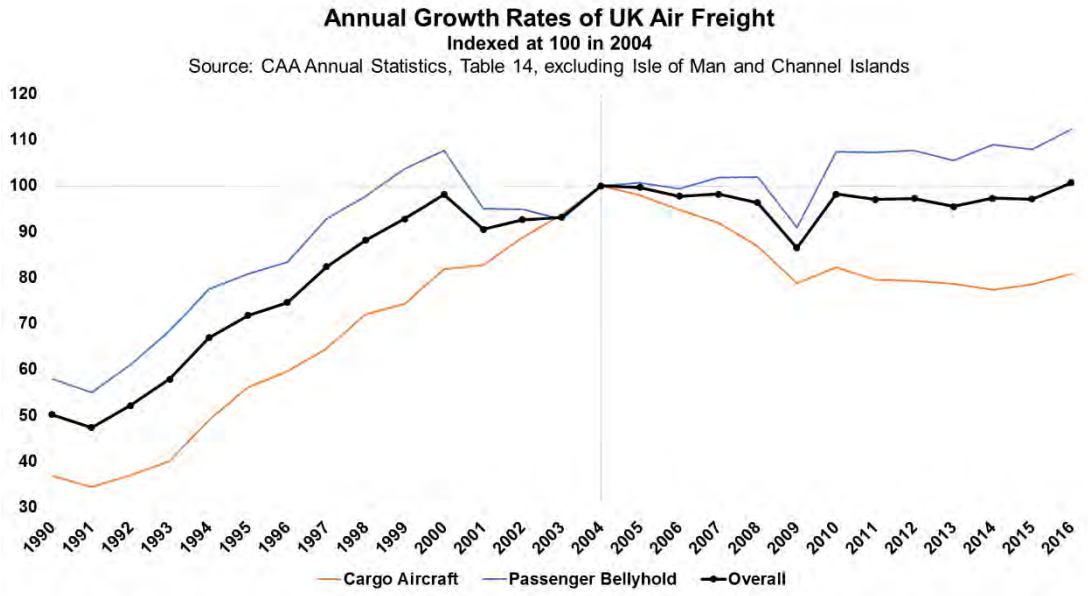

Figure 6 – Annual growth rates of UK freight

4.4. UK Freight on Cargo Only Aircraft

Airport Consolidation

119. In 1990, there were many UK airports from which carriers operated cargo only flights. Since then, there has been a very clear trend to consolidate cargo only operations at a few airports. In 2016, the three largest airports for freight (carried on cargo only aircraft) accounted for 86% of this UK market, up from 41% in 1990.

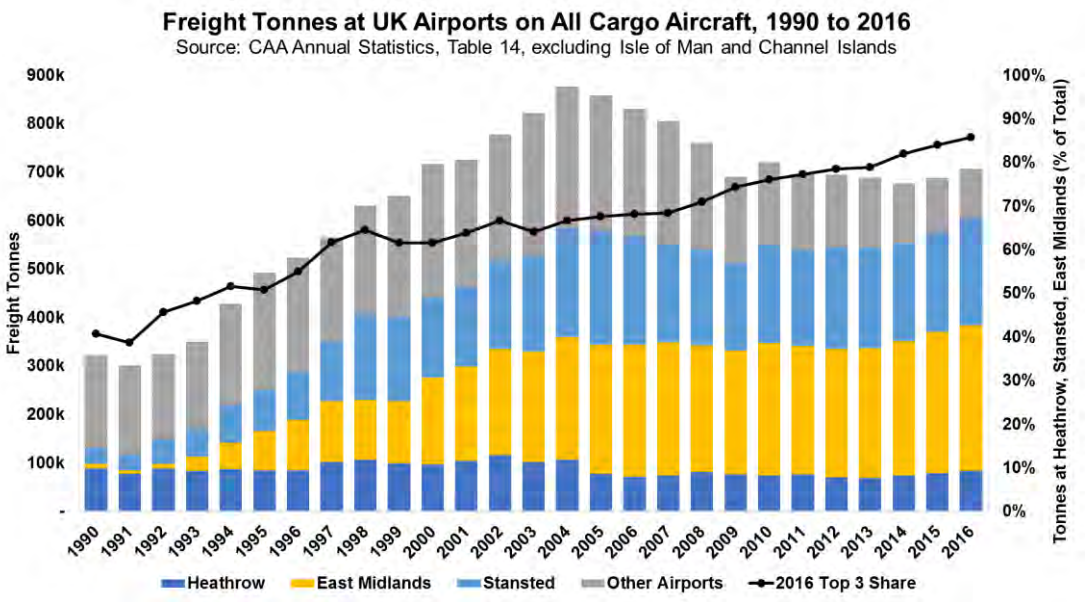

Figure 7 – Timeseries of UK freight on cargo-only aircraft

120. Historically, the following four airports have all been highly ranked in the UK for freight on cargo aircraft:

- Liverpool #5 in 1996 (peak tonnage in 1995, ca. 30,000 tonnes).
- Belfast International #4 in 2015 (ca. 38,000 tonnes in 2006).
- Prestwick #4 in 2001 (ca. 43,000 tonnes in 2001).
- Manston #4 in 2013 (ca. 43,000 tonnes in 2003).

121. However, by 2016 total freight on cargo aircraft across these airports was less than 20,000 tonnes (with Manston having shut completely).

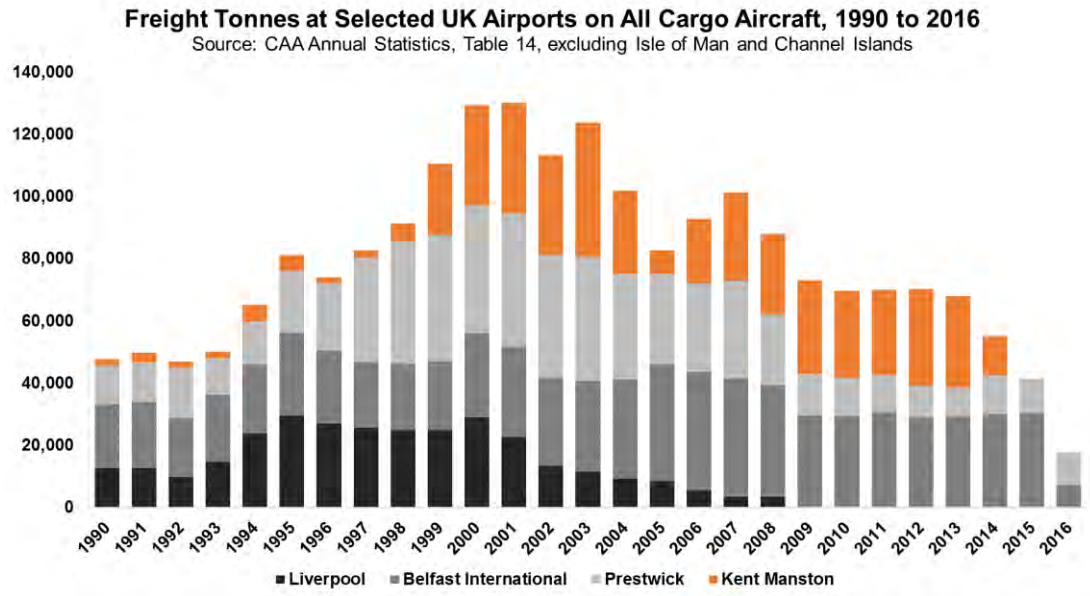

Figure 8 – Reduction of freight on cargo-only aircraft at selected airports

122. Note that none of the airports above has material capacity constraints. The trend towards consolidation of freight at a few airports is driven by cost efficiencies. It has resulted in airports which previously had significant freight volumes on all-cargo aircraft seeing their share of the market shrink/disappear.

123. In fact, of the 16 airports with more than 1,000 tonnes of freight on cargo aircraft in 1990, only 3 had higher equivalent freight volumes by 2016 (East Midlands: +290,000 tonnes, Stansted: +191,000, Luton: +4,000 tonnes, other 13 airports combined: -134,000 tonnes).

124. A similar trend can be seen when analysing the number of cargo aircraft movements; there is a sharp reduction in freighter flights from airports outside the "big three" of Heathrow, Stansted and East Midlands.

- Total freighter flights from other airports fell by almost 75% between 2000 and 2016 (from ca. 74,000 to ca. 19,000). Birmingham is the only significant cargo airport in this category that managed any meaningful growth in cargo ATMs (from 497 in 2000 to 1,184 in 2016).
- The number of freighter flights from the top 3 airports (Heathrow, East Midlands and Stansted) has varied relatively little over the same period.

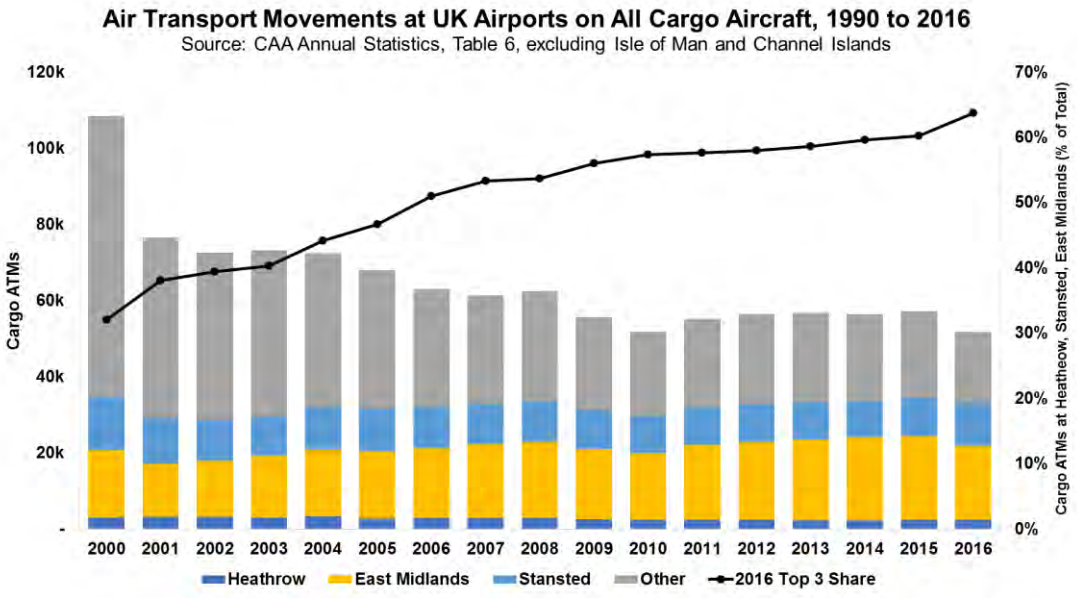

Figure 9 – Consolidation of freight on cargo-only aircraft at Heathrow, East Midlands and Stansted

125. Note that the decline in freighter movements has generally occurred at airports with limited infrastructure constraints. This indicates that airport capacity issues are not the main driver for the reduction in freighter flights at UK airports.

126. The Azimuth cargo ATM forecasts for Manston exceed 17,000 by year 20 (see Figure 25). This forecast should be seen in the following context:

- The most recent (2017) Department for Transport forecasts to 2050 assume the number of freighter flights in the UK will remain flat at 2016 levels[51].
- The Manston cargo ATM forecast is equivalent to 33% of the 2016 UK cargo ATM total, and over 80% of 2016 UK cargo ATMs if the two dedicated freighter hubs (East Midlands and Stansted) are excluded.
- After East Midlands and Stansted, Edinburgh is the next largest UK airport in terms of cargo ATMs, with 5,195 flights in 2016 (less than one-third of the projected Manston level in year 20).
- Since 2001, East Midlands and Stansted are the only UK airports to surpass 10,000 cargo ATMS in any single year.

[51] (Department for Transport, 2017a, p. 33)

Cargo-only Growth at a Regional Level

127. The change over time in the volume of freight carried on cargo only aircraft differs significantly by UK region. This is at least partially due to the locations of the larger airports at which freight has tended to consolidate since 2003.

128. For example, freight on dedicated cargo aircraft has grown substantially in the Midlands region, where East Midlands Airport has steadily developed into a major base for cargo only operations (in particular, express cargo). In contrast, freight on dedicated cargo aircraft has fallen in recent years in both the South East & East of England region and the Other UK regions.

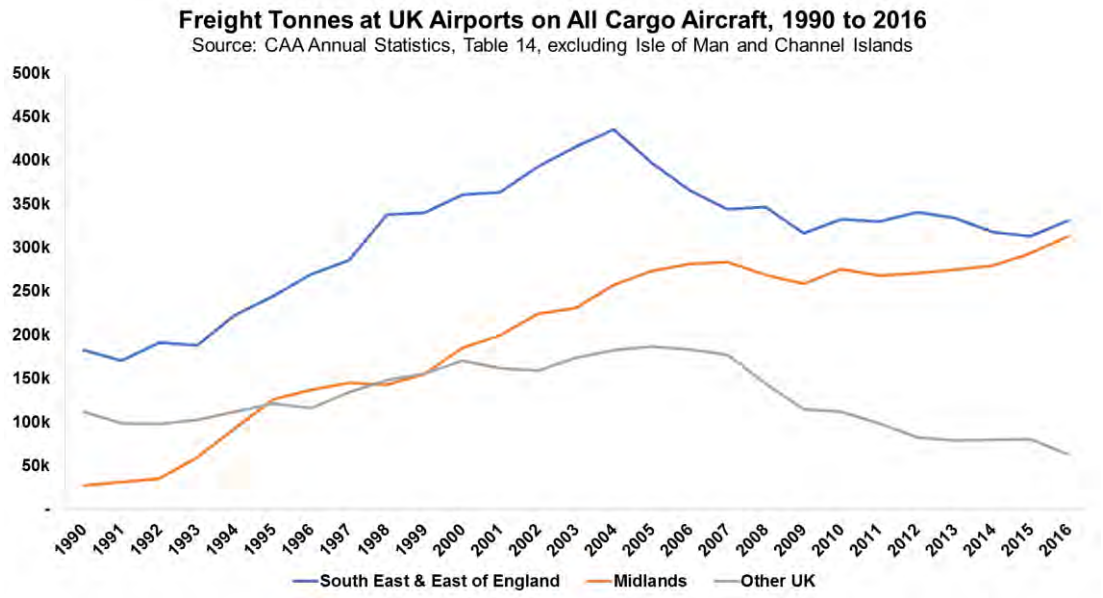

Figure 10 – Breakdown of UK freight on cargo-only aircraft, by region.

129. This reduction in freight on dedicated cargo aircraft in the South East & East region is sometimes attributed to shortage of suitable airport capacity. However, this does not explain the similar decline seen in the Other UK regions. Nor does it explain why this decline has not continued at the South East & East of England region airports through the period 2009-16 (through which the same constraints existed, and the decline continued at Other UK regional airports).

4.5. UK Bellyhold Freight

130. Heathrow handled 87% of all UK bellyhold freight in 2016. Manchester and Gatwick are the only other airports with significant bellyhold freight; in 2016, they had bellyhold market share of 5.9% and 4.7% respectively. These three airports have been the largest three airports for bellyhold freight since 1990, and have held a bellyhold market share of 96-98% over this period.

131. Heathrow dominates this segment as a result of its extensive long-haul network operated by wide body aircraft, which have significant cargo capacity. Freight tonnage on passenger aircraft has continued to grow at Heathrow (CAGR 2006-16 2.0%) despite the airport effectively operating at full runway capacity.

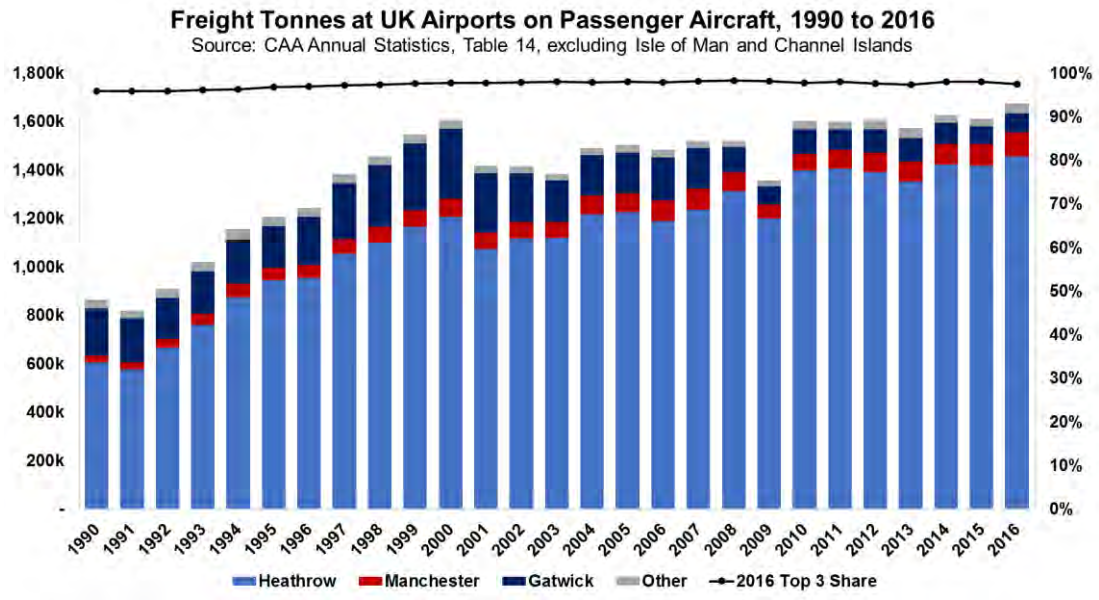

Figure 11 - Timeseries of UK freight on passenger aircraft

4.6. UK Air Mail

132. Mail is a relatively minor component of overall UK air cargo (ca. 200,000 tonnes in 2016 compared to 2.4m tonnes of air freight). For completeness, we include a brief overview of the UK air mail sector.

133. While volumes have fluctuated year on year, there has been no sign of sustained growth since the turn of the century (consistent with the widespread adoption of electronic communications).

134. As with air freight, air mail is concentrated on a small number of airports (Heathrow, East Midlands, Stansted, Edinburgh), with similar consolidation trends. Royal Mail has focussed on a small number of airports for night mail flights.

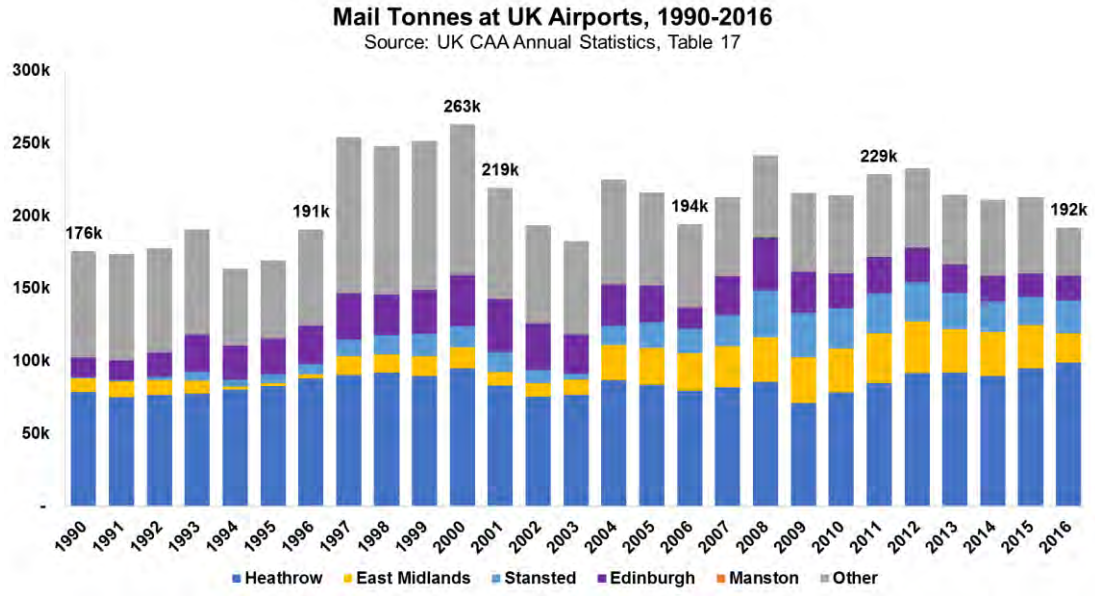

Figure 12 – Timeseries of UK Mail tonnage

4.7. Heathrow

135. As previously noted, Heathrow is the largest freight airport in the UK by some margin (as well as the largest passenger airport and only major passenger hub). It dominates the UK bellyhold segment and has a significant share of UK freight carried on dedicated freighters[52].

136. Despite operating very close to its air transport movement (ATM) limit for a number of years, Heathrow has managed to grow the volume of freight it handles faster than the overall UK market. It has had a higher annual growth rate than the average of other airports in the UK in 7 of 11 years over the period 2006-16, and also has a higher CAGR over that period (+2.0% compared to -2.2% at other UK airports).

137. It is likely that Heathrow cargo capacity has also been increasing through the adjustment of its mix of aircraft. There are two aspects to this:

- An increase in the proportion of ATMs allocated to widebody long haul flights, instead of narrow-body short-haul flights;
- The tendency for new long haul aircraft types (with the notable exception of the A380) to have more space for cargo than previous models.

138. We analyse each of the above factors in turn in the following paragraphs.

Widebody Share of Overall Flights

139. Data from OAG shows that the widebody share of Heathrow annual ATMs has risen from 34.0% in 2007 to 38.8% in 2017. Only two years in the ten-year period 2007-17 have seen this proportion fall. The airport stated in 2016 that "*fleet size at Heathrow has not fully matured and there is further potential to upsize / densify*"[53].

Cargo Capacity for Newer Aircraft Types

140. In general, older aircraft types have a lower cargo capacity than their newer equivalents. Of the older aircraft, the B747-400 is the most common in the UK. Likely replacements for this aircraft all have significantly higher cargo volume (given the payload available, volume is likely to be the constraining factor in the majority of markets to/from the UK). For example, the B777-9X has indicative cargo capacity of 109m^3 compared to just 71m^3 for the B747-400.

141. Further, industry sources reinforce the view that newer aircraft have a beneficial impact on cargo capacity. For example, American Airlines has commented:

> *"The introduction of the 787-9 brings another more fuel-efficient aircraft type with even greater cargo capacity into the American Airlines fleet…. On routes where we operate the aircraft, our cargo customers will see notable capacity improvements"*[54]

142. An exception to the trend for newer aircraft to have more cargo capacity is the A380, which has less cargo capacity than a B747. However, there are no indications that there will be any material increase in the prevalence of this aircraft in the UK[55].

143. Further analysis is provided in the appendices (see Section 13.1).

[52] The number of cargo ATMs operated at Heathrow is fairly low (ca. 2,500 in 2016) but average loads are high.
[53] (Heathrow Airport, 2016a, p. 8)
[54] (Vance, 2016)
[55] See Section 13.2 in appendix

144. The following charts, based on UK CAA data, shows that Heathrow has generally been successful at increasing its average freight tonnage per ATM, helping to maintain growth despite operating near its ATM limit.

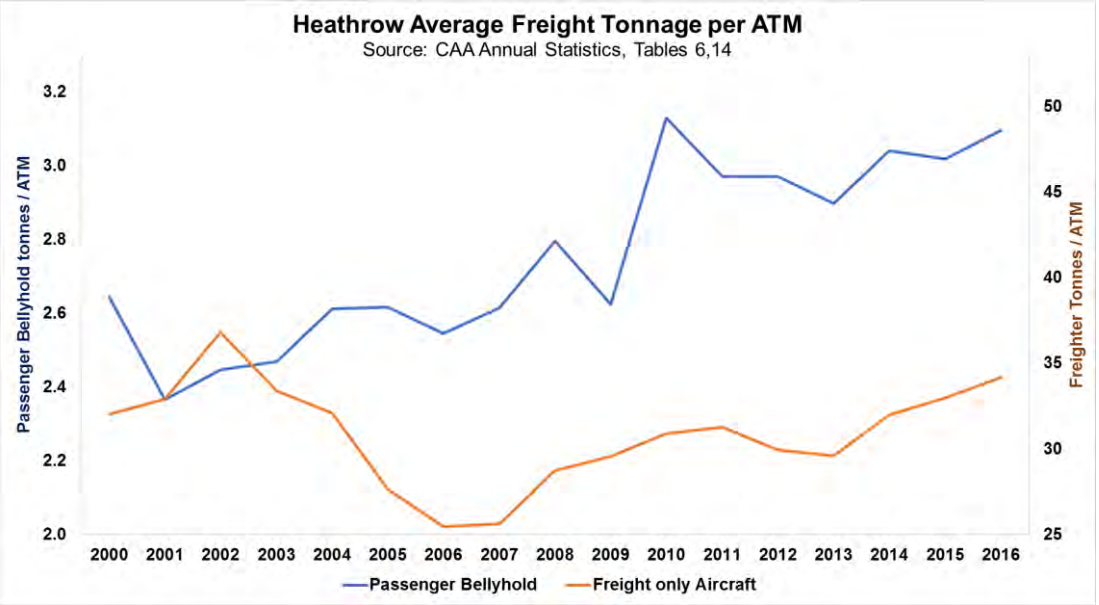

Figure 13 – Change over time of average tonnage per ATM at Heathrow

4.8. East Midlands

145. East Midlands Airport has a significant freighter operation. Since 2000, it has been the largest airport in the UK for cargo-only operations by tonnage handled (circa 300,000 tonnes of freight and ca. 20,000 tonnes of mail in 2016). The number of cargo ATMs in 2016 was ca. 19,000.

146. Almost all the freight handled by the airport is carried on cargo-only aircraft[56]. Bellyhold freight represents a tiny minority of tonnage at the airport, as most passenger flights are operated by low-cost carriers, which do not currently carry freight.

147. The type of freight handled at East Midlands Airport is predominately express cargo, a sector of the air freight market that has shown strong growth over the past decade. East Midlands is also a significant mail handling airport in the UK[57]. The airport states:

> *"DHL is the largest operator with services to key hubs in the USA and in Europe. UPS also link to their hubs in the USA and Europe and TNT have a smaller operation with a link to Europe"*[56]

148. Several of these integrators have invested significantly in operations at East Midlands Airport. For example, DHL invested £90m on infrastructure at East Midlands Airport in 2014[58].

149. The appeal of East Midlands Airport to the integrators is linked to the airport's location in the centre of England, where it is well placed to serve the whole of the UK. The ability to operate night flights is a key advantage. The airport states:

> *"The express freight operators provide an international next-day delivery service. This relies on the excellent surface access connectivity (90% of England and Wales is within a 4*

[56] (East Midlands Airport, 2015, p. 57)
[57] (East Midlands Airport, 2015, p. 16)
[58] (DHL, 2014)

hour (55mph) truck drive away from East Midlands Airport) along with the ability to operate aircraft at night"[57]

150. For express freight in particular, it is important to minimise trucking time between the shipper/consignee and the airport. As such, the location of an airport relative to warehouse locations is important. The map below highlights locations of large warehouse facilities in the UK[59]. A large number are seen to be near to East Midlands Airport, or on the motorway network with quick access to East Midlands Airport.

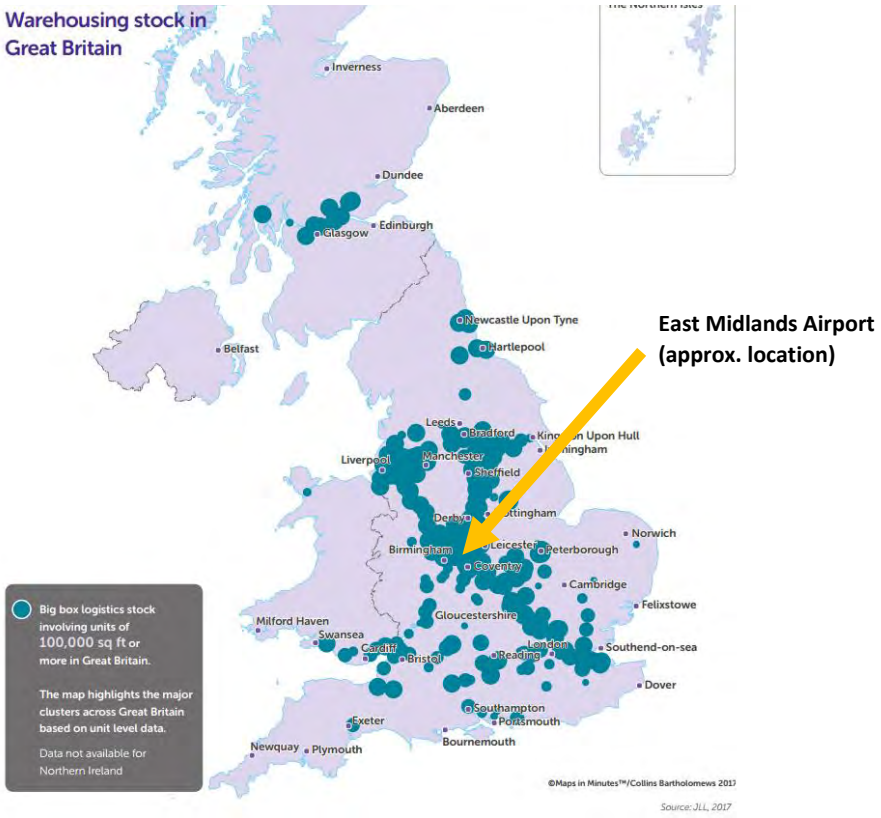

Figure 14 – Locations of large warehousing units in the UK, Source: Freight Transport Association

151. Regarding accessibility of the airport, East Midlands Airport states:

"There are in the region of 500 HGV movements to and from East Midlands Airport every day. However because of the nature of the freight hubs at East Midlands Airport, with pure-freight aircraft flying overnight, the vast majority of these vehicle movements take place very late at night (normally after 9pm) and very early in the morning (between 2am and 5am) and as such have no impact on peak motorway traffic levels"[57]

152. This pattern of utilisation fits with the airport's traffic being weighted heavily toward express freight. By implication, we can say that the vast majority of truck movements to/from East Midlands are not impacted by peak motorway traffic levels (as they are not using the motorway network at these times).

153. The "*East Midlands Gateway*", a project consisting of new warehousing and a rail freight station, is currently in development at a site next to East Midlands Airport. It is planned that the first warehouses will be occupied by September 2018. Construction of the rail station is due to begin after December 2019[60].

[59] (Freight Transport Association, 2017, p. 74)
[60] http://slp-emg.com/wp-content/uploads/2017/05/New-branding-A3.pdf

154. The importance of night flights to express freight has been stated before in this document, and is emphasised again by the breakdown of East Midlands ATMs, showing that ca. 64% of cargo ATMs in 2014 were at night (17,029 of 26,681)[61].

4.9. Stansted

155. Stansted has developed to become the main airport in South East & East region for freight on all cargo aircraft. It handled ca. 223,000 tonnes of freight in 2016, with further ca. 23,000 tonnes of mail (the number of cargo ATMs in 2016 was ca. 11,000). Amongst the London airports, it handled the highest volume of dedicated freighter traffic, and was also "*the most significant hub for express freight"*[62].

156. On express freight, the airport adds: *"The airport's express freight market, anchored by key operators such as FedEx and UPS, is the second biggest in the UK"*[62] (behind East Midlands Airport). TNT and around ten other companies also operate weekly services from the airport.

4.10. Others (excluding Manston)

157. Other airports that are significant for freight in the UK are Manchester, Gatwick and Birmingham. Together with the three airports discussed above, they accounted for 96% of UK air freight (by tonnage) in 2016. As an airport in the south of the country, Gatwick is worthy of more detailed examination.

Gatwick

158. In 2016, Gatwick handled 3% of the UK's air freight (ca. 80,000 tonnes). This was all in the bellyhold of passenger aircraft. However, it has previously had a share of the UK market as large as 18.5% (in 1990).

159. The proportion of Gatwick freight carried on cargo-only aircraft was between 6% and 25% over 1990-2006. In 2007, freighter share at Gatwick dropped to 1.4%, before falling close to 0% from 2012 onwards.

160. In 2008, a revised air traffic rights agreement between the UK and the USA meant that a significant number of long-haul UK-US operations switched from Gatwick to Heathrow. The loss of widebody capacity at Gatwick saw bellyhold freight fall by ca. 40% in 2008. It remained around the 2008 level in 2016.

161. Gatwick is operating reasonably close to its ATM capacity. This limits the growth potential for freight through additional passenger or freighter flights.

162. As of 2017, fewer than 10% of existing ATMs at Gatwick are used by widebody aircraft[63]. Thus, there is significant scope for Gatwick to increase its cargo capacity by increasing the share of widebody aircraft using the airport. To some extent this will happen naturally as passenger demand increases. Widebody share has risen in every year since 2014 (from 7.3% in 2014, to 9.4% in 2017[63]).

163. On routes where widebody capacity is in place at Gatwick, there is every indication that demand for freight is at least as strong as its closest competitor Heathrow; Gatwick Airport cites examples such as Emirates, Continental and Delta achieving *higher* freight tonnage per ATM at Gatwick than at Heathrow[64].

164. Freight volumes at Gatwick have grown strongly in 2016 and 2017 so far. This is driven by the rapid expansion of long haul routes by a number of airlines, including Norwegian, British Airways, Cathay Pacific and WestJet. We would expect this trend to continue as more slots are deployed for long haul flights, increasing bellyhold freight capacity.

[61] (East Midlands Airport, 2015, p. 111)
[62] (Stansted Airport, 2015b, p. 6)
[63] (OAG)
[64] (Gatwick Airport, 2015)

4.11. Manston

Historic Freight

165. Freight at Manston has accounted for an average of 0.8% of the UK total in the period 1990-2014 (prior to closure). Its peak share of the UK market occurred in 2003, when it reached 2.0%.

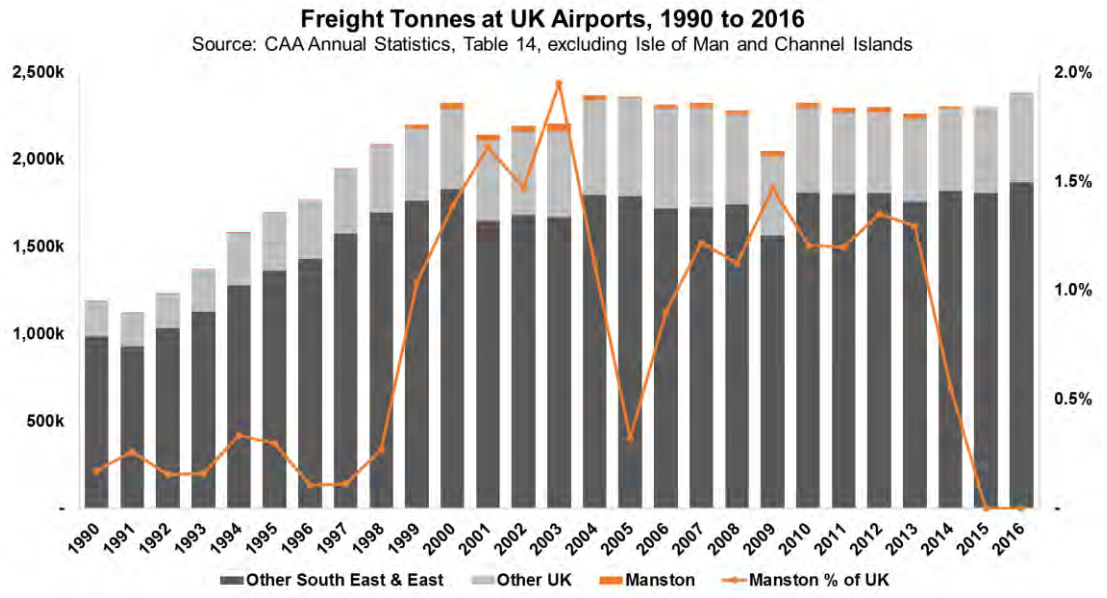

Figure 15 – Timeseries of UK freight, including that handled at Manston

166. The total number of cargo air transport movements at Manston averaged ca. 550 per year in the period 2000-14. This is equivalent to less than one aircraft rotation per day on average (peak year in 2003 was 1.5 rotations per day). Manston's share of UK cargo ATMs briefly peaked at 1.5% in 2003. In every year since 2005, Manston cargo ATMs have accounted for less than 1% of the UK total.

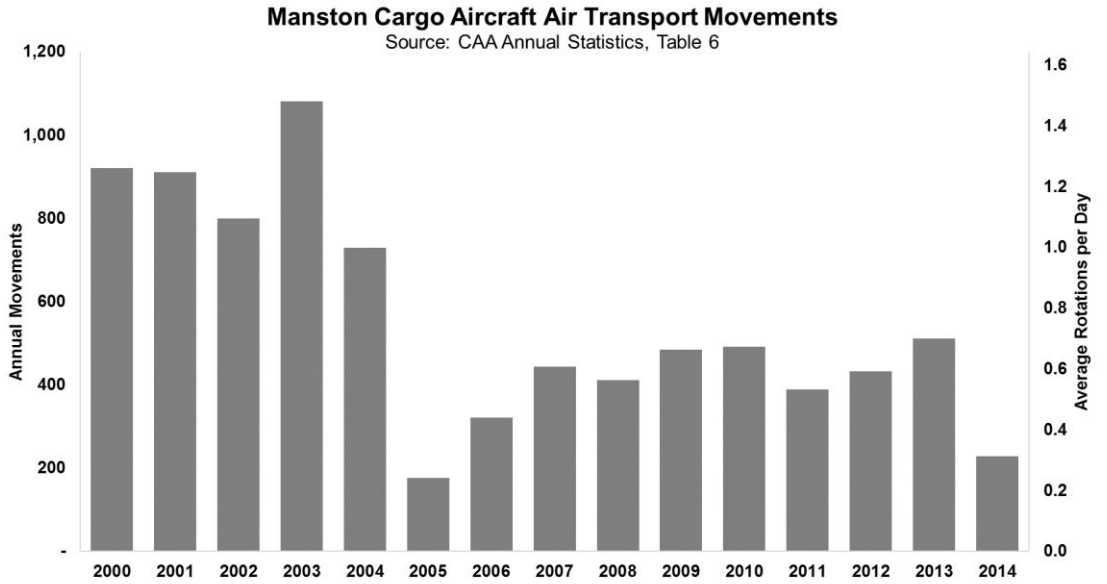

Figure 16 – Manston cargo-only aircraft movements

167. The hypothesis has been put forward that Manston previously was unsuccessful as it lacked the infrastructure to handle additional flights. However, with a peak of 1.5 rotations[65] per day, it seems certain that higher numbers of flights per day could have been handled if market demand was there.

168. As noted previously, the previous owners invested £7m on new aprons and taxiways, increasing the freight capacity to 200,000 tonnes[66]

Competitiveness of a Reopened Manston

169. Were Manston airport to be re-opened at some point in the future, it would likely be competing directly with East Midlands and Stansted for cargo-only flights. The outlook for the airport in this scenario is poor.

170. Firstly, the location of Manston on a peninsula physically limits the size of its catchment area.

- Within a 3 hour drive, only the South East & East of England, and a small part of the Midlands, are accessible.
- In comparison, most of England and Wales can be accessed within 3 hours of East Midlands Airport, while Manston's catchment is essentially a sub-set of the Stansted catchment.
- The case studies of Liege and Leipzig (Section 12), as well as the strong growth of freight at East Midlands, indicate the importance of a large catchment area and central location. While these airports attract cargo from an extensive area, they also benefit from strong cargo demand within their immediate catchment.

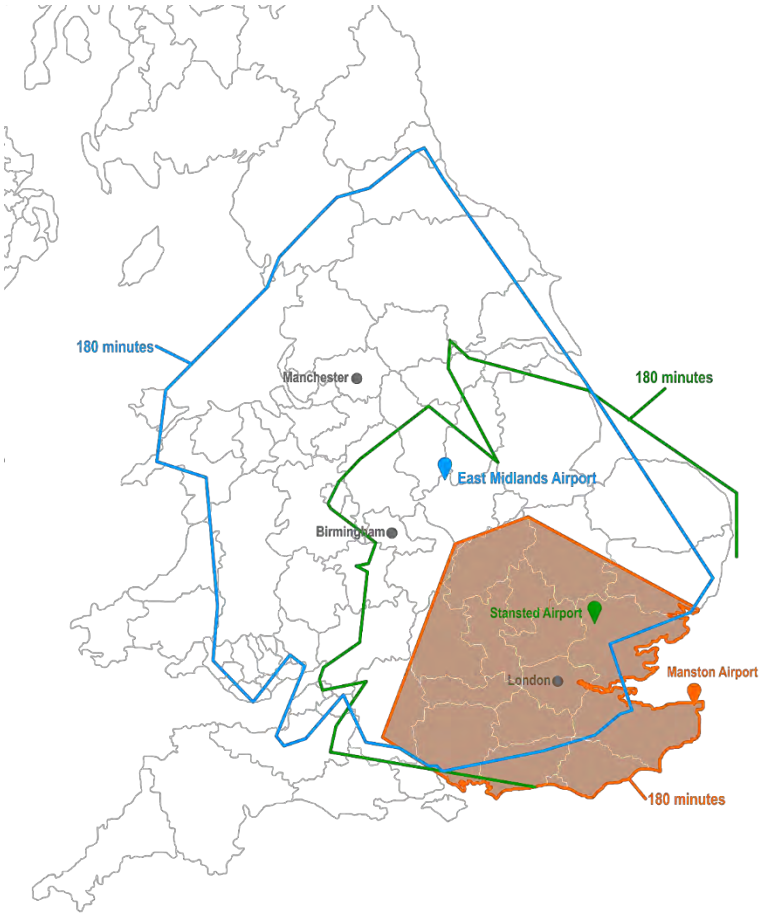

Figure 17 – 3-hr catchment region of Manston in comparison with those of East Midlands and Stansted
Source: Altitude analysis, Google Maps (truck speed set at 55 miles per hour)

[65] A rotation is an aircraft turnaround at an airport, representing an arrival and a departure flight.
[66] (Wiggins Group plc, 2002, p. 16)

171. In addition to Manston's poor geographic location, it is also relatively far from important transport infrastructure. The motorway network is not especially close (the airport is ca. 22 miles from the M2 and 38 miles from the M20). Successful freight airports in the UK and Europe are extremely close to the national motorway network, helping to minimise the shipper/consignee to airport transport time.

172. Secondly, there is consensus in the air freight industry that the ability to handle night flights is critical for many types of air freight (in particular for express freight, but also for other types of freight).

- East Midlands and Stansted are both able to accommodate flights 24 hours per day.
- Both Liege Airport and Leipzig Airport cite the ability to accept night flights, and the support of local government in doing so, as factors in their success (see appendices, Section 12).

173. It is unclear (in the light of historic restrictions) whether or not night flights would be allowed at Manston Airport were it to reopen. However, it does seem clear that restrictions on night flying would have severe limitations for air freight potential at the airport. Observations at other freight hubs such as East Midlands, a significant volume of freight activity takes place during night time hours, including onward (or inward) road haulage taking advantage of road capacity overnight to move freight outside of peak traffic periods. Manston's local road network is not ideally placed to accommodate large volumes of HGV traffic arriving in quiet hours

174. Finally, as noted previously, there is a clear move towards market consolidation of freight activity at a few large airports. In order to be successful, Manston would need to reverse this well-established trend. It is not apparent how this could be achieved, even with markedly lower airport charges (which in turn would compromise the financial viability of the airport).

175. Therefore, even if there was a future need for additional airport capacity for freighter activity, Manston is poorly placed to service such a requirement and better existing operational alternatives are available.

5. Current Freight Demand vs Supply at UK Airports

5.1. Context

176. Azimuth asserts that UK air freight has been constrained since 2000[67]. Furthermore, Azimuth concludes that shortage of airport capacity is leading to more trucking of freight ("*flying freight from Manston, negating the need to truck, to and from European airports for air transportation*[68]").

177. We consider that these conclusions are highly simplistic. They do not recognise the operational needs and behaviours that underpin the freight market:

- As discussed below, we agree there is a shortage of dedicated freighter capacity at the UK's main passenger hub airport (Heathrow). However, freighter capacity is available at other airports. For example, both Stansted and East Midlands have expanded freighter activity significantly since 2000, and continue to have spare capacity.
- Therefore, any shortage of air freight capacity in the UK relates specifically to Heathrow capacity rather than a more general lack of capacity.
- Trucking is a highly integrated component of the air freight business model, and not merely a substitute for air freighter flights when airport capacity is constrained. The increasing use of truck feeder services (see Figure 32) is due to cost efficiencies and is not restricted to the UK. We see no evidence that the growth in trucking is primarily driven by lack of Heathrow capacity for air freighter flights.
- In any case, even if there were significant levels of trucking caused by constraints at Heathrow, this would only be reduced by the provision of more Heathrow runway capacity. As there is already spare capacity at other airports in the UK, provision of further capacity would not make any significant difference to trucking levels. There is no reason why economic decisions to truck freight rather than fly would change in the absence of new Heathrow capacity.

178. In the remainder of this section of our report, we provide an analysis of current UK airport capacity for freight, and whether this has constrained demand. In the following section (Section 6), we investigate the outlook for future airport capacity for freight at UK airports.

5.2. Literature Review

179. As noted above (see paragraph 176), Azimuth asserts that UK air freight has been constrained since 2000. Its case for Manston relies heavily on this assertion, yet no evidentially supported and reasoned justification is provided. Three references are provided.

180. The first document cited is the Air Transport White Paper from the Department for Transport[69]. We have not found references to air freight being constrained in this document, which in any case dates from 2003.

181. The second document is by Oxford Economics[70]. This report is a technical note which examines how increased airport capacity (or conversely the lack of additional new capacity) could affect air freight and the economy. The study was undertaken for Transport for London / Mayor of London, promoters of the new Thames Estuary hub airport scheme.

[67] (Azimuth Associates, 2017 a, p. 8)
[68] (Azimuth Associates, 2017 a, p. 19)
[69] (Department for Transport, 2003)
[70] (Oxford Economics, 2013)

182. References in the Oxford Economics report to existing capacity constraints focus on Heathrow, and its forward-looking analysis is primarily in the context of the potential benefits of the proposed new hub airport. For example, on Page 8:

> *"Capacity constraints at Heathrow, however, set in as early as 2005 and future cargo growth is threatened by the inability of London area airports to keep up with demand. A new hub airport for London, with enough capacity to meet demand for the next 30 to 40 years, would be particularly important for the growth of bellyhold cargo."*

183. The Oxford Economics report also notes the divergent trends between short haul and long haul cargo in the UK. On Page 14, the factors that could explain the decline in short haul air cargo are explored.

> *"In all likelihood, short-haul cargo may have fallen due to both capacity constraints at Heathrow and freight forwarders substituting road or rail transport for short-haul destinations. In addition, the cost of air cargo is higher on short-haul routes because a larger portion of the trip is spent on the ground and more time in the air is spent climbing and descending. Lastly, the lack of widebody planes on short-haul journeys make bellyhold cargo less attractive at those distances to begin with."*

184. On Page 16, the Oxford Economics report goes on to state:

> *"The fact that volumes have fallen so dramatically could be due to both capacity constraints at Heathrow and also to the substitution of air cargo on short-haul distances with rail or truck transport. Which phenomenon is more important? The opening of the Channel Tunnel in 1994 between the UK and France has made it faster and cheaper to transport cargo by road between continental Europe and the UK. In terms of truck transport, it is estimated that 97,000 tonnes of air freight actually crosses the English Channel by truck per year, as compared to 87,000 tonnes flown on bellyhold. In fact, the volume of short-haul cargo peaked around the time the Channel Tunnel opened and has declined ever since. Therefore, this hints that much of the decrease in short-haul volumes may be due to the relatively lower cost of truck transport to continental Europe rather than capacity constraints at London area airports. In other words, the generalised cost of surface transport (relative to air transport) has decreased, spurring a modal shift on short-haul routes."*

185. The final reference is to rankings of European Union countries for the quality of air transport infrastructure[71]. This appears to relate to overall air transport infrastructure, and is not specific to freight. In any case, the UK is ranked reasonably highly in the most recent results (#7 out of 28 EU countries for 2015/16).

186. To summarise, the three studies quoted by Azimuth do not provide any meaningful support for the assertion that UK airport capacity for freight has been constrained for many years. The Oxford Economics study identifies constraints at Heathrow and hub capacity specifically but also highlights other factors for recent freight trends. The 2003 Air Transport White Paper and the European Union infrastructure ranking study do not address the issue directly.

187. In the next subsection of our report, we show that there is no overall shortage in UK airport capacity for dedicated freighter operations (the type of capacity a reopened Manston would potentially provide as identified by RSP).

188. In paragraph 235, as part of our review of the Azimuth forecasts for Manston, we highlight how results from a York Aviation study have been applied incorrectly.

[71] https://ec.europa.eu/transport/facts-fundings/scoreboard/compare/investments-infrastructure/quality-airports-infrastructure_en#2015-2016

5.3. Analysis of Current Freight Demand vs Supply at UK Airports

189. There is no overall shortage in UK airport capacity for dedicated freighter operations. Both of the two largest airports, East Midlands and Stansted, can accommodate more freighter services than currently operating (sufficient to meet demand). Many other airports in the UK have spare capacity for freighter services.

190. In this sub-section of our report, we examine the current freight capacity at UK airports. In the following section (Section 6), we analyse future UK airport freight capacity.

East Midlands Airport

191. East Midlands Airport does not require slot coordination[72]. It is designated as a Level 2 airport, with the UK slot coordinator (Airport Coordination Limited) only providing data collection services[73]. IATA[74] defines a Level 2 airport as one "*where there is potential for congestion during some periods of the day, week or season, which can be resolved by schedule adjustments mutually agreed between the airlines and facilitator*". In other words, the airport cannot be considered as facing significant capacity constraints.

192. The airport does not appear to have any limit on the number of overnight ATMs it can operate. Note that it *does* have limits on the amount of noise any given aircraft can make at night. There is a limit on the land area that is exposed to noise above a certain threshold, as well as a rule preventing operation of the noisiest aircraft types between 23:00 and 07:00 (as per many other UK airports including Heathrow, Gatwick, Stansted).

193. The airport appears to have established a common position with the local authority which supports operation of the airport. For example:

> *"The Council will provide for the operational growth of East Midlands Airport whilst having regard to its impact on local communities and the wider environment…. Noise-sensitive development, particularly housing, will be resisted where it can be demonstrated that the noise levels associated with the airport would be detrimental to the occupiers or users of any such development"*[75]

194. The airport's runway[76] is long enough to handle the typical large cargo aircraft flying today, including the B747-400, B747-8F and the AN-225. It can also handle the A380, which could be relevant if older examples of that model are converted to a cargo aircraft in future[77].

Stansted Airport

195. Stansted is designated as a Level 3 coordinated airport. A process of slot allocation is required whereby it is necessary for all airlines to have a slot allocated by a coordinator. Therefore, Stansted is facing some capacity constraints in peak periods.

196. Nevertheless, there remains significant capacity available at most times of day, as shown below for the Summer 2017 scheduling season.

[72] Allocation of airport "slots" to airlines by an independent body. A slot provides permission for an airline to arrive or depart an airport for a specific time at a specific weekday and for a specific period applied for.
[73] https://www.acl-uk.org/faqs/
[74] (IATA, 2017c, p. 22)
[75] (East Midlands Airport, 2015, p. 69)
[76] East Midlands Airport runway length is 2,893m, compared to ca. 2,750m for Manston Airport.
[77] (East Midlands Airport, 2015, p. 73)

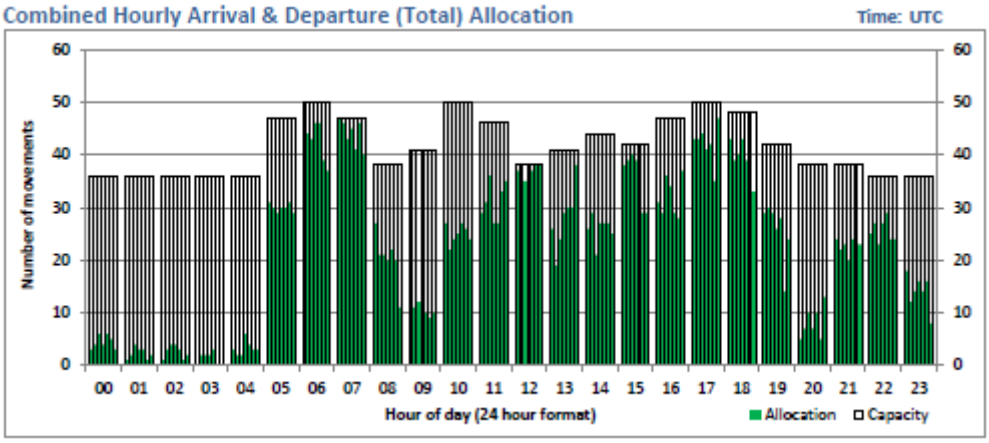

Figure 18 - Peak Week, Hourly Runway Allocation, Stansted Airport, Summer 2017. Source Airport Coordination Limited[78]

197. The number of cargo ATMs grew by ca. 13% in 2016 (source: Altitude analysis of CAA data), indicating that capacity constraints are not severe for freighters.

198. The airport is more tightly regulated than East Midlands Airport. Stansted's annual number of ATMs is limited. Currently, these limits stand at 243,500 passenger aircraft ATMs and 20,500 cargo aircraft ATMs[79]. These limits compare to 2016 movements of ca. 153,000 passenger ATMs and ca. 11,000 cargo ATMs. The airport considers the ultimate capacity of the runway to be 285,000 ATMs[80].

199. Separately, there is a quota on the overall number of ATMs allowed between the hours of 23:30-06:00 (7,000 ATMs in the summer season and 5,000 in the winter season). In 2013, the airport reports there were ca. 9,300 night ATMs in total, and that cargo aircraft ATMs take up a "*sizeable proportion*" of the quota[80].

Heathrow Airport

200. The UK does lack available dedicated freighter capacity at its only major passenger hub airport, Heathrow.

- Heathrow is also the UK's largest freight airport with ca. 65% of the UK's overall throughput (see paragraph 109).

201. Freight forwarder activity has consolidated around Heathrow on the strength of its extensive network of long haul passenger services. These services, typically using widebody aircraft, provide substantial bellyhold cargo capacity to a wide range of destinations.

202. At Heathrow, only ca. 5% of freight is carried on dedicated freighters (see Figure 4).

- If more capacity for freighter services existed at Heathrow, we would anticipate much greater levels of dedicated freighter activity.
- In the absence of operating constraints, major passenger hubs tend to also play a role as key dedicated freighter hubs (e.g. Frankfurt). Freighter services complement the connectivity provided by passenger flights, while the cargo industry benefits from economies of scale and scope from the consolidation of activity.

203. Where dedicated freighter flights cannot be accommodated at Heathrow (due to capacity constraints), freight customers have the following choices:

[78] (Airport Coordination Limited, 2017, p. 11)
[79] (Stansted Airport, 2015a, p. 9)
[80] (Stansted Airport, 2015b, p. 29)

- Operate freighter flights (or use existing freighter flights) from other UK airports where capacity is available (e.g. Stansted, East Midlands).
- Transport freight in the bellyhold of passenger flights from Heathrow (or other UK airports).
- Transport freight to a major European air freight hub (e.g. Liege, Frankfurt), typically by truck.
- Use surface modes of transport (road, rail, water) for the whole journey (note that this is not a realistic option for most potential air freight consignments due to the distances involved and/or urgency of shipment).

204. The capacity constraints at Heathrow also limit the number of passenger flights that can be operated. This in turn will have an impact on the bellyhold capacity that is available. However, it is not clear whether this is a substantial issue in relation to potential freight volumes.

- Heathrow continues to dominate the long haul passenger segment (72% of UK passengers in 2016[81]).
- Where demand is available, it is typically more economic to use constrained Heathrow slots for long haul flights (compared to short haul). Heathrow's share of overall UK long haul passengers has actually grown since 2002 (from 70% to 72% in 2016). In comparison, its share of short haul passengers has dropped from 24% to 17%. This indicates that short haul services are being squeezed out of Heathrow to accommodate long haul growth (due to current capacity constraints)[82].
- Air freight is focussed on long haul markets. Less than 10% of Heathrow freight in 2016 was to/from UK and Europe[83], despite accounting for 62% of passenger flights[84].
- Therefore, the extent to which constraints on Heathrow passenger flights are limiting bellyhold freight at Heathrow is difficult to establish from current publicly reported information.

205. Note that AviaSolutions[85] has undertaken analysis that suggests that average cargo loads at Heathrow are markedly lower than average cargo capacity.

> *"At Heathrow with a significant number of wide-bodied aircraft (35%), we estimate the average belly-hold freight capacity to be 7 tonnes per ATM at LHR (2015), significantly higher than the actual freight per ATM of 3 tonnes".*

206. This indicates there is excess bellyhold capacity at Heathrow. However, capacity may nevertheless be insufficient for demand on certain routes, directions of travel or at particular times of year, etc.

Other Airports

207. In addition to spare capacity at East Midlands and Stansted, other South East and regional airports could also accommodate significant freight volumes if the demand was there. This is true for both freight on dedicated freighter aircraft or bellyhold freight.

208. Bournemouth Airport[86] highlights that:

> *"With ample room to grow, our thriving cargo facility is expanding to meet the demands of importers and exporters from across the UK. Accommodating a huge variety of freight and passenger aircraft, Bournemouth supports cargo logistics round the clock, with the following benefits: 2271m runway, excellent good weather record, congestion free (with*

[81] Source CAA airport statistics, Altitude calculations
[82] Source CAA airport statistics, Altitude calculations.
[83] (Heathrow Airport, 2017, p. 5)
[84] CAA airport statistics
[85] (AviaSolutions, 2016, p. 31)
[86] www.bournemouthairport.com/about-us/doing-business-together/cargo/

no slot restrictions), experienced in handling many cargo aircraft including the AN-124 Ruslan, 'Freighter friendly' airport management."

209. Bournemouth Airport has some disadvantages due to its coastal location and distance from the motorway network. However, similar issues apply to Manston (with its location arguably even more compromised than Bournemouth, given its position on a peninsula). From the South West, West London and the Midlands, Bournemouth is generally more accessible than Manston[87].

210. Outside the South East, Doncaster Sheffield Airport has a central UK location. It markets itself as "*the UK's Freighter Gateway*[88]":

"At the centre of the UK with easy access to the M18, M1, A1M, M62 and M180 Doncaster- Sheffield is the ideal airport for freighter operations. DSA is justifiably gaining the reputation as the most effective freighter airport in the UK. The attributes that are delivering this include…. exceptional performance record, 24 hour operation, runway 2,893m x 60m, CAT III, Class "D" controlled airspace, no slot constraints/congestion, Competitive jet fuel prices, short taxiing distances, excellent cargo reception and handling, inclusive pricing, NEQ capacity up to 9,300kg Hotac."

211. Both of these airports are currently operational, and benefit from a large site with a long runway. Doncaster Sheffield operates 24 hours a day, whilst night flights at Bournemouth can be arranged with prior notice.

212. Finally, there are a range of other UK airports (currently in use) that previously carried significant volumes of freight, and would be able to do so again if demand returned.

- Prestwick handled ca. 42,000 tonnes of freight in 2001, compared to only ca. 11,000 in 2016. We are not aware of any reasons why Prestwick would be unable to handle similar or higher volumes in the future (assuming demand existed).
- Similarly, Liverpool had negligible freight throughput in 2016 but has handled as high as ca. 30,000 tonnes in 1995. Again, we would assume the airport has the capacity to accommodate similar or higher volumes in the future.
- Gatwick bellyhold freight volumes have been as high as ca. 290,000 tonnes in the past, compared to ca. 80,000 tonnes in 2016. As more long haul routes are added at the airport, freight throughput is once again growing. In the 12 months ending September 2017, Gatwick added ca. 15,000 tonnes of cargo (+20.3%)[89].

213. Taking all UK airports combined, the difference between peak year and 2016 freight tonnes was ca. 225,000 tonnes (freight on dedicated freighters only)[90].

- This excludes airports which have closed (e.g. Manston, Plymouth), where commercial activities have been downsized (e.g. Blackpool, Coventry) and London airports (where pressure on slots may reduce the ability to recover to historic volumes should dedicated freight demand return).

[87] For example, the following distances have been sourced from Google Maps for the typical fastest routing. Bournemouth Airport to Hounslow: 90 miles, Manston Airport to Hounslow: 103 miles. Bournemouth Airport to Bristol: 70 miles, Manston Airport to Bristol: 201 miles. Bournemouth Airport to Birmingham: 167 miles, Manston Airport to Birmingham: 197 miles.
[88] www.therouteshop.com/profiles/doncaster-sheffield-airport/
[89] http://www.mediacentre.gatwickairport.com/press-releases/2017/booming-global-connections-drive-gatwick-to-record-september.aspx
[90] CAA airport statistics.

5.4. Conclusion

214. We conclude that there is no overall shortage of freight capacity at UK airports, whether for dedicated freighters or bellyhold freight.

- The two largest dedicated freight airports have spare capacity.
- There is significant excess capacity at a range of other UK airports that are currently in use. These airports have seen demand reduce due to trends towards consolidation at major airports and switch to trucking.

215. We acknowledge that there is a shortage of freighter capacity at Heathrow. Slot constraints could also be having some impact on the bellyhold market, although the impact may be relatively moderate.

216. However, it is important not to conflate Heathrow constraints with the wider capacity situation. We see no evidence to support the assertion that there is a long-standing shortage of overall UK airport capacity for freight. Indeed, the evidence is to the contrary, given the reductions in freight throughput experienced by many UK airports.

217. There would be substantial benefits to adding freight capacity at Heathrow, the UK's only major passenger hub airport. It can also be argued that freight capacity at a proposed new hub airport in the Thames Estuary would also generate strong benefits if it could be delivered. This option, though, was emphatically ruled out by the Airports Commission.

218. Therefore, it is difficult to see what benefit would accrue from adding freight capacity at non-hub airports, as there is already sufficient supply at advantageous geographic locations. In particular, freight volume at Manston has never exceeded ca. 43,000 tonnes in any single year. This is despite the supposed shortage of UK airport freight capacity and despite a previous owner investing to increase Manston's capacity to 200,000 tonnes per annum.

219. From a freight perspective, we do not consider it meaningful to focus on the South East alone as a separate market. Freight is less time sensitive than passengers. Therefore, for major airports, the freight catchment area is typically many times larger than the passenger catchment area. This is one of the key factors that leads to the high degree of market consolidation seen for air freight.

- East Midlands serves the whole of England and Wales, exploiting its central location in the UK.
- Similarly, the extensive network of long haul flights from Heathrow and its hub operation means it attracts freight from the whole of Great Britain.
- For Europe's major freight hubs, the catchment can be even wider. For example, Leipzig Airport considers its catchment covers a 10-hour trucking radius (see Figure 38), while Liege sees its catchment as all areas within access of a full day trucking (see Figure 39). The catchment areas for these two airports are particularly wide, as a result of their wide range of air services.

220. Mainly due to the hub strength of Heathrow, 78% of 2016 UK air freight was flown from airports in the South East & East of England. Heathrow and Stansted alone achieved 65% and 7% market share respectively.

- Much of the UK's high value manufacturing is located outside London and the South East[91]. In Q1 2015, only 15% of UK manufacturing jobs were located in London and South East[92].
- Clearly, a substantial proportion of air freight using Heathrow in particular will be travelling to/from other areas of the UK.

221. More important is the type of airport capacity. Freight has consolidated around the three major air freight airports (Heathrow for bellyhold, while freighter activity is concentrated on East Midlands, Stansted and

[91] (Heathrow Airport, 2014, p. 19)
[92] (House of Commons Library, 2015, p. 7)

Heathrow). This enables the air freight industry to benefit from the economies of scale and scope flowing from consolidation. These cost efficiency pressures are unlikely to reverse.

6. UK Capacity Outlook

6.1. Context

222. In the previous section, we demonstrated that there is currently no overall shortage of freight capacity at UK airports.

223. In this section of the report, we analyse the scope for developing freight capacity at existing airports, in order to meet future demand.

- We focus on the published expansion plans of the three major freight airports.
- We consider the spot years of 2029 (prior to assumed new runway opening at Heathrow in 2030), 2040 (medium term planning horizon) and 2050 (long term planning horizon).

224. We also review comments in the Azimuth report in relation to the future role of individual airports.

6.2. Review of Individual South East Airports

Heathrow Airport

225. In its final report, the Airports Commission[93] "*unanimously concluded that the proposal for a new Northwest Runway at Heathrow Airport… presents the strongest case*." Heathrow is working on a timeline of a 2025 opening[94]. However, we consider that an assumed opening date of 2030 is more prudent, given the complexity of the planning and construction process. This aligns with the Airports Commission's stated need for one additional runway to be in operation in the South East of England by 2030.

226. Heathrow is developing its infrastructure to increase its cargo handling capability. The airport states:

> *"We are developing proposals for a complete overhaul of our cargo facilities as part of our expansion plans for an additional runway. Redevelopment of the airfield will provide an opportunity for the first time to expand the site and create new efficiencies*[95]

227. The airport has commented on the factors that currently reduce its competitiveness for cargo, and has developed a strategy to address these issues:

> *"Our customers have told us about the bottlenecks caused by some of the infrastructure, inefficient facilities and processes that are slower and more arduous than those of our European competitors. Our stakeholders rate us as poor for our facilities and value for money"*[96]

228. In its 2016 document 'Heathrow Cargo Strategy', Heathrow states:

> *"Our cargo strategy will lift freight volumes to 3 million tonnes a year by 2040"*[97]

229. Based on UK CAA data for 2016, this represents CAGR of 2.7% over 2016-40. Documentation from the airport indicates that growth is likely to come from additional bellyhold capacity rather than freighter ATMs:

> *"This will provide capacity at Heathrow for freight and cargo to be carried in the belly hold of passenger flights"*[98]

[93] (Airports Commission, 2015, p. 9)
[94] https://www.heathrowexpansion.com/local-community/important-dates-information/ (retrieved 19th October 2017).
[95] (Heathrow Airport, 2014, p. 20)
[96] (Heathrow Airport, 2016b, p. 2)
[97] (Heathrow Airport, 2016b, p. 2)
[98] (Heathrow Airport, 2014, p. 20)

230. Azimuth[99] discusses Heathrow in its first report.

231. Azimuth states that "*Indeed, more than 99% of air freight at Heathrow is carried in the bellyhold of passenger aircraft*". This is incorrect. Since 2010, the proportion of bellyhold freight at Heathrow has consistently been around 95%. A CAA report seems to be incorrectly attributed by Azimuth as a source for this figure.

232. It is also suggested that:

> *"The addition of a third runway at Heathrow is unlikely to resolve the capacity issues for dedicated freighters. Since Heathrow's passenger market has been constrained for some years, it is likely that the new runway will be used to meet this pent-up demand".*

- This is a pessimistic viewpoint. Heathrow's runway capacity in 2016 was 99% utilised[100]. With ca. 50% additional capacity on opening of a third runway, we would envisage some opportunities for additional freighter flights. Despite severe slot constraints, the number of freighter movements at Heathrow has remained stable since 2010[101].
- Therefore, there is some prospect of more freighter traffic at Heathrow after the opening of the third runway. Nevertheless, we do not dispute that there will be ongoing constraints on freighter activity at Heathrow, especially in the very long term.
- Of course, the major expansion of passenger flights following the new runway opening will lead to a substantive uplift in bellyhold capacity. As previously discussed, for most types of general freight, there is no inherent market preference for bellyhold or freighter carriage (with cost often the key deciding factor, which generally favours bellyhold). Therefore, the new Heathrow runway will add a significant amount of new cargo capacity into the UK market.

233. The Azimuth report also speculates that:

> *"Should Low Cost Carriers, who do not carry belly-freight for operational reasons, fill much of the additional runway capacity, Heathrow's freight handling, in terms of tonnes per year, is unlikely to increase substantially."*

- We view the references to low cost carriers as not relevant. Even if low cost carriers switch to Heathrow (which may depend on the level of airport charges after the new runway opens), this will have limited impact on bellyhold capacity.
- The full service short haul carriers operating at Heathrow currently contribute very little in terms of freight tonnage. Less than 10% of Heathrow freight is to/from UK and Europe[102], compared to 62% of passenger flights[103].
- There are several factors that cause this. In general, air freight is less competitive than trucking for shorter distances. Furthermore, the cargo carrying capacity of short haul aircraft (typically narrowbody types) is limited. Finally, air freight that is flying short distances tends to be express cargo, which is more likely to use dedicated freighter aircraft.
- Therefore, whether low cost carriers operate a significant proportion of Heathrow short haul services in the future will not have a significant impact on bellyhold availability. Similarly for long haul low cost, as these airlines typically carry bellyhold cargo (e.g. Norwegian).

[99] (Azimuth Associates, 2017 a, pp. 15-16)
[100] 474,963 ATMs compared to cap of 480,000 (source CAA airport statistics).
[101] Cargo ATMS at Heathrow since 2010 were 2010: 2,414; 2011: 2,456; 2012: 2,378; 2013: 2,347; 2014: 2,332; 2015: 2,388; 2016: 2,452; (source: CAA airport statistics).
[102] (Heathrow Airport, 2017, p. 5)
[103] In 2016 Heathrow handled 477,614 aircraft movements. 295,605 of these flew Domestic or European routes [source: CAA airport statistics, Altitude analysis].

234. Azimuth also compares Heathrow processing times unfavourably to Manston Airport. We noted above (see paragraph 227) that Heathrow has a strategy to improve its process efficiency. However, the broader point is that this is not a meaningful comparison.

- Using a dedicated freighter at an unconstrained airport should nearly always be the fastest way of transporting air freight, assuming equivalent trucking time to reach the airport[104].
- However, for the majority of general cargo, the time-sensitivity is in the order of days rather than hours. A bellyhold freight consignment through a major hub will typically be much cheaper. Freight can be consolidated with other freight consignments. The incremental cost of carriage for bellyhold is relatively low, meaning that rates charged are typically much more competitive than for freighters – especially if there is not enough volume to fully utilise freighter capacity.

235. Finally, Azimuth[105] refers to a York Aviation study, in the context of Heathrow:

> *"York Aviation figures show, there will be a shortfall of slots for dedicated freighters, likely to be in the region of 45,000 by 2050".*

- This is an incorrect reading of the York report, which York Aviation rebut in detail in its November 2017 report commissioned by SHP[106].

236. In summary, the Azimuth analysis substantially underplays the potential for freight growth at Heathrow.

Stansted Airport

237. The airport has outlined infrastructure improvements to facilitate cargo traffic growth, including the potential for more cargo handling facilities to be built, and increasing the number of stands for cargo aircraft from 16 to 24[107].

238. Stansted Airport also published a 'Sustainable Development Plan' document in 2015 detailing the future demand it expects to handle:

> *"There is potential for cargo goods volume at the airport to increase on the single runway, potentially doubling the current throughput of cargo on dedicated aircraft to around 400,000 tonnes per annum….. Further growth can be expected from belly hold cargo as the range of airlines and destinations operating from the airport increases. The current modest amount carried in the belly hold of passenger aircraft could increase to around 60,000 tonnes a year"*[108]
>
> *"There is potential that cargo movements could rise to make full use of the current movement limit, however this needs to be considered against growth in passenger movements and the night quota. For planning purposes we have assumed that the number of cargo movements will be in the range of 15,000 and 18,000 per annum…. The majority of the cargo movements are expected to operate during the late evening and at night. Cargo aircraft will continue to operate during the off-peak periods between passenger movement peaks"* [109]

239. Note, the document is vague regarding the timescales relating to its forecast; it never states the year in which it expects demand to reach the forecast level. An assumption that the figure of 460,000 tonnes per annum is achievable by 2040 results in a CAGR of 2.7%[110].

[104] Although for most parts of the UK, trucking time to Heathrow will be significantly shorter than to Manston.
[105] (Azimuth Associates, 2017 a, p. 16)
[106] (York Aviation, 2017)
[107] (Stansted Airport, 2015b, p. 36)
[108] (Stansted Airport, 2015b, p. 26)
[109] (Stansted Airport, 2015b, p. 29)
[110] We believe this is a reasonable assumption, as both Stansted and East Midlands forecast are owned by MAG; MAG produced both forecast documents in the same year and using the same formatting and template; 2040 is the stated forecast year for East Midlands.

240. A plan for 15,000-18,000 cargo ATMs, when there is currently a limit of 12,000 overnight ATMs in total, possibly indicates growth of general cargo is expected.

241. Azimuth[111] argues that freighter services at Stansted will be forced out by passenger services.

> *"However, the airport is under pressure from Ryanair to increase the number of passenger flights. Ryanair is the dominant carrier at Stansted Airport and, since the LCC model is based on fast turnarounds, the airline will not tolerate interference from cargo handling. Ryanair is increasing their offering to more distant destinations including Turkey, North Africa, Cyprus and the Middle East. For the airline to maintain four rotations per day to maximise the profitability of each aircraft, late evening and night time slots will be required. Freight carriers have traditionally used these night slots."*

242. Azimuth continues:

> *"Since the airport also has a limit on total movements, this may mean Stansted has to choose between increasing passenger movements or retaining its freight. In this case, it seems likely that Stansted's management will preference passenger movements."*

243. There is no foundation for a number of the points raised above. Taking the various points in turn:

- No supporting evidence is provided for the statement that Ryanair is applying pressure on the airport to increase passenger flights (especially the implication that this would be at the expense of cargo flights). The Summer 2017 peak week runway profile (Figure 18) clearly indicates significant capacity for Ryanair to expand operations.
- We do not see any reason why handling freight from dedicated freighters would have any impact on the turnaround time of Ryanair aircraft.
- Azimuth appears to have limited understanding of the low cost carrier sector. We estimate that Ryanair averaged less than 2.5 rotations per aircraft per day across its network in FY17 (based on an analysis of its financial accounts).
- Ryanair operate from airports with night curfews or with night restrictions. Across 2017, an analysis of OAG schedule data for Stansted suggests that less than 3% of Ryanair flights operate in the night time period. Stansted Airport expects that cargo aircraft will continue to operate during the off-peak periods between passenger movement peaks (see paragraph 238).
- Stansted Airport has a separate movement cap for cargo and passenger ATMs. There is also an overall ATM cap[112], which is the sum of the separate passenger and cargo ATM caps. Therefore, the suggestion that Stansted will need to prioritise passenger flights over cargo flights is misplaced.
- Finally, no acknowledgement seems to have been made by Azimuth that Stansted Airport has stated that it is planning to grow freight tonnage alongside developing the passenger business (see paragraph 238).

Gatwick Airport

244. As discussed in paragraph 212, Gatwick has previously carried bellyhold volumes of ca. 290,000 tonnes (ca. 210,000 higher than the 2016 outturn). Gatwick had lost freight volumes as traffic mix has changed, in particular following the loss of long haul services after changes to traffic distribution rules in 2008.

245. Freight volumes have been growing rapidly since 2015, helped by the recent expansion of long haul services (many by low cost carriers). As more long haul services are added at the airport, we would expect continued growth.

[111] (Azimuth Associates, 2017 a, pp. 14-15)

[112] www.acl-uk.org/wp-content/uploads/2017/07/STN-Local-Rule-4-1.pdf . Note that the airport also has an overall movement cap, which comprises of passenger ATMs + cargo ATMs + 10,000 other movements.

246. Azimuth[113] only comments briefly on Gatwick:

- "*It has increased its annual tonnage from only 3,000 in 2014 to 73,000 tonnes in 2015*." This is a somewhat surprising statement. Growth of this scale would merit more than a passing mention. However, the true freight tonnage in 2014 was ca. 89,000 tonnes, not 3,000 tonnes (source: CAA airport statistics).
- "*Gatwick is not a serious competitor in the freight market*." We note that current freight throughput (year ending September 2017) was almost 90,000 tonnes, more than double the peak annual value achieved by Manston in its entire existence. It was the 5th largest UK freight airport in 2016.

Other South East Airports

247. Azimuth[114] discusses the potential of other South East airports. As noted previously, we do not believe there is requirement for new freight capacity in the South East specifically. Therefore, we only briefly comment on the potential of other airfields.

- Bournemouth is only fleetingly considered by Azimuth. As highlighted in paragraph 208, we consider there to be some potential for freight development from this airport, a view shared by the airport itself.
- We also note that in its analysis of Southampton, Azimuth wrongly states that it handled 185,000 tonnes in 2015 (the correct figure is 185,000 kilogrammes or 185 tonnes). The short runway at Southampton constrains its ability to serve the freight market.

6.3. Review of Individual Regional Airports

East Midlands Airport

248. East Midlands is the UK's leading airport for dedicated freighter activity. Its central location enables it to serve a wide catchment, encompassing England, Wales and Scotland.

249. This is acknowledged by Azimuth[115]. However, it argues that the airport is not in a good position to serve the South East.

> *"At present the airport serves a wide catchment area as shown in Figure 2. However, surface access to these geographically distant businesses, of which many are concentrated in the South East, is hampered by congestion on the UK's road network. Therefore, total time taken to deliver from origin to final destination increases, particularly around the bottlenecks on some of the major motorways. Figure 2 clearly shows the number of businesses located in the South East, within the Manston catchment area.*

250. Earlier in the report (see paragraph 170 onwards), we provide a comparative analysis of the accessibility of East Midlands versus Manston. Given the wide catchments areas for cargo (see paragraph 219), we consider that the East Midlands is very accessible for the South East market. The M25 orbital motorway can be reached in just over 1.5 hours.

251. East Midlands Airport notes that the vast majority of vehicle movements to/from the airport take place very late at night or very early in the morning (see paragraph 151). Therefore, motorway bottlenecks alluded to by Azimuth should have a limited impact, as journeys will not be taking place during peak hours. In any case, congestion on the UK motorway system will affect all UK airports (including a reopened Manston).

[113] (Azimuth Associates, 2017 a, p. 16)
[114] (Azimuth Associates, 2017 a, pp. 18-19)
[115] (Azimuth Associates, 2017 a, pp. 17-18)

252. East Midlands has a benign planning environment (see paragraph 192 onwards). Despite the relatively low level of restrictions, the airport acknowledges sensitivity to developments that will impact on night time noise:

> *"Any further consideration or development at the airport related to night flights will require the application of stringent controls over night-time noise."*[116]

253. East Midlands Airport has land available for development of additional cargo facilities in order to support growth:

> *"The DHL Hub building opened in 2000 and it was always intended that the site would be developed in phases. Land continues to available for phased development on the western side of the building"*[117]

> *"Land will be reserved for the development of an integrator hub at Cargo East on land between the Pegasus Business Park and the runway/taxiway. This will enable the development of additional apron to serve the new hub operation. The building will be of a significant scale and will provide for the sortation systems required by the integrated carriers and also landside vehicle access for vans and for HGV's"*[117]

> *"Opportunities will be identified for incremental redevelopment and improvements to the existing Transit Sheds in Cargo East. A site for new cargo development, to the east of the current Royal Mail hub, will also be reserved. These development schemes will be made on a case by case basis and in response to operators' requirements"*[118]

254. As noted in paragraph 153, a rail interchange adjacent to the airport is in development, further strengthening its market position.

255. In the 'Sustainable Development Plan' document referenced previously, East Midlands Airport also publishes a demand forecast for the airport.

256. This forecast assumes that freight at East Midlands continues to be carried on freight-only aircraft, and that the type of freight carried by integrators (primarily express) will grow faster than that carried by other types of carrier.

> *"The forecast for future cargo tonnage is for some 618,000 tonnes in 2035 and some 700,000 tonnes in 2040…. by 2040, the number of cargo movements could grow to around 42,600. This reflects the growth of the integrated carriers and that the average freight load per cargo aircraft movement is predicted to increase from 14.4 tonnes in 2012 to 17.9 tonnes at 2040"* [119]

> *"The future split of day and night movements is expected to be similar to that of today"*[120]

257. Note that the airport does not include in its forecast any significant growth of mail (as it expects "*structural changes to the mail market. This is as a result of the shift from letters to parcels*"[119]).

258. In addition to stating its forecast demand, East Midlands Airport made clear statements on its future capacity in its 'Sustainable Development Plan' document. It does not believe it will be constrained by 2040:

> *"There are therefore no plans for the development of a second runway within the planning horizon covered by this Master Plan (2040) …. The capacity of the East Midlands Airport*

[116] (East Midlands Airport, 2015, p. 69)
[117] (East Midlands Airport, 2015, p. 79)
[118] (East Midlands Airport, 2015, p. 80)
[119] (East Midlands Airport, 2015, p. 61)
[120] (East Midlands Airport, 2015, p. 111)

runway is estimated to be between 34-36 runway movements per hour. This provides the airport with sufficient runway capacity for the foreseeable future and will be more than sufficient to accommodate an airport of a scale to handle 10 million passengers and 1.2 million tonnes of cargo annually" [121]

"the Land Use Plan identifies the land, the uses and the facilities required to support the operation of an airport capable of handling 10 million passengers annually and 1.2 million tonnes of cargo"[122]

"there will need to be a minimum of seven additional cargo stands provided including the ability to regularly park aircraft up to Code F (Boeing 747-8F) size"[123]

Other Regional Airports

259. There are a range of other regional airports with spare freight capacity which could play a larger role in the future.

- Doncaster Sheffield (see paragraph 210).
- Manchester Airport is the largest passenger airport outside the South East. It operates a two-runway system (the only UK airport with two runways except Heathrow). It has previously handled substantially more freight than currently handled.
- Similarly, Liverpool and Prestwick have previously handled much higher freight volumes than currently. Both airports have significant spare runway capacity and a large site to develop cargo infrastructure (Prestwick already has the facilities to handle specialist cargo). While Prestwick may be too far north to effectively serve the South East market, it could relieve pressure on other UK airports by capturing a larger share of freight demand to/from Scotland and the North of England. Liverpool is well connected to the UK motorway network, and the airport is owned by the operators of Liverpool Port.

6.4. Overall Capacity Outlook to 2040

260. We have projected the overall airport capacity for freight in 2040. For the three largest freight airports, future capacity has been sourced from the published plans described in the previous sub-section.

- While Heathrow and Stansted do not explicitly state their maximum expected future cargo capacity, we can assume each airport will have at least enough capacity to serve its predicted demand[124].
- The Heathrow figure assumes the opening of the planned third runway.

261. For other airports, we assume the following:

- Gatwick has handled ca. 0.2m annual tonnes of freight as recently as 2006. We assume it has the capability (demand permitting) to handle similar volumes in the future.
- Manchester handled ca. 0.17m annual tonnes of freight in 2007, and in its 2006 Masterplan, the airport forecast cargo tonnage of 0.25m tonnes by 2015[125]. We assume that the airport will be able to accommodate freight up to its masterplan forecast (0.25m tonnes).

[121] (East Midlands Airport, 2015, p. 73)
[122] (East Midlands Airport, 2015, p. 9)
[123] (East Midlands Airport, 2015, p. 75)
[124] Documentation from these airports indicates they have identified and made provision for developments of ground facilities (warehouses, stands etc…) to accommodate the forecast demand. Only Heathrow requires development of runway capacity.
[125] (Manchester Airport, p. 29)

- We assume that the remaining UK commercial airports (which are still fully operating) can handle freight tonnage at the level of previous peak year throughputs. This provides an assumed capacity of ca. 0.3m tonnes.
- Finally, we assume that by 2040, an additional 0.1m tonnes could be handled at airports with large sites but limited historic freight throughout (e.g. Doncaster Sheffield). This is likely to be a conservative assumption.

262. Total UK air freight capacity in 2040 is estimated to be ca. 5.4m tonnes per annum (including the impact of a new Heathrow runway). Of this, ca. 65% could be bellyhold capacity, with ca. 35% from freighters. Capacity at the three main cargo airports (Heathrow, East Midlands and Stansted) is estimated to be ca. 4.6m tonnes.

Airport	Estimated 2040 Capacity (m tonnes)	Possible Utilisation	
		Freighter	Bellyhold
Heathrow	**3.00**	0.09	2.91
East Midlands	**1.10**	1.08	0.03
Stansted	**0.46**	0.40	0.06
Manchester	**0.25**	0.03	0.23
Gatwick	**0.20**	0.00	0.20
Other UK	**0.39**	0.30	0.09
Total UK	**5.40**	**1.89**	**3.51**

Table 2 – Summary of estimated 2040 air freight capacity at UK airports
Source: Heathrow Airport, East Midlands Airport, Stansted Airport, Manchester Airport, UK CAA, Altitude analysis and assumptions

6.5. Capacity Outlook Prior to New Runway at Heathrow (2029)

263. We have also considered the potential capacity available prior to the third runway at Heathrow (assumed to open in 2030). There is limited information on the phasing of future capacity developments in the period to 2040, so this estimate has a greater reliance on our assumptions.

264. We have modelled the potential UK air freight capacity in 2029 at ca. 3.6m tonnes. This is based on the following prudent assumptions:

- No additional passenger or cargo ATMs at Heathrow compared to 2016. We assume that the airport will be able to accommodate freight growth at half the achieved annual growth rate for bellyhold tonnes/ATM recorded from 2006-16.
- We assume that the current Stansted and East Midlands capacity is at least 20% above 2016 freight outturn. We then model that the incremental capacity to be added by 2040 will be brought onstream at a constant rate.
- We model that Manchester is able to handle freight that was forecast for 2015 in its 2006 masterplan (same as 2040 assumption).
- For all other existing commercial UK airports, we assume the airports can handle historic peak values.

265. This is a deliberately cautious approach. Neither Stansted nor (especially) East Midlands face substantial freight constraints currently, and should be able to handle much higher freight volumes in the coming years.

6.6. Post 2040 Capacity Outlook

266. In the long term, there is the possibility of additional runway capacity in the South East. The Airports Commission stated in its final report:

> *"Even with a third runway at Heathrow, capacity in the London and South East system could be highly constrained by the 2040s and, as the Commission noted in its Interim*

Report, there would be likely to be sufficient demand to justify a second additional runway by 2050 or, in some scenarios, earlier"[126]

267. The regulatory environment, particularly with regard to noise and night flying, looks likely to be a key determinant as to the overall capacity that might be available for cargo movements post-2040.

[126] (Airports Commission, 2015, p. 334)

7. UK Demand vs Supply Outlook

7.1. Our Forecast for the UK Market

Context

268. We have assessed the future demand for air freight in the UK, reflecting some notable trends:

- Increasing role of passenger aircraft in the carriage of air freight, and the relative diminishing in importance of freighter aircraft. Passenger demand has developed strongly in recent years. This has led to expansion of cargo capacity in the bellyhold of passenger aircraft outstripping growth in air freight demand (see Figure 37).
- This trend has led to cutbacks in dedicated freighter operations from leading airlines such as Cargolux, IAG, Air France-KLM and Singapore Airlines (see paragraph 425). As of Q4 2016, 15% of widebody freighter capacity globally was in storage (see Figure 36). Airbus forecasts growth of just 42 freighters in European fleets by 2036[127]. In the UK, freight tonnes carried on all-freighter aircraft peaked in 2004. Since 2004, its share of total air freight has fallen from 37% (ca. 876,000 tonnes) to 30% by 2016 (ca. 708,000 tonnes, see Figure 5).
- There has also been a clear move towards consolidation of air freight activity at major passenger or freight hubs. In the UK, the leading 3 airports (East Midlands, Stansted and Heathrow) have steadily grown their share of overall UK air freight tonnes on dedicated freighter services – from 41% in 1990 to 86% in 2016 (see Figure 7). The UK bellyhold market is even more consolidated, with the leading 3 airports (Heathrow, Manchester, Gatwick) achieving a combined market share of 97%+ in each year since 1996 (see Figure 11).
- Cargo ATMs across UK airports have contracted, from ca. 108,000 in 2000 to ca. 52,000 in 2016. The most recent (2017) Department for Transport forecasts to 2050 assume the number of freighter flights in the UK will remain flat at 2016 levels[128].

269. We expect these trends to continue into the long term. These fundamental market developments do not appear to have been recognised by Azimuth, or have been ignored, in its assessment of the potential for a re-opened Manston.

Forecast Approach

270. Air cargo forecasting is complex, with a wide variety of factors influencing long-term demand. These include:

- High-level economic factors (such as overall GDP growth of the producer and consumer countries, and exchange rates) as well as low-level economic factors (e.g. business rates and import/export taxes).
- The state of global relations and the proliferation of protectionist trade measures.
- The mix of products being traded (remembering that generally only high-value items are suitable for air freight).
- The rate of product miniaturisation (which reduces air cargo volumes/tonnages).
- Development of entirely new products (e.g. iPhone and the global uptick in air freight when a new model is released).
- Technological advances enabling mode shift to or from air freight.

[127] (Airbus, 2017a, p. 105)
[128] (Department for Transport, 2017a, p. 33)

- Fuel prices impacting the competitiveness of air freight relative to other modes (while some products must travel by air, for others this is a preference, which is influenced by price).

271. It is also reasonable to suggest that there is less of a global focus on air cargo forecasts than, for example, air passenger forecasts. As such, there is less detailed, less well-defined, and less-robust data available upon which to base air cargo forecasts.

272. In the interests of simplicity and transparency, we have adopted a very high level econometric approach.

- Future freight growth has been linked to projections of future UK GDP growth.
- We use the UK Office for Budgetary Responsibility long term predictions of UK GDP[129]. In real terms, UK GDP is anticipated to grow by CAGR 2.2% in the period 2016-40 (CAGR 2016-29: 2.2%, 2029-40: 2.3%) with CAGR of 2.4% for period 2040 to 2050.

Forecast Results – Base Case

273. We project the size of the UK air freight market in 2040 to be ca. 4.2m tonnes per annum. This breaks down as ca. 3.1m tonnes of bellyhold demand and ca. 1.1m tonnes of freighter demand. We also project that:

- 2029: ca. 3.3m tonnes (of which ca. 0.9m tonnes of freighter demand).
- 2050: ca. 5.1m tonnes (of which ca. 1.2m tonnes of freighter demand).

274. Key assumptions made in generating our base case forecast include:

- Low growth experienced in the last decade will not continue, with future demand elasticities only slightly below historic long-term observed ratios.
- Future demand elasticities will decline slightly with time (also due to increasing market maturity).

275. We forecast the 2016-40 growth rate to be 2.4% CAGR. This is slightly behind the level of growth seen in the long-term historic data (between 1990 and 2016, CAGR was 2.7% CAGR). Nevertheless, we view our forecast as relatively optimistic. Our forecast growth rate is well ahead of the level of growth seen in more recent years (e.g. 2010-16 CAGR of 0.4%).

276. Our forecast growth rate is behind global forecast growth by Airbus (CAGR 2016-36 of 3.8%). This is not unexpected given that the UK is a relatively mature market, and that our forecast is for a longer period. Note also that our forecast is for tonnage, compared to flown tonne-kilometres for Airbus (as such, changes in the average sector length would influence the Airbus forecasts).

Forecast Results – Scenario with lower demand elasticity

277. We have also produced a scenario in which we lower our forecast demand elasticities to be in line with observed ratios from the four most recent historic years (i.e. 2013-16, over which UK air freight tonnage has grown at 1.8% CAGR). GDP growth in this scenario is as per our base case.

278. This scenario results in a UK demand of 3.6m tonnes of air freight in 2040 – significantly lower than our base case forecast (see Figure 19). This highlights the strength of the market recovery we are assuming in our base case.

[129] (Office for Budget Responsibility, 2017, January)

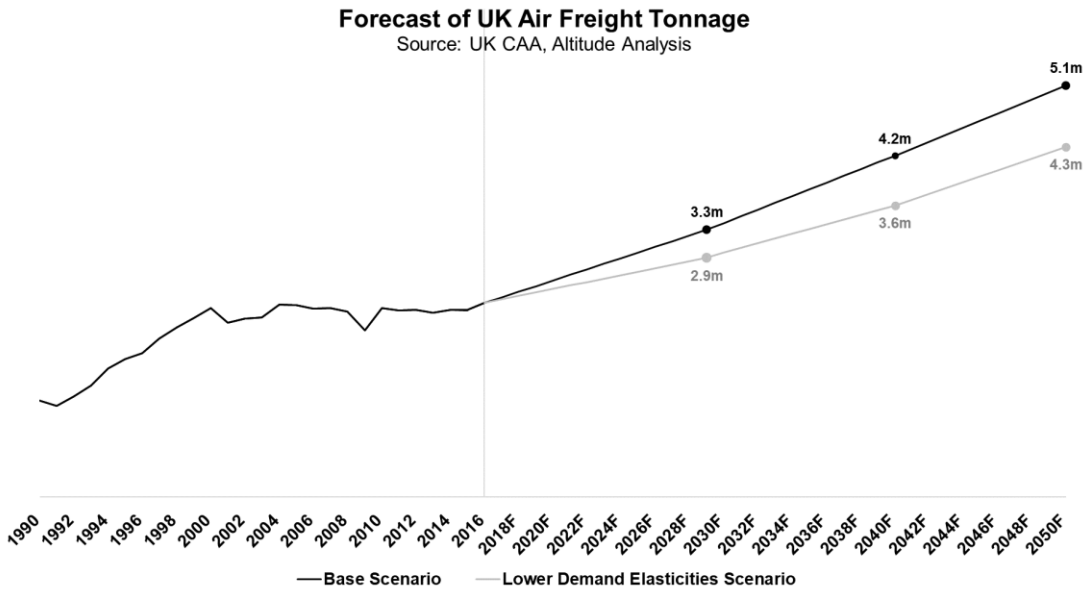

Figure 19 – Altitude forecast of UK air freight demand to 2050

7.2. Other UK Market Forecasts

East Midlands Airport UK Market Forecast

279. In its 2015 'Sustainable Development Plan' document, East Midlands Airport has published its assumptions for the size of the UK market in 2040. It predicts total demand of 4.4m tonnes per annum:

> *"A review of the airport's cargo forecasts has also been carried out. This assumes growth in the UK's total air freight demand, doubling from 2012 levels (2.3 million tonnes) to 4.4 million tonnes by 2040 (combined annual growth rate of 2.3%)"*[130]

280. This gives an average growth rate that is similar to our forecast but from a starting point of 2014 rather than 2016. Growth in the period 2014-16 was significantly lower than 2.3%, explaining the minor differences in the 2040 projections.

York Aviation London Airports Forecast

281. York Aviation published a report in 2015 for the Freight Transport Association and Transport for London. The report included a prediction of the volume of air freight demand in London in 2050. Note the final year of outturn data upon which this forecast is based appears to be 2013.

282. York Aviation's forecast air freight demand at London airports is 4.2m tonnes per annum by 2050[131]. Using the report's stated figure for 2013 freight tonnage at London airports (1.8m tonnes), the forecast CAGR 2013-50 is 2.3%.

283. However, while the growth rate is similar to our UK wide forecast growth, there are again differences in the starting point (achieved growth in the period 2013-2016 was lower than the average growth rate of the whole forecast period).

[130] (East Midlands Airport, 2015, p. 16)
[131] (York Aviation, 2015, p. 19)

7.3. Future Requirement for Freight Capacity at UK Airports

284. As indicated previously, we have compared our forecast demand with our assumed airport capacity for three spot years:

- Prior to new Heathrow runway (2029, last year before assumed new runway opening).
- Medium term planning horizon (2040).
- Long term planning horizon (2050).

285. For the period to 2040, the potential air freight airport capacity in the UK is comfortably higher than the volume of demand we forecast for the UK as a whole.

- In 2029, we forecast base case demand of 3.3m tonnes, compared to a conservatively modelled airport capacity of 3.6m tonnes. In practice we would anticipate that both Stansted and East Midlands capacity could be significantly higher than we have assumed. Therefore, we do not see any overall capacity shortage prior to the third runway at Heathrow.
- By 2040, we forecast demand of 4.2m tonnes, compared to assumed airport capacity of ca. 5.4m tonnes.

286. Furthermore, the potential freighter capacity is significantly above our freighter demand forecast, and the potential bellyhold capacity is also ahead of our bellyhold demand forecast.

287. By 2050, if there is no further capacity development, demand levels are projected to approach capacity provision. This may lead to capacity constraints at preferred airports for the freight sector.

288. Based on planned expansions at the existing major airports, we do not envisage a need for additional freight capacity to be developed in the period to 2040, and possibly not until 2050.

289. Therefore, there is not a compelling need for development of further airport capacity for freighter aircraft in the UK (other than that already in the pipeline or at operational airports with identified potential future capacity).

8. Review of Azimuth Freight Forecasts

8.1. Context

290. In this section, we assess the Azimuth freight forecasts for Manston. As part of this assessment, we review in turn:

- Arguments put forward by Azimuth in Volume 1 in relation to the future potential of Manston. These arguments are then deployed later on in the Azimuth study in support of its freight forecasts.
- The discussion of forecasting approaches put forward by Azimuth in Volume II.
- The research Azimuth undertook (interviews) and their findings and conclusions (Volume II).
- The methodology adopted by Azimuth in its freight forecasts for Manston Airport, set out in Volume III.
- The Manston freights forecasts that have been developed by Azimuth (Volume III).

291. Note that there is a degree of repetition across the various Azimuth reports. To avoid excessive duplication, we review similar points only once.

8.2. Supporting Arguments (Volume I)

292. In this sub-section, we review the key arguments for Manston that Azimuth[132] deploy in Volume I of its report. We critique these points in the same order as they appear in the Azimuth report.

General

293. In Table 2 (P11), Azimuth outlines the leading European airports for freighter movements. In relation to the table, on Page 10 it comments that:

> *"The figures highlight the reliance on belly-freight at most of the UK's airports…. As the UK progresses with negotiations to exit the EU, the Country will find it advantageous to have sufficient capacity at airports that can handle dedicated freighters, without the need to truck to airports in mainland Europe."*

294. We make a couple of observations:

- By Year 5 of the Azimuth[133] forecasts, the predicted freight throughput of Manston is already ahead of the 2014 volumes of some of the leading European airports in the table (Dublin, Rome, Frankfurt Hahn). This highlights the scale and speed of the freight growth that is forecast for Manston by Azimuth.
- The non-UK airports in the table are predominantly major passenger hubs or large passenger airports (typically primary capital city airports). The only exceptions to this are the major integrator hubs at Leipzig and Liege, and Frankfurt Hahn (one of the smaller freight airports in the sample, with lower throughput than envisaged for Manston in Year 4 of the forecasts). This illustrates the importance of "hub" capacity for freighter operations, where wide body long haul passenger flights complement dedicated freighter operations. Manston would not provide this type of capacity.

295. Azimuth also quotes Oxford Economics, Transport for London and York Aviation studies highlighting freight capacity shortages (Volume I, P1-13). We reiterate our previous comments that we do not believe there is an overall shortage of freight capacity. Azimuth ignores the context of these studies, and does not distinguish between hub capacity and freighter capacity at other airports. We refer to the November

[132] (Azimuth Associates, 2017 a)
[133] (Azimuth Associates, 2017 c, p. I)

2017 report by York Aviation[134] which clearly explains how Azimuth misrepresents the studies relied upon to the extent that York Aviation make clear that *" the York Aviation work relied upon by RSP does not, and cannot be taken to, support RSP's proposed alteration to Manston Airport and, therefore, cannot be relied upon by RSP, the Planning Inspectorate, the Secretary of State and any future appointed Examining Authority (should RSP submit the application and the Secretary of State accepts the application)".*

296. Therefore, it does not follow, as stated on Page 13, that "*It is clear from the figures presented here that the capacity available at Manston Airport is vital to the continued competitiveness of the UK.*"

297. Azimuth acknowledges the importance of integrators and freight forwarders on Page 14:

> *"The RiverOak vision is to encourage integrators and freight forwarders to locate in the Manston area, have a competitive pricing structure, and build on the previous excellent cargo handling service provided by the airport."*

298. However, both integrators and freight forwarders consolidate activity at major hubs. It is not clear why they would relocate to the peripheral location of Manston. Heathrow is the major consolidation point in the South East. Even under the highly optimistic Azimuth forecasts, Manston freight throughput would remain a fraction of the Heathrow outturn volumes.

299. Page 14 of the Azimuth report outlines various advantages that Manston apparently benefits from. However, these stated advantages were insufficient to enable the airport to be viable when it was operational.

300. Page 22 raises concerns about the number of destinations served from Heathrow.

> *"The Aviation Policy Framework indicates the Government's concerns over the falling number of destinations served by Heathrow Airport and the impact on connectivity. Profitable routes are operated at higher frequencies, reducing the number of destinations served (DfT, 2013, p. 28). This reduces the possibility of using bellyfreight to those destinations no longer served from Heathrow and indicates the need for dedicated freighters on those routes."*

- It is not clear that the number of destinations served from Heathrow is falling (recent trend is inconclusive).
- As discussed in paragraph 204, capacity constraints have primarily impacted short haul routes, which are less relevant for bellyhold freight. The freight tonnage per flight has been increasing at Heathrow in recent years (see Figure 13).

BREXIT and Security Issues

301. Section 5.2 (P22-23) discusses the potential effect of BREXIT on UK aviation. We agree with the comment that "*There are many unknowns at this stage*". However, only positive outcomes (in relation to Manston) are considered. Some major assertions are made that are based on conjecture and lack logic.

302. For example, on Page 23, it is speculated that:

> *"Friction at the borders between EU countries and the UK, particularly at the Channel ports, is likely to increase to meet the demands of security checks and ensuring tariffs are paid where necessary. This may serve to switch transport away from trucking to air freight, avoiding congestion at the Channel Crossings."*

[134] (York Aviation, 2017, p. 9)

303. Two major assumptions are made. Firstly, that any border issues will be significant and of a permanent nature. However, this will not necessarily be the case. A news report in the Guardian[135] interviewed the chief executive of the Belgian port of Zeebrugge.

> *"Gridlock at the border, vast motorway car parks and jobs lost: British ports have been vocal about the risks of a hard Brexit. In case Conservative MPs missed the message, the Port of Dover advertised at the party conference, warning that an extra two minutes on lorry inspections could lead to queues of 17 miles at Dover and similar "chaos in Calais and Dunkerque".*
>
> *Across the North Sea, continental ports are worried about the great unknowns of Brexit. One of the most exposed is the Belgian port of Zeebrugge, which does 45% of its trade with the UK. "We are vulnerable if something happens to the trade from the UK to the continent," said port chief executive Joachim Coens. "So what I mainly hope is that we could continue having a good trade relationship with the UK… as we have been doing for centuries."*
>
> *However, Zeebrugge is less concerned about the resumption of customs checks – "I think we can handle that," says Coens. The Belgian port could even take business from Calais, he suggests, because it specialises in people-free freight – "roll on, roll off" in industry jargon – removing problems about drivers having to clear UK border controls.*
>
> *Meanwhile, Zeebrugge is fast-tracking the development of apps and scanners to further reduce paperwork. It is developing a UK-specific programme for every stage of the logistics chain, which would allow goods to clear customs even when lorries are miles from the port."*

304. The second major assumption is that customs checks would not have a similar impact on processing times for air freight. As air freight is much more time sensitive than trucked freight, the addition of an hour (say) to processing time would have a much greater impact on air freight than trucking.

305. Even if BREXIT was to negatively impact trucked freight from Europe into the UK, it could equally impact trucked freight in the other direction. Therefore, there could be less flown freight into the UK for onward trucking distribution to other parts of Europe.

306. Azimuth continues:

> *"It is also likely that increased trade will occur between Britain and more geographically distant countries. Trucking of goods to these countries will not be an option thus increasing the need for air freight, making the capacity Manston can provide nationally significant to the Nation's airport infrastructure*".

- This outcome is a possibility.
- It is also plausible that the UK could lose trade with other parts of the world. For example, if Japanese car manufacturers relocated assembly plants from the UK to locations within the single market, this would have a negative impact on trade and freight.

307. In summary, the impact of BREXIT is essentially unknown. No business decision or planning application can be made based on such an unknown.

308. Also on Page 23, Azimuth speculates on the impact of increasing passenger security at airports, following terrorism attacks at Brussels and Istanbul airports.

[135] https://www.theguardian.com/politics/2017/oct/07/zeebrugge-brexit-braced-for-tariffs-trade-loss

> *"Airports are not designed to security check all visitors as they enter the airport. If required, it will cause huge delays and require passengers to arrive many hours (almost certainly at least three) before their flight. These delays impact belly-freight, making a switch to dedicated freighters more likely."*

309. We do not see the logic in this assertion. If passengers need to arrive at the airport earlier, this will not impact aircraft turnarounds or the loading or unloading of freight. These are independent processes. Therefore, it is difficult to see how such a development would have any impact on bellyhold freight.

310. The potential positive impact of e-commerce development is discussed on Page 24. The analysis of the opportunity is anecdotal. No consideration is given to how e-commerce may be replacing other types of freight.

Previous Manston Performance

311. Finally, on Page 26, there is some discussion on why Manston was unsuccessful, despite an efficient cargo product:

> *"Manston established a reputation for speedy handling of perishable cargo, with unloading and throughput times much faster than competitor airports."*

312. Azimuth goes on to state:

> *"Since Manston suffered from a severe lack of investment, and constraints on the ground are likely to have resulted in capacity restrictions that prevented growth past the figures for cargo shown in Table 4. With only one cargo stand, aircraft were unable to exit to the runway if another aircraft taxied into the cargo area behind it. The airport had limited storage, had not invested in up-to-date handling equipment, and closed their Border Inspection Post. In spite of the lack of investment, there was considerable growth in Manston's cargo market from 2010 until 2013. This growth strongly indicates that Manston, with the investment required would have a strong future."*

313. We understand that there was significant investment from previous owners. In 2002, it was reported that £7m had been invested on new aprons and taxiways, increasing the freight capacity to 200,000 tonnes[136]). It seems unlikely that the low level of freighter activity was due to lack of capacity.

- The report states that Manston had 2,073 ATMs in 2013, its last full year of operation. This was also the busiest year for ATMs since 2005. However, CAA data indicates that only 511 fights were cargo related.
- This is equivalent to an average of less than 1 rotation per day in its final full year. If demand was there, we would expect that the airport should have been able to handle much greater levels of freight activity.

314. The Azimuth conclusion (see above) that a reopened Manston would have a strong future is based on the "*considerable growth in Manston's cargo market from 2010 until 2013*". The actual growth was 1,203 tonnes (CAGR 1.4%). In fact the airport did not achieve significant growth at any stage in the last decade of operations, with the 2013 outturn only 2,680 tonnes ahead of the 2004 value.

[136] (Wiggins Group plc, 2002, p. 16)

8.3. Approach to Forecasting (Volume II)

315. In Volume II of its reports, Azimuth[137] discusses at some length air freight forecasting literature and its own research methodology.

316. In the interests of brevity, we do not provide detailed comment on Azimuth's literature review. In general, we find the review is very broad, with much of the material of limited relevance (e.g. use of game theory). The approach is also somewhat academic, with minimal practical application.

317. Azimuth[138] concludes that:

> *"…in the case of Manston Airport, closed for several years and lacking investment for many more, this approach is not appropriate. Any attempt to build an econometric model would have to establish criteria whereby a proportion of the total predicted UK air freight traffic was 'diverted' to Manston. However, deciding upon the proportion to divert to Manston raises significant problems.*
>
> *Therefore, instead of providing a mathematical forecasting model, this review of the literature suggests a qualitative approach that aims to predict human and organisational behaviour. Indeed, the DfT (2014, p. 3) place a heavy reliance on an understanding of human behaviour in achieving realistic outputs. A qualitative approach that gathers the opinions of industry experts would allow areas of potential demand for Manston Airport to be identified. It is this type of approach that has been selected in the case of Manston Airport."*

318. We disagree with the conclusion that a purely qualitative methodology is appropriate. While qualitative approaches can be useful, they are most robust as a complement to a quantitative approach. Furthermore, qualitative approaches are typically only adopted for relatively short term forecasts.

319. The issues with a purely qualitative approach in the context of Manston Airport are:

- Assumptions are subject to bias, lack transparency and are impossible to independently verify.
- Does not identify current market size for relevant segments.
- Forecasts do not reflect historic traffic patterns.

320. In particular, we would have expected some attempt at quantification of the overall UK market size for the different freight segments assumed in the Azimuth forecasts. Otherwise, it is extremely difficult to gauge what level of market share for Manston is implied in each freight niche.

321. In describing its research methodology, Azimuth[139] state that:

> *"It should be noted that a comparative case study approach was not deemed possible, as no airports in sufficiently similar circumstances were identified."*

[137] (Azimuth Associates, 2017 b, pp. 6-25)
[138] (Azimuth Associates, 2017 b, p. 20)
[139] (Azimuth Associates, 2017 b, p. 22)

322. While no two airports are exactly alike, there are various airports with similar characteristics to Manston prior to its closure. For example, Prestwick Airport is an airport with modest passenger volumes that also accommodates dedicated freighter flights. Its peak annual freight tonnage was ca. 43,000 tonnes, almost identical to the equivalent value for Manston (source: CAA airport statistics).

- Prestwick Airport[140] has "*the ability to handle large pieces of specialist cargo*".
- It has invested in the "*latest security screening technology which ensures even long and heavy pieces of cargo can be processed quickly and securely*".
- A dedicated sales team has been established, "*targeting high yielding and specialist areas, whilst still delivering a high quality and cost effective service to routine loads". Furthermore, the "management team also continues to promote the airport as a major UK cargo hub at key global events and trade shows and is doing significant work on evaluating the potential for the airport to become a handling consolidation point for Scotland's perishable export industry and the local aerospace industry*".

323. Despite this investment, the airport's current freight throughput is well below historic levels (ca. 11,000 tonnes in 2016, source: CAA airport statistics). The airport identifies the following challenges:

- "*… the dedicated freighter only aircraft market that the Company has specialised in has been in global decline*".
- "*However, income per tonne has remained static over the last 3 years primarily because of the static market, increasing belly hold capacity and the overall competitive nature of the business*".

324. We note there are many similarities to Manston. The proposed strategy for a reopened Manston has some notable areas of commonality with the current Prestwick strategy. Prestwick incurs substantial financial losses, as did Manston for many years before its closure.

325. Clearly there are some differences. The demand in Scotland will not be as strong as in the South East. However, the level of airport competition is much stronger in the South East.

326. It should also be noted that Azimuth[141] is forecasting ca. 341,000 tonnes of freight on dedicated freighters within 20 years of reopening. This is higher than current freighter tonnage at any UK airport. Therefore, clearly there is no equivalent case study that supports the Azimuth growth forecasts.

[140] (Glasgow Prestwick Airport Limited, 2016)
[141] (Azimuth Associates, 2017 c, pp. 11-12)

8.4. Expert Interviews and Discussion (Volume II)

327. The qualitative forecasts by Azimuth[142] were informed by interviews with 24 different parties.

- Only a minority of the parties interviewed appear to be airlines or freight forwarders. Many of the interviewees seem to be of limited direct relevance.
- It is not clear how much air cargo to/from the UK is transported by interviewees. With the notable exceptions of DHL and FedEx, most operators interviewed appear to be relatively small. Azimuth[143] comment that "*there was a wide range between 90 tonnes and 20,000 tonnes per year for the smaller shippers to vast amounts for the integrators.*"
- There is limited visibility on how much cargo these operators used to fly through Manston when it was open.

328. There is also a lack of information on the following points:

- Which airports would a re-opened Manston be capturing cargo from?
- Why do operators not use East Midlands or Stansted, given stated concerns with Heathrow?
- What are the relative economics of using Manston versus bellyhold freight at Heathrow, freighters at alternative UK airports or trucking?

329. Not all the comments support the RSP case for Manston:

- Page 30: *"… it's not going to work if you can only fly between 10.00 and 21.00".* This suggests the airport would need to accommodate night flights to be viable.
- Page 41: "*Integrators monopolise the freight-friendly airports such as East Midlands (DHL) and are reluctant to change their operations, preferring to cope with slot restrictions at Heathrow rather than moving to other more cost effective airports (DHL, FedEx). The explanation for this is the focus on associated fixed costs and the resources involved to make a move to another airport (FedEx)*". This confirms that integrators (and associated high freight tonnage) will be unlikely to move to Manston. The remaining opportunities discussed are mainly in niche areas.

330. We question some of the responses from interviewees:

- On Page 42, Frankfurt is highlighted as an example of a successful cargo airport which does not have 24 hour operations. This is not a relevant comparison in the context of Manston. Frankfurt is one of Europe's leading passenger hubs (over 60m passengers in 2016), with dedicated freighter flights complementing bellyhold provision.
- On Pages 43/44, it is hypothesised that "*With London being a major economy and with scant landing slots available for cargo, a portion of Frankfurt cargo is likely being transported from Frankfurt to London by truck. Manston could readily handle this business in a more cost effective and timely manner, with less environmental impact than trucking from Frankfurt to the UK.*". There is simply no supporting evidence for this assertion, or consideration of the possibility that trucking may be more cost effective (and environmentally friendlier) than flying.
- On Page 46, there is speculation of the impact of Brexit. "*With the UK's exit from the EU, more stringent border control procedures can be expected… Given increased friction at the border crossings, this market is more likely to consider moving to airfreight*". We address this issue from paragraph 302 onwards.

[142] (Azimuth Associates, 2017 b, pp. 25-46)
[143] (Azimuth Associates, 2017 b, p. 26)

331. In the discussion section of the Azimuth[144] report, a range of market opportunities for Manston are put forward. We have commented on many of these areas in depth earlier in our report. On Page 58, Azimuth discusses how future preferences may shift away from bellyhold freight.

> *"Whilst the UK air freight market is currently dominated by belly-hold rather than dedicated freighters, this is the reverse of the situation in the rest of Europe. Several factors may contribute to a change to this dominant model. These include reduced capacity on aircraft such as the A380, the LCC model, which generally focuses on rapid turnarounds, which preclude the carriage of freight. In addition, many interviewees talked of freight being bumped from passenger aircraft and the negative impact this has on their business. If the market was to move away from belly-freight and towards the use of more dedicated freighters, Manston would be well placed to attract this growing market".*

332. We disagree with this assessment:

- Trends in the UK and globally have been strongly towards bellyhold (due to passenger demand and hence belly hold capacity outstripping air cargo demand, see Appendix Section 11.3).
- The A380 is the exception. In general, newer widebody aircraft types have more bellyhold capacity than predecessors (see paragraph 140 onwards).
- There is limited freight uplift from full service passenger airlines operating short haul routes. Therefore, increased penetration of low cost carriers in this segment will not have a major impact (see paragraph 233).

333. On Page 64 of the Azimuth report, it is speculated that Manston could act as a base for Amazon, including the development of a drone hub. No supporting evidence is provided. For the locational reasons highlighted previously, Manston does not seem an obvious choice to host such activity.

[144] (Azimuth Associates, 2017 b, pp. 56-66)

8.5. Methodology Used in Manston Forecasts (Volume III)

334. Volume III of the Azimuth[145] report provides freight forecasts for the first 20 years of Manston Airport (after assumed reopening).

335. In the preamble, Azimuth once again seeks to justify its qualitative approach (Page 3).

> *"The second option was to take a qualitative approach focused on collecting market data. This allows base data to be derived from a method that takes account of how commodities are currently transported and how they are likely to be transported in the near future. This approach is particularly applicable in the Manston case since the airport is not currently operational. Indeed, in the short-term, any useful forecast needs to be built from the likely behaviour of potential airport users.*
>
> *This method is confirmed by the ACI-North America, who represents local, regional and state governing bodies that own and operate commercial airports in the United States and Canada, and recommends deriving customised inputs from a detailed market assessment. This assessment should be informed by carriers, their business partners and other supporting entities in the air freight community (ACI-NA, 2013, p. 3)."*

336. We do not believe that the ACI[146] study provides sufficient rationale for the Azimuth forecast approach. The same ACI study states on Pages 46/47:

> *"The best source of customized inputs in a forecast derives from a detailed market assessment. Carriers, their business partners, and all of the supporting entities in the air cargo community can provide meaningful input to ensure that the forecast is anchored in reality and adds clarity to the planning requirements."*
>
> *"Use the most reliable and current data – A correct and solid traffic basis is essential. If not available, different data sources should be consulted to establish the best possible estimates."*
>
> *"Typically, at least two forecast scenarios are developed to provide a range of potential future activity levels. The baseline forecast represents a continuation of the airport's current role in the region and in the national transportation system. The baseline forecast represents the most likely scenario and will be used for future planning. An alternative scenario(s) can be used as a sensitivity analysis to assess the ability of the airport to respond to optimistic demand factors that depart from the baseline forecast."*

337. Therefore, ACI is not advocating a completely qualitative approach.

- The Azimuth study does not provide a detailed market assessment (rather, anecdotal evidence about the size of selected niches).
- Interviews only covered a small selection of current UK operators.
- No attempt has been made to establish a solid traffic base (from which Manston could seek to capture market share).
- The ACI study suggests that historic traffic performance should inform baseline projections, rather than be disregarded. Alternative scenarios are more appropriate for the types of optimistic demand factors incorporated in the Azimuth forecasts.

[145] (Azimuth Associates, 2017 c)
[146] (Airports Council International - North America, 2013)

338. The ACI study (Page 50) goes on to highlight the different demand data that should be considered, including segmenting tonnage by origin/destination, commodity, desired level of service[147] and shipment size.

339. Key factors to consider are summarised on Page 52, including regional demographics, regional employment and production, regional industrial location patterns, shifts in commodity demand and shifts in distribution practices and patterns.

340. A more balanced assessment of the ACI guidelines is that both qualitative and quantitative methods play an important role in the development of air cargo forecasts. It is not our reading that ACI proposes that a purely qualitative approach is sufficient.

341. On Page 3 of its report, Azimuth makes reference to the Airport Commission:

> *"The Airports Commission also recommends using the Delphi Method, pointing out that relying on, "a single, central-point forecast would be a risky approach" (Airports Commission, 2013, p. 8)."*

- The Airports Commission developed multiple scenarios in its traffic forecasts.
- However, despite this, only one scenario is presented in the Azimuth projection.

342. Volume III also refers to York Aviation and Transport for London analysis (Page 1). As highlighted previously and as supported by York Aviation themselves (see paragraph 235), Azimuth makes incorrect interpretations from the studies.

343. Azimuth also quotes selected secondary data in support of its forecasts. On Page 4, it quotes a one month snap shot of global freight volume growth from November 2016. In the context of long term forecasts for Manston, this is meaningless.

344. Boeing and Airbus freight forecasts are also highlighted.

- Boeing and Airbus are both leading industry bodies which regularly publish air cargo forecasts.
- Boeing on a bi-annual basis (most recent in 2016).
- Airbus, annually (most recent in 2017).
- Note that both forecasts are in units of flown tonne-km – a combination of the tonnage of cargo flown and the distance it is flown for (as such, changes in the average sector length would affect the forecasts). The tonne-km forecasts include both bellyhold and cargo carried on dedicated freighters (though these are not separated in the projections).

345. Global Airbus projections are then used as the source for a simplistic annual growth for Manston for years 11-20 of the Azimuth forecast.

- There are obvious difficulties in comparing growth rates for tonnage at a UK airport (in a mature market) with global freight tonne-km projections (which include forecast growth in faster growing economies).

346. We have undertaken a more in-depth review, outlined in the paragraphs below.

347. In its latest forecast, Boeing predicts air cargo growth of 4.2% CAGR over the period 2015-35[148]. The most recent Airbus forecast, for the period 2016-36, gives a CAGR of 3.8%[149].

[147] Trade-off between the cost and the quality of service as determined by transit time, reliability and security, often compared to the same characteristics for available surface options.
[148] (Boeing, 2016, p. 2)
[149] (Airbus, 2017a, p. 101)

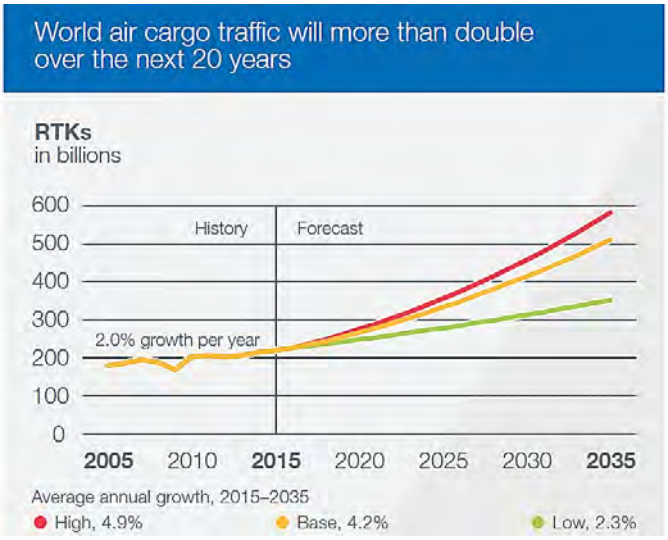

Figure 20 – Global 20-year air cargo forecast - timeseries of high, base and low forecasts

Source: Boeing

348. Boeing also provides a regional breakdown of expected growth rates[150]. For the flows involving Europe, most are below the global average CAGR. Growth of intra-Europe air cargo is forecast to be the lowest of any regional flow shown (2.2%). This indicates global growth projections need to be treated with caution in the context of the UK market.

Figure 21 –Global 20-year air cargo forecast – size, and growth rates, of key flows

Source: Boeing

349. While Airbus and Boeing forecast strong growth in tonne-km in future years, it should be noted that only limited growth in freighter aircraft is envisaged for European based airlines. Airbus forecasts growth of just 42 freighters in European fleets by 2036[151] (Boeing does not appear to provide an equivalent number).

350. History shows that Airbus and Boeing forecasts tend to be optimistic. Boeing has reduced its 20-year forecast of growth in every iteration since at least 2010/11, while Airbus has reduced forecast growth in

[150] (Boeing, 2016, p. 16)
[151] (Airbus, 2017a, p. 105)

every iteration since at least 2012. This has resulted in lower tonne-km at the end of each forecast e.g. the 2017 version forecasts lower tonne-km for 2036 than the 2015 version forecast for 2034.

351. Similarly, the number of dedicated freighter aircraft Airbus expects to be in operation by the end of its 20-year forecast has been reduced by around one third, from ca 3,000 (based on the 2012 forecast[152]) to ca, 2,000 (based on the 2017 forecast[149]). We note this downgrading of freighter outlook has not been mentioned in the Azimuth reports, notwithstanding its use of Airbus cargo projections.

- Note the drop of one third in the number of freighters expected to be operating in future is greater than the drop in its cargo tonne-km CAGR forecast, implying increasing dependence on bellyhold capacity to meet air cargo demand. This is consistent with historic trends, highlighted previously in this report.

352. Alongside the figures discussed above, Boeing publishes high and low forecasts. These show global air cargo CAGRs of 4.9% and 2.3% respectively. Notice that the downside (-1.9ppts) is significantly larger than the upside (+0.7ppts). Notwithstanding the differences in geography and forecast units highlighted previously, our projections for the UK sit within this range (CAGR 2.5% for same time period as Boeing projection).

353. Both the consistent reductions of the forecast numbers with each new iteration, and the large potential downside (relative to upside), indicate some uncertainty for the sector in the future.

8.6. Manston Air Freight Forecasts (Volume III)

354. Given the lack of transparency in the Azimuth forecasts, it is not possible to undertake a detailed critique of the forecast building blocks / assumptions. The only breakdown provided is by imports and exports. There is no segmentation by carrier type, commodity type etc.

355. The freight forecasts for Manston are summarised in the chart below.

- In Year 2 (the first year of freight traffic), tonnage is forecast to be more than double the previous Manston peak annual value.
- By Year 11, freight throughput is forecast at similar tonnage to 2016 Stansted performance. Growth from Year 2 to Year 11 is forecast at CAGR 9.7%.
- By Year 18, Manston is forecast to exceed the 2016 freight tonnage at East Midlands Airport (the largest dedicated freighter hub in the UK).

[152] (Airbus, 2012, p. 137)

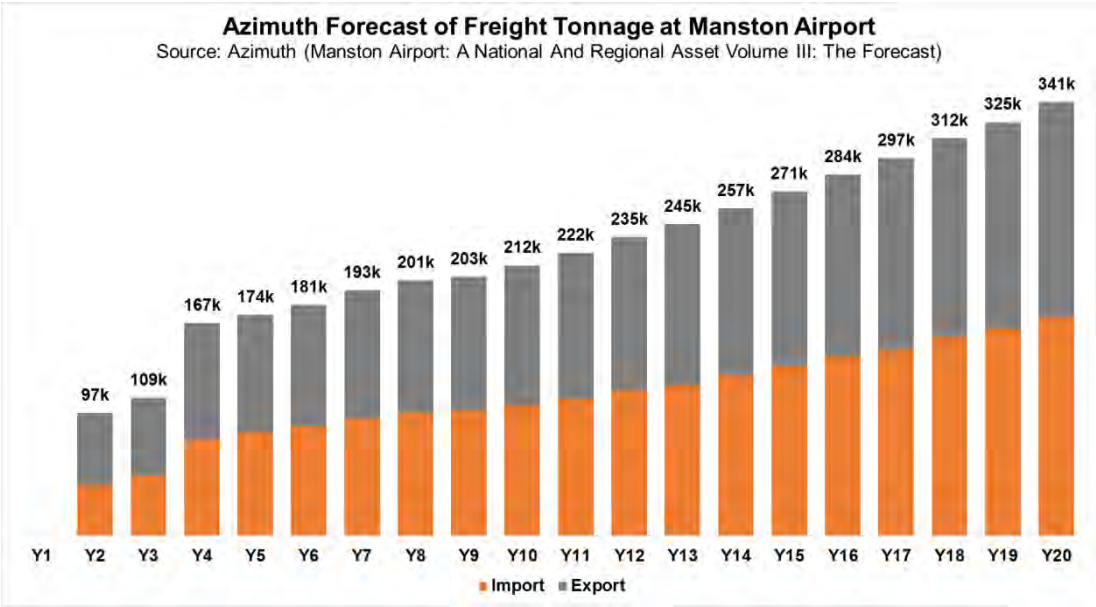

Figure 22- Azimuth Forecast of Freight Tonnage at Manston Airport

356. We have contrasted the projected air freight growth with historic Manston growth, historic UK growth and our base case demand projections for the UK.

- By year 20 of the Azimuth forecasts (assumed to be 2039), Manston freight throughput is forecast to have grown by almost 12 times the 2013 outturn (the last full year of operations). The equivalent CAGR from 2013 is 9.9%.
- This compares to our projected demand growth for the UK market of 2.3% over the same period.

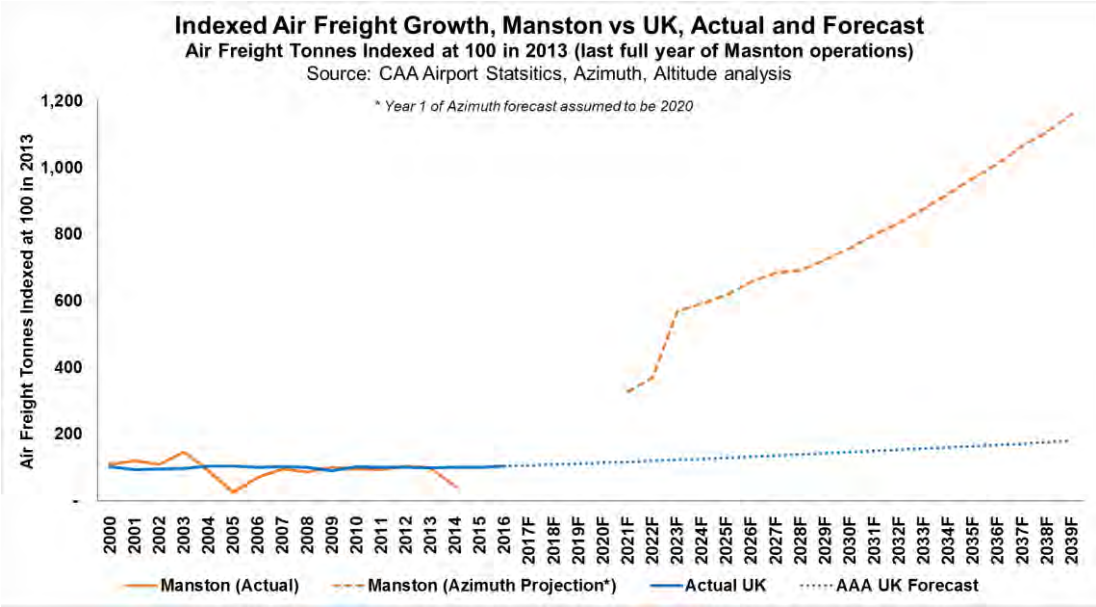

Figure 23- Azimuth Forecast Compared to Historic Growth and UK Forecast

357. We have also compared the Azimuth projections for Manston to the 2016 performance at the leading air freight airports in the European Union.

- The projected volumes for Manston by year 5 would see it comfortably within the top 20 EU airports in 2016.
- By year 20, Manston's projected volumes would be higher than all but the 12 largest EU airports in 2016.
- 19 of the airports in the top 20 are either major/large passenger hubs or major integrator hubs. The one exception is Luxembourg, the home base of Cargolux, which is one of the largest all cargo airlines in the world with a fleet of 27 freighter aircraft[153]. Given that Manston is not expected to develop into either a passenger or an integrator hub, this shows the level of ambition in the Azimuth projections.

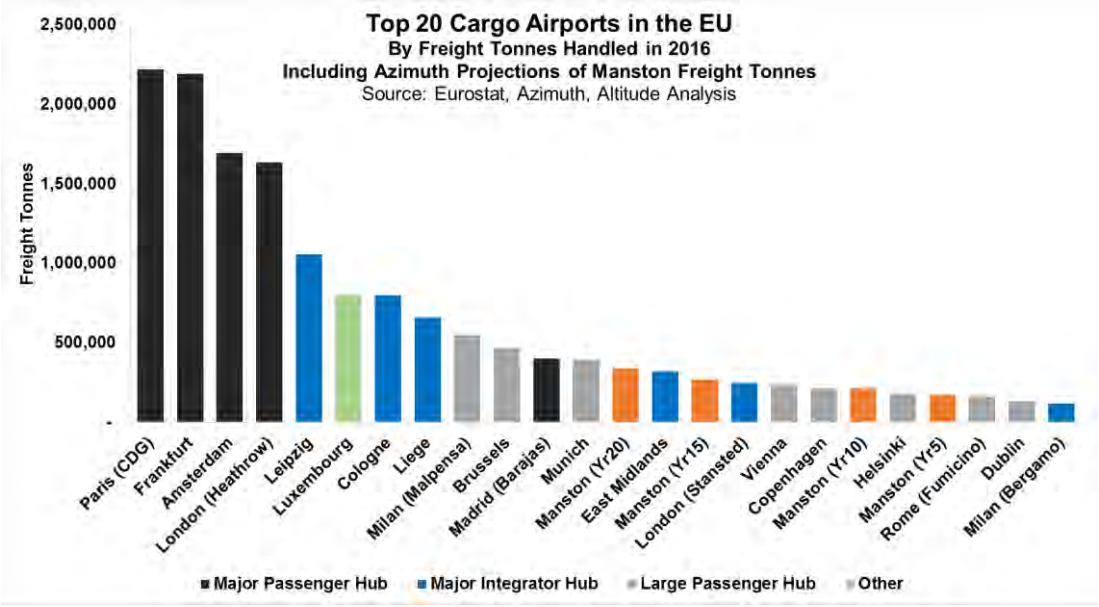

Figure 24- Azimuth Forecast Compared to EU Air Freight Benchmarks

358. Not surprisingly, we consider the forecasts to be not credible, given their extreme optimism and the negligible supporting evidence.

- Growth in freight at Manston would be unprecedented in a UK market context, and in complete contrast to previous historic performance at Manston.
- We do not expect there to be an overall shortage of freighter capacity in the UK or South East. Even if we are wrong in this assessment, Manston and other smaller airports have shown no signs of benefiting from supposed capacity shortages in recent years.
- The rationale for why Manston will be able to achieve a massive uplift on previous performance is weak at best. There is no evidence that bellyhold will not continue to dominate the UK market. The stated advantages of using Manston were present when the airport struggled to grow freight volumes, despite investment in the airport. Lack of capacity was not a material factor.
- As well as the forecasts ignoring historic performance, it also does not reflect the very clear market trends towards consolidation of freight at major passenger and dedicated freighter hubs. UK airports outside the major three freight airports have seen volumes fall.

[153] Ranked the 9th largest cargo airline in the world in 2016 (source: aircargonews). Source for Cargolux fleet is the Cargolux website.

359. There also seems to be a discrepancy between the methodology description and the long term forecast results. On Page 7 it is stated:

> *"Therefore, from Years 11 to 20 an annual percentage growth has been applied to the figures derived for Year 10."*
>
> *"However, to be conservative, and in line with the Airbus forecast, a 4% uplift on the Year 10 figures has been applied to extrapolate the long-term forecast for Manston Airport. "*

360. We therefore expected that long term growth for Manston (Year 11 onwards) would be 4%. The Year 10 to Year 20 CAGR is 4.8% (adding ca. 25,000 tonnes by Year 20, compared to a 4.0% CAGR).

361. As highlighted previously, there are significant issues with using a simplistic annual growth uplift based on global manufacturer forecasts for global tonne-km. Further issues are:

- The manufacturer forecasts have a track record of optimism, and have consistently been revised down in later iterations.
- The Airbus forecast referenced has since been updated, with growth of CAGR 3.8% (lower than the forecast used by Azimuth).
- There is significant variation in growth rates for different parts of the world, with the European market more mature than average. Within the European context, the UK is one of the more mature markets. Therefore, use of a global figure is likely to significantly overstate demand growth in the UK and is not an appropriate tool for looking at demand in the UK market.
- While Airbus and Boeing forecast strong growth in tonne-km in future years, it should be noted that only limited growth in freighter aircraft is envisaged for European based airlines. Airbus forecasts growth of just 42 freighters in European fleets by 2036[154] (Boeing does not appear to provide an equivalent number). Therefore, demand in the most relevant segment for Manston is likely to be lower than the overall average.

362. We are also surprised to see imports and exports almost entirely balanced in the Azimuth forecasts.

- Exports were a minority of overall freight before Manston was closed. Exports accounted for between 6.0% (2010/11) and 24.3% (2004/05) in the last 11 years of operation. The average export percentage in the period 2002/03 to 2013/14 was 12.6%.
- The UK is generally an import rather than an export market for goods. HMRC[155] data indicates that exports accounted for 37.5% of total UK air freight to/from non-EU countries by weight in 2016.
- Therefore, the assumption that flights will be equally loaded for both inbound and outbound operations seems very optimistic.

[154] (Airbus, 2017a, p. 105)
[155] www.uktradeinfo.com/Statistics/BuildYourOwnTables/Pages/Table.aspx

8.7. Manston Cargo ATM Forecasts (Volume III)

363. The Azimuth forecasts also include freighter ATM projections, summarised below.

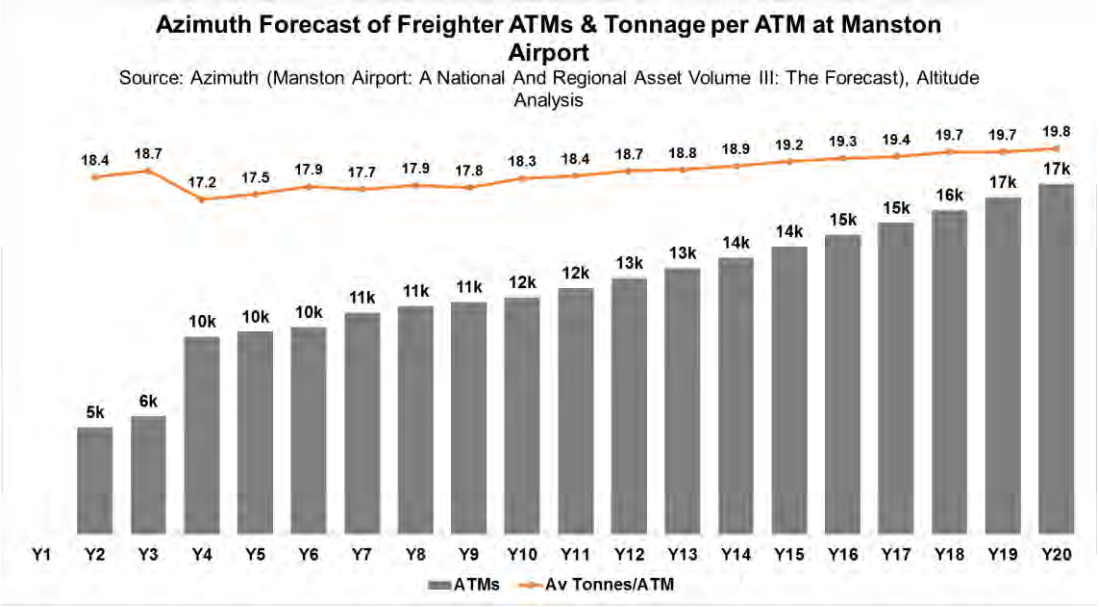

Figure 25- Azimuth Forecast of Freighter ATMs & Tonnage per ATM at Manston Airport

364. The tonnes per ATM forecast figure (ca. 17-20 tonnes) is very low compared to historic levels at Manston. In the last full 5 years of operation, the airport recorded an average of 63 tonnes per cargo ATM.

- The low figure is driven by an assumption that the most predominant cargo aircraft at Manston will be smaller Code C and Code D aircraft. We understand that this differs to the historic pattern, explaining the difference in average loads.
- The projected average load is slightly above current Stansted levels. However, given the lack of integrator operations at Manston, we would have expected the average load figure to be higher.
- As an illustration, if the average load in Year 20 was consistent with historic levels, the same forecast freight tonnage (340,000 tonnes) could be handled by ca. 5,400 cargo flights.

365. We note that York Aviation's professional opinion[156] is that the capability of Manston Airport is 21,000 annual air cargo aircraft movements. This figure is higher than the Azimuth's Year 20 freighter ATM forecast for Manston.

- This is despite very optimistic cargo tonnage projections and average cargo per ATM assumptions that are much lower than historic values.

[156] (York Aviation, 2017)

366. The cargo ATM forecasts have also been compared to leading European airports. This emphasises the extremely challenging nature of the Azimuth forecasts. By year 20, the projected cargo ATMs at Manston are higher than achieved by all but 6 EU airports in 2016. Again, it is noticeable that the leading EU airports for cargo ATMS are either major/large passenger hubs or major integrator hubs, which are not the business models proposed (or that would be realistically achievable) for Manston.

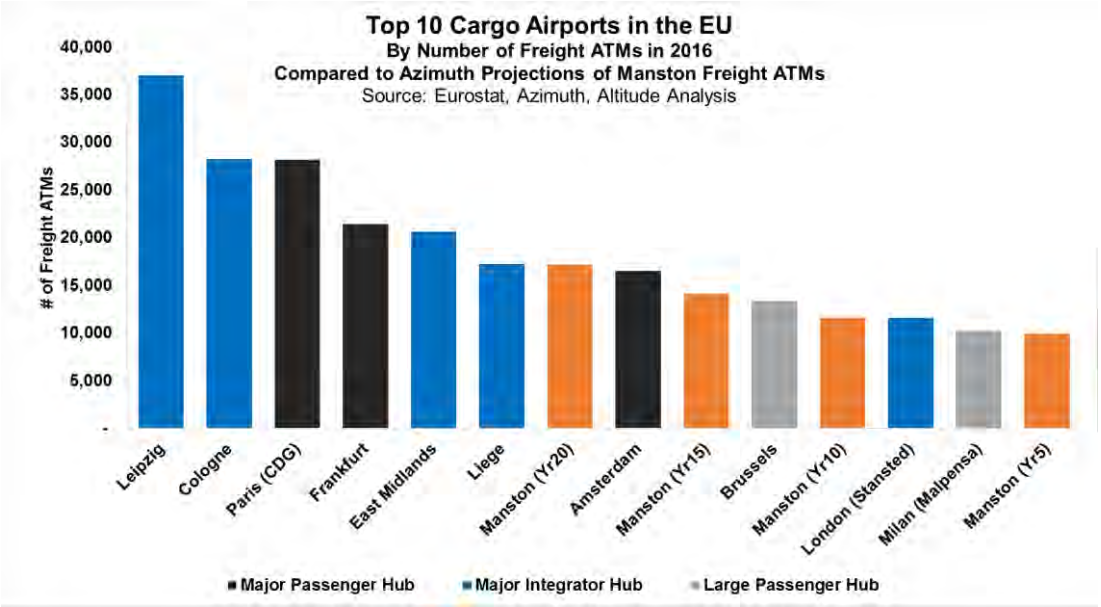

Figure 26- Azimuth Forecast Compared to EU Freighter ATM Benchmarks

367. Finally, we also compare the average air freight tonnes per cargo ATM projected for Manston with leading EU benchmarks. Note that the air freight total includes bellyhold as well as freighter cargo.

368. The projections for Manston indicate low average loads compared to the leading EU airports, with the exception of some integrator hubs (which have a higher proportion of smaller aircraft for short haul flights, reflecting the nature of the express market). This sheds further doubt on the validity of the Azimuth projections for cargo ATMs. If the average loads were higher, this would result in lower cargo ATMs for the same air freight tonnage.

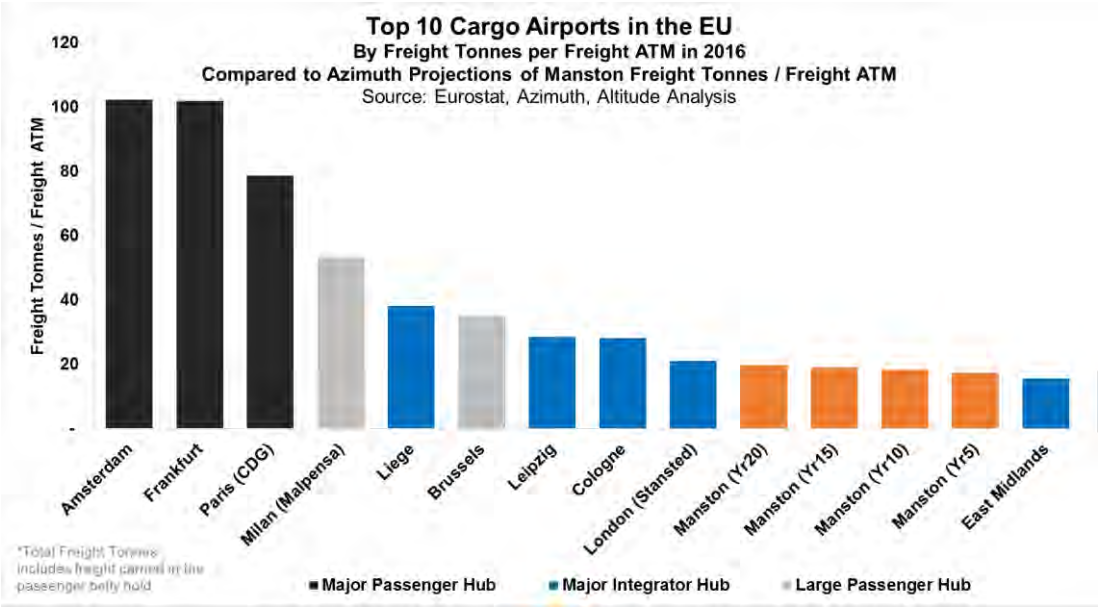

Figure 27- Azimuth Forecast Compared to EU Air Freight Tonnes per Freighter ATM Benchmarks

8.8. Conclusion

369. It is highly unlikely that a re-opened Manston could play any significant role in serving the needs of the UK air cargo industry. There is currently no shortage of overall capacity (beyond that identified specifically at Heathrow), and future demand growth into the long term can be met with planned expansion from the leading cargo airports in the UK.

370. Manston previously operated as a niche air freight airport. While it could theoretically regain this role in the future, its structural disadvantages (location, lack of critical mass, lack of passenger hub, night flight restrictions etc.) will severely limit its potential.

371. Our overall conclusion is that the RSP proposals and the Azimuth forecasts are deeply flawed. The outlook put forward by RSP / Azimuth does not reflect market realities. We would expect freight tonnage and freight ATM outturn at a reopened Manston to be considerably below the Azimuth forecasts. We see no realistic prospect that Manston could ever develop to reach the threshold required of a Nationally Significant Infrastructure Project, namely to increase cargo ATMs by at least 10,000/year compared to the existing capability.

9. Overall Conclusion

372. It is highly unlikely that a re-opened Manston could play any significant role in serving the needs of the UK air cargo industry. There is currently no shortage of overall capacity, and future demand growth into the long term can be met with planned expansion from the leading cargo airports in the UK.

373. The Azimuth freight forecasts for Manston are summarised below:

- In Year 2 (the first year of freight traffic), tonnage is forecast to be more than double the previous Manston peak annual value.
- By Year 11, freight throughput is forecast at similar tonnage to 2016 Stansted performance. Growth from Year 2 to Year 11 is forecast at CAGR 9.7%.
- By Year 18, Manston is forecast to exceed the 2016 freight tonnage at East Midlands Airport (the largest dedicated freighter hub in the UK).

374. We consider the forecasts to be extremely optimistic and not credible, with negligible supporting evidence.

- Growth in freight at Manston would be unprecedented in a UK market context, and in complete contrast to previous historic performance at Manston.
- We do not expect there to be an overall shortage of freighter capacity in the UK or South East. Even if we are wrong in this assessment, Manston and other smaller airports have shown no signs of benefiting from supposed capacity shortages in recent years. Furthermore, there is demonstrable spare capacity at Stansted and East Midlands, both better established and located.
- The rationale for why Manston will be able to achieve a massive uplift on previous performance is weak. The stated advantages of using Manston were present when the airport struggled to grow freight volumes, despite investment in infrastructure and marketing (the previous owners invested £7m on new aprons and taxiways, increasing the freight capacity to 200,000 tonnes[157]). Lack of Manston capacity was not a factor.
- As well as the forecasts ignoring historic performance, they also do not reflect the very clear trends towards consolidation of freight at major passenger and dedicated freighter hubs. UK airports outside the major three freight hubs have seen volumes fall. There is also a trend away from freighter services towards bellyhold freight.

375. Manston previously operated as a niche air freight airport. While it could theoretically regain this role in the future, its structural disadvantages (location, lack of critical mass, lack of passenger hub, night flight restrictions etc.) will severely limit its potential. Even if reinvested, relaunched and supported we would not expect freight volumes to be materially above historic levels, and nowhere close to the volumes forecast by Azimuth.

376. Finally, the forecast of freighter ATMs is not credible.

- By year 20, ca. 17,000 freighter flights are forecast for Manston.
- This represents one-third of current UK freighter flights, in a market where the number of freighter ATMs has been contracting. This trend has been recognised by the Department for Transport, with its 2017 forecasts to 2050 assuming the number of freighter flights in the UK will remain flat at 2016 levels [158].

377. In particular, we note that York Aviation's professional opinion is that the capability of Manston Airport is 21,000 annual air cargo aircraft movements. We would envisage that freighter ATMs at Manston would

[157] (Wiggins Group plc, 2002, p. 16)
[158] (Department for Transport, 2017a, p. 33)

be only a fraction of the level required under Section 23 of the Planning Act of 2003 (being at least 10,000 ATMs/year above the existing capability).

378. In paragraph 48, we put forward four questions in relation to the RSP proposals for Manston. These are more relevant and targeted than the broader questions posed by Azimuth in its first report[159]. The answers to our questions have been developed over the course of this report. We summarise our conclusions in the table below.

Question	Response
Considering planned airport expansions, will there be a need for further airport capacity in the UK for dedicated freighters?	No, planned expansions at existing airports should comfortably provide sufficient freighter capacity until 2040 and beyond.
Will the South East in particular require additional capacity for dedicated freighters?	No, Stansted is planning significant capacity growth. A third runway at Heathrow will provide additional bellyhold capacity (putting downward pressure on freighter demand). Finally, the South East market can be well served by airports more centrally located in England.
Would a reopened Manston be well placed to effectively serve a significant proportion of the dedicated freighter market?	No, a reopened Manston would only serve a niche role, similar to its historic record. It has a poor location and operating restrictions.
Are there other potential airport options for new dedicated freighter capacity?	Yes, there are many UK airports with excess freighter capacity. For example, Doncaster Sheffield Airport has a central UK location. It markets itself as the UK's freighter gateway. It benefits from a large site with a long runway, and has 24 hour operations.

Table 3 – Summary of Analysis of Potential Future Freight Role for a Reopened Manston Airport

379. As can be seen above, when one asks more targeted questions, the outcome is very different to that presented by Azimuth. Our overall conclusion is that the RSP proposals and the Azimuth forecasts are deeply flawed. The outlook put forward by RSP / Azimuth does not reflect market realities. We would expect freight tonnage and freight ATM outturn at a reopened Manston to be considerably below the Azimuth forecasts. We see no realistic prospect that Manston could ever develop to reach the threshold required of a Nationally Significant Infrastructure Project, namely to increase cargo ATMs by at least 10,000/year compared to the existing capability.

[159] (Azimuth Associates, 2017 a, p. I)

10. Appendix - Overview of the Cargo Industry

10.1. Modes of Transport for Transportation of Cargo

380. Air cargo makes up only a small proportion of global cargo (by tonnage). Seabury estimated that in 2016, air cargo had a share of just 1.5% of containerised air and sea trade[160]. For international transit in particular, sea is the dominant mode of cargo transport.

381. In many cases, cargo reaches its destination using a mix of modes. Road and rail are commonly used to collect cargo from many different shippers across a large geographic area, and bring it to a central hub for consolidation, before onward shipping by air or sea (with a similar process occurring at the other end of the air/sea journey in order to distribute cargo to consignees).

382. The different modes of transport each have inherently different costs associated with them, usually related to speed of transit and quantity of product being moved. Air (a relatively fast and relatively low-quantity mode) is more expensive than sea (a relatively slow mode capable of moving vast quantities of product at a time). Generally, products that make use of air transportation are high-value and/or time critical, and can be easily packaged.

383. Transportation of high value items by air helps businesses maximise profits by minimising the time for which its inventory is tied up in supply chains. For high value items, the benefits of being able to quickly realise the value of product inventory and reinvest can outweigh the additional cost of air transport. As such, the proportion of global trade that travels by air is much greater when measured by value (ca. 35%[161]), than when measured by tonnage.

384. For time critical products, the trade off between a) the cost of transport, and b) the deterioration in the value of the product with time, can be a key factor in determining what mode (or modes) to use. Products such as flowers, newspapers and some pharmaceuticals have no value if they are not available to consumers a short period after they are shipped. For these products, air is often the only viable mode of transport.

385. The nature of the cargo, or its physical size, may also influence mode choice (for example heavy plant machinery may be too large for air transport, while air transportation of many substances is restricted or prohibited).

[160] (Seabury, 2017, p. 4)
[161] (IATA, 2017a, p. 5)

10.2. Types of Air Cargo

386. Whilst there are many different types of air cargo, at a high level, most can be categorised as one of general freight, express or mail.

- Mail is typically letters and parcels, delivered to final destination by the postal service of a given country.
- Express cargo is typically 'next-day' shipments that are collected from the shipper by close of business and are required by the consignee by close of business the following day.
- General freight is everything else (note that general freight is a very broad category which also includes several types of low volume specialist cargo such as hazardous, valuable and live animal freight).

387. The air cargo market is served by various different business models. These include:

- Cargo-only airlines, such as Cargolux, which operate aircraft carrying only cargo.
- Integrators, such as DHL Express, which facilitate cargo transportation from shipper through to consignee, and typically own/lease and operate the vehicles necessary to achieve this (and which carry only cargo). Integrators tend to have a focus on express cargo.
- Traditional airlines such as British Airways, which carry cargo on their passenger flights (known as bellyhold cargo). These carriers may additionally operate cargo-only flights (in which case they are known as combination carriers).
- Couriers and road hauliers, which move cargo between the shipper/consignee and the airport hubs.
- Freight forwarders, which typically help shippers to organise the transport of freight, but do not take part in actually moving it.

388. Steer Davies Gleave was commissioned by the UK Department for Transport to improve its understanding of the UK air cargo industry. Its report, 'Air Freight: Economic and Environmental Drivers and Impacts' provides a breakdown of the UK air cargo market in 2008, by type of cargo and type of carrier – see below. General cargo and specialist products accounted for 75% of the market, express for 18% and mail for 7% (all by tonnage)[162].

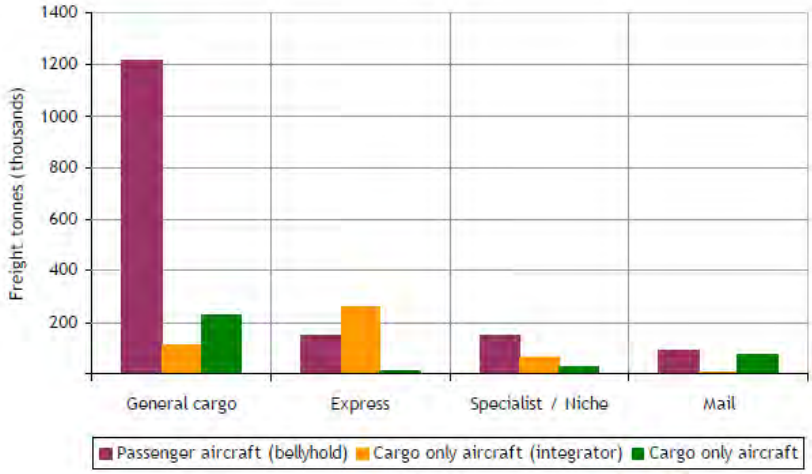

Figure 28 - UK air cargo in 2008 by type of cargo and type of carrier

Source: Steer Davies Gleave [2010], AIR FREIGHT Economic and Environmental Drivers and Impacts

[162] (Steer Davies Gleave, 2010, p. 47)

Bellyhold Cargo

389. A commercial passenger aircraft has a considerable amount of space underneath the passenger cabin, used to store the checked baggage of passengers. The checked baggage generally does not utilise all this space, and some airlines choose to generate additional revenue by filling it with cargo.

390. The routes operated, the aircraft used, and flight timings are typically determined by passenger demand. However, passenger demand does not always align with cargo demand. Some routes may have very little cargo demand, while others may have much more than can be accommodated.

391. The revenue generated from bellyhold cargo can be a significant minority of overall revenue. Furthermore, carrying bellyhold cargo does not substantially increase costs (for example, the aircraft itself and the crew, the landing fees etc are incurred with or without the cargo).

392. Bellyhold cargo can therefore offer an airline a significant revenue upside opportunity, with little downside risk (as long as the airline is careful to price cargo to cover the incremental cost of carriage e.g. increased fuel burn).

393. Loading and unloading cargo from the aircraft can make very short turnaround times impossible to achieve. Therefore short haul low cost operations, which rely on very high aircraft utilisation to achieve profitability, typically do not to carry bellyhold cargo.

394. The capacity available for cargo in the bellyhold of passenger aircraft is difficult to estimate. It depends on many factors, including how many passenger and crew bags there are to accommodate (and how heavy they are, and how efficiently a given airport's staff loads those bags), the volume of fuel needed, the temperature and altitude of the departure airport, the type of engines etc. Many of these factors vary significantly from departure to departure, even if the exact same aircraft hull is used.

395. Complicating matters is that the limiting factor on the amount of cargo that can be uplifted depends on its density. One flight may depart with a bellyhold that is physically full but with spare weight capacity. Another may depart with space available in the bellyhold but not able to carry more weight. Reporting of air cargo load factor typically states only the weight used versus the overall available weight.

Cargo Carried on Cargo Aircraft

396. A cargo aircraft (or freighter) is operated purely for cargo, and carries no commercial passengers. Most of the aircraft used are very similar to commercial passenger aircraft, with the exception that all seats and overhead storage, carpets, toilets, galleys etc. are removed from the space that is normally the passenger cabin; this space is then filled with cargo. Additionally, as there is no checked baggage, all space underneath the passenger cabin is available for cargo. For example, a 747-400 cargo aircraft can carry multiple times more freight than a 747-400 passenger aircraft.

397. As there are no commercial passengers on a freighter aircraft, the size of aircraft operated, the routes and the timings are all chosen to fit cargo demand.

398. IATA highlights the higher average yield from freight carried on cargo-only aircraft in comparison with that carried in the bellyhold of passenger aircraft:

> *"At an aggregate industry level, cargo-only services have exhibited a greater sensitivity to fuel price changes. Cargo only services on average earned a premium of 10% in 2014 over belly hold services"*[163]

399. Note that the yield premium of freighters is not a comparison on a like for like basis. It will include, for example, the impact of freighters serving different markets.

[163] (IATA, 2015, p. 5)

400. The absence of commercial passengers also means that all costs must be covered by the revenue from cargo only. The impact of this on profitability (in comparison with bellyhold cargo profitability) is demonstrated in the following illustrative example (from a 2015 Seabury presentation on air cargo trends).

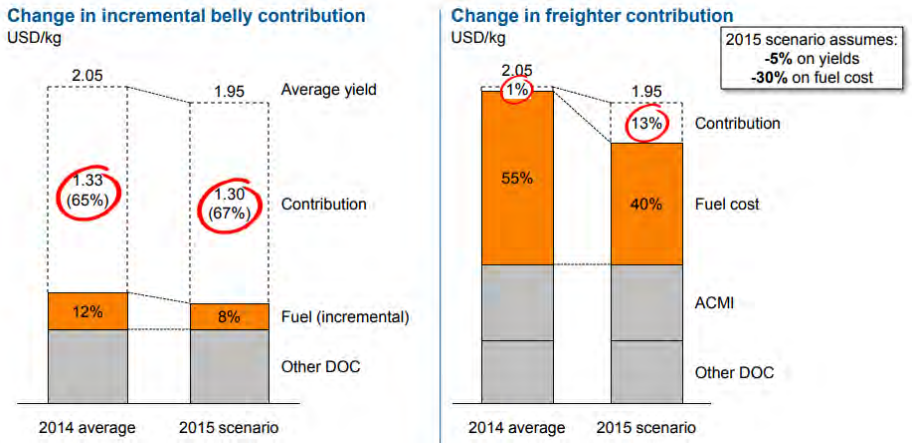

Figure 29 - Freighter vs bellyhold profitability, and impact of fuel price

Source: Seabury [2015], 'Air Cargo 2015: Recent trends and impact on air cargo industry'

401. In 2015, when carrying an item on a freighter, only 13% of revenue goes to profit. Carrying the same item at the same price, but as bellyhold cargo, results in 67% of the revenue going to profit[164].

402. Furthermore, it is seen that freighter profitability is more sensitive to fuel price than bellyhold cargo (fuel price reduced by 30% between 2014 and 2015; illustrative contribution increased by 12 percentage points ("ppts") on the freighter, but only by 2ppts for the bellyhold cargo)[164].

403. Whilst the current low fuel price environment means freighter profitability has increased, it also means future increases in fuel price could significantly reduce the profitability of freighter operations.

404. Another challenge for operators of freighter aircraft is that, unlike passenger demand, cargo demand can be highly directional. A freighter may be full on one sector, and carry very little on the return journey. Long haul freighters may operate circuitous routes with multiple stops (taking them literally all around the world in some cases), in order to minimise flying on sectors with low cargo demand.

405. Freighters may be scheduled (the flight operates regularly to a published timing and route), or charter services (a flight operated on a one off basis to meet irregular/unusually large demand e.g. moving Formula 1 race equipment between one race location and the next).

Trucking

406. The air cargo industry primarily uses trucking in one of two ways. There are road feeder services, operated to move cargo between the shipper/consignee and the airport hub, and there are trucks operated between airport hubs in place of flights.

407. According to Boeing, the use of road feeder services enables carriers to "*extend their networks and add scheduling flexibility*"[165].

408. Integrators generally operate their own road feeder services, while cargo-only and traditional airlines may use third parties (as well as accepting cargo from independent hauliers and couriers).

[164] (Seabury, 2015, p. 7)
[165] (Boeing, 2016, p. 31)

409. The book 'Moving Boxes by Air: The Economics of International Air Cargo' states that trucks operate between airport hubs in place of flights where and when "*the lower unit cost of operating trucks*"[166] makes it sensible to do so. For express freight, this can often be the case on shorter routes, as described by the Steer Davies Gleave report[167]:

> *"for distances of 400 – 500km, cargo will generally go by road. For distances above this, flights will be used, except at weekends, where many packages are only required on the Monday and so can be trucked. The circa 500km cutoff is a function of the integrators next day delivery guarantee."*

410. On such routes, relatively low aircraft utilisation (air transport of express freight is typically required overnight, but not through the day) combined with the lower time benefit of air transport, makes trucks a preferable option in many cases.

411. Regarding less urgent general cargo, the same report states[167]:

> *"Users of air freight with a requirement to send a consignment over 500 kilometres within Europe but without the need for next day delivery, will be likely to purchase a modal option other than air freight".*

412. The lower time benefit of air transport on short routes is derived from the high proportion of the total journey time that is taken up by sorting/handling and ground-based distribution; globally, the average air cargo flight accounts for just 33% of the average air cargo shipment time[168]. On routes with below-average flight times, this percentage falls even lower.

[166] (Morrell, 2011)
[167] (Steer Davies Gleave, 2010, p. 66)
[168] (IATA, 2017a, p. 7)

11. Appendix - Air Cargo Global Market Trends

11.1. Air Cargo Share of Global Cargo

413. While air freight had a share of 1.5% of the world's total air and sea freight in 2016, this share has been dropping during the period since 2000 (when air freight had a share of 2.5% of the global market). This is illustrated in the chart below[169]. Note that over the period 2013-16, air share of the global market has stabilised at ca. 1.5%.

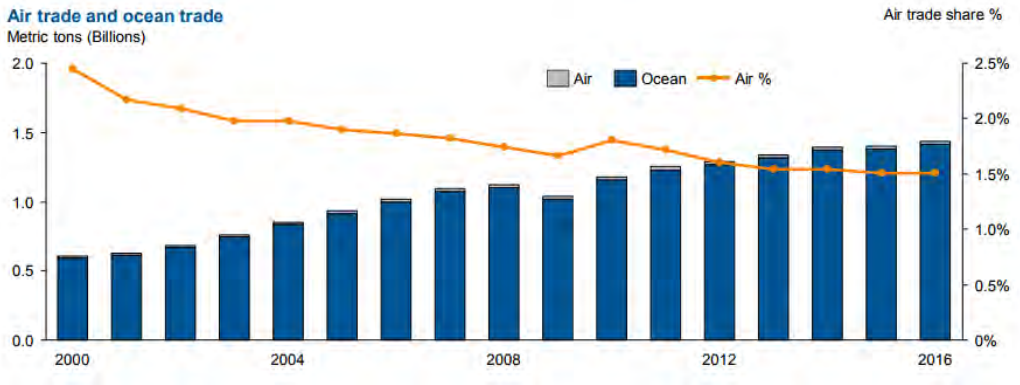

Figure 30 – Evolution of air and ocean freight tonnage with time

Source: Seabury

414. The 2008 financial crisis appears to have marked a shift in the nature of global trade. Before this point, sea and general air freight were growing strongly. In the period since 2008, growth of both has reduced dramatically (sea from 8.9% to 2.5% CAGR, general air freight from 4.3% to 0.9% CAGR). Conversely, the period since 2008 has seen rapid growth of express and mail air freight, as well as China-Europe rail (although these are from a much smaller base, particularly China-Europe rail)[170].

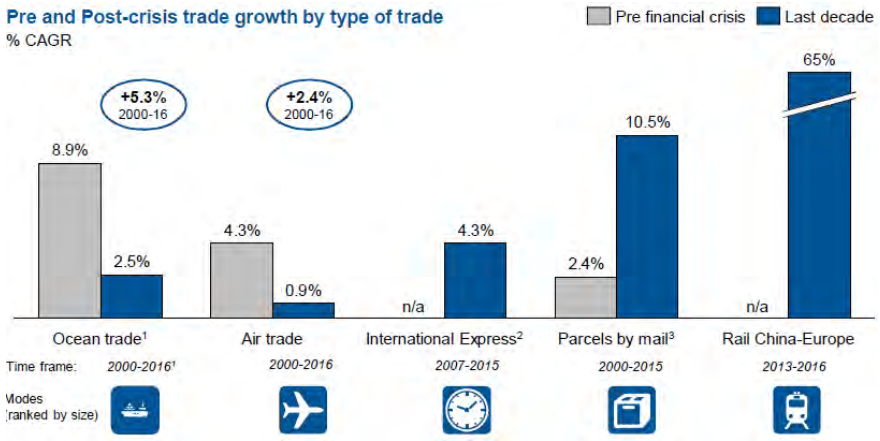

Figure 31 – Cargo growth rates by mode (pre- and post- financial crisis)

Source: Seabury

[169] (Seabury, 2017, p. 4)
[170] (Seabury, 2017, p. 23)

Trucking

415. Within Europe, the past decade has seen an increase in the use of trucking as a substitute for air transport. Referring to Europe, Boeing provides the diagram below, and states[171]:

> *"Since 2006, airport pairs of truck flights grew 3.1 percent on average per year. Weekly frequencies of truck-flights grew 14.3 percent on average per year between 2006 and 2013, but the growth has been at pause since 2013"*

Figure 32 – Example of the growth of trucking within Europe

Source: Boeing

416. The same source also refers to a rise in 'long haul truck-flight operations in Europe', claiming "*their dramatic rise over the past decade has clearly contributed to a decline in growth of scheduled freight carried by air*". Steer Davies Gleave provides data showing a similar trend over the period 2002-07[172]:

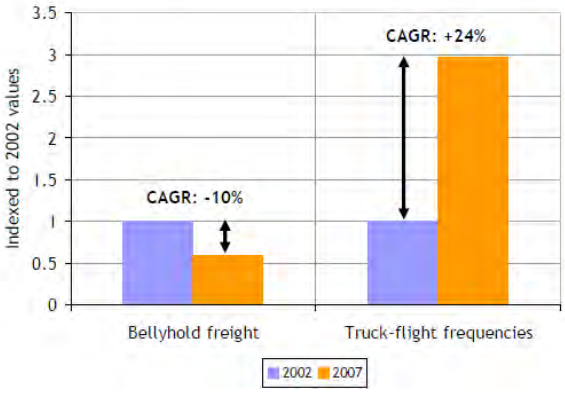

Figure 33 – Comparison of bellyhold airfreight tonnage and truck-flight frequency growth

Source: Steer Davies Gleave (2010), AIR FREIGHT Economic and Environmental Drivers and Impacts

[171] (Boeing, 2016, p. 32)
[172] (Steer Davies Gleave, 2010, p. 7)

11.2. Air Cargo Mix

417. Within air cargo, the low growth of general freight and the rapid growth of express and international mail is shown explicitly in the chart below[173]: Note that a significant proportion of the growth in general freight since 2008 occurred in 2010-11, and that growth of general freight since then has been lower (or even negative).

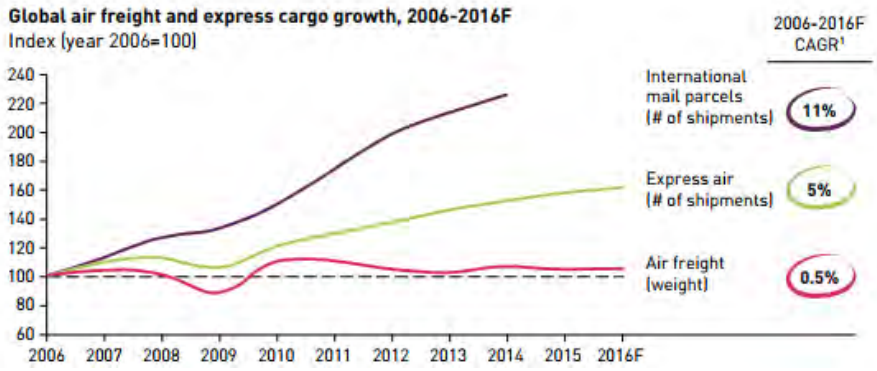

Figure 34 – Air cargo growth rates by type of cargo

Source: Seabury

418. Boeing confirms the relatively fast growth of express cargo[174]:

> *"International express traffic continued to grow faster than the average world air cargo growth rate, expanding 7.2 percent in 2014 and 3.6 percent in 2015".*

419. Within general freight, evolution of certain commodities has hurt air cargo volumes. For example, due to the miniaturisation of electronics, a modern laptop is significantly smaller and lighter than a personal computer from 1995, and so takes less space and weight to ship.

[173] (Seabury, 2016, p. 45)
[174] (Boeing, 2016, p. 7)

11.3. Bellyhold and Freighter Capacity versus Demand

420. In recent years, air cargo capacity has increased dramatically. This has been driven primarily by increased passenger demand resulting in an increase in the number of passenger aircraft (and therefore an increase in bellyhold capacity). Boeing states "*lower-hold capacity increased 27 percent from 2010 to 2015… the number of large freighters in service increased by 8 percent over this same period*"[175]. A similar trend is seen in the chart below from CAPA[176]:

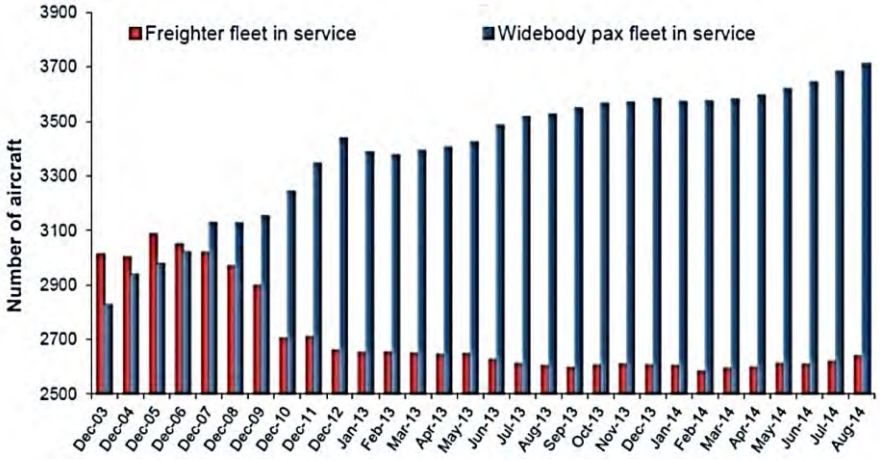

Figure 35 – Number of freighters and widebody passengers aircraft in service globally, Source: CAPA

421. The global financial crisis in 2008 had a significant impact on freighter numbers, while high fuel prices in the period 2011-14 is likely to have been a factor that kept freighter numbers depressed (see paragraph 400).

422. Whilst cargo capacity has been growing rapidly, cargo demand has not kept pace. This is illustrated by the fact that, as of Q4 2016, 15% of widebody freighter capacity globally was in storage[177].

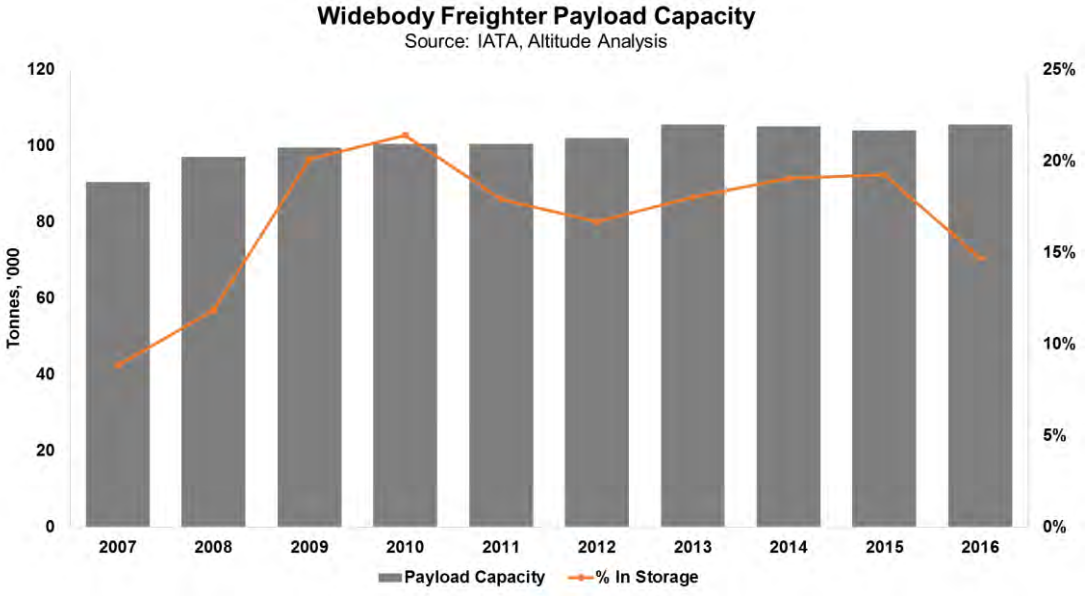

Figure 36 – Change in widebody freighter payload capacity with time

[175] (Boeing, 2016, p. 3)
[176] (CAPA, 2014c)
[177] (IATA, 2016, p. 3)

423. Additionally, the global average load factor achieved by airlines carrying cargo in the first 6 months of 2017 was just 45%[178]. Referring to bellyhold capacity, Airbus states that "*cargo load factors, on average, do not exceed 30 to 40% on international routes*"[179].

424. The chart below from IATA[180] shows the growth of both passenger and freight demand; since 2008, growth of passenger demand has far exceeded growth of cargo demand. This illustrates why growth of bellyhold capacity has outstripped that of freighters, why a number of freighters are being kept in storage, and why there remains significant amounts of unused cargo capacity.

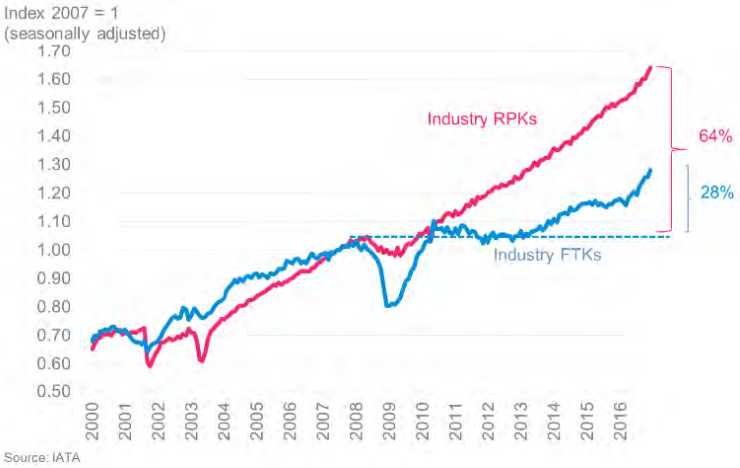

Figure 37 – Passenger growth compared with air freight growth, Source: IATA

11.4. Global Market Outlook

Outlook from Selected Carriers

425. The trend towards a reduced role for dedicated freighter aircraft (see Section 3.3) is reinforced by airline developments. In the text below, we provide selected examples of airlines cutting back on usage of freighter aircraft.

426. Luxembourg based dedicated freighter operator Cargolux (also in the world's top 10 air cargo carriers), acknowledges in its 2016 annual report the challenging operating environment it faces. The annual report also raises the possibility that dedicated freighter operators will not be viable in the future:

> *"There is clearly a current oversupply of capacity in the markets, which makes for a more challenging environment for cargo operators that have to achieve a healthy level of sustainable profitability…. There has been a modal shift from air freight to sea freight over the years whilst rail freight between Asia and Europe is an additional competitive challenge…. I also do not believe that it will be beneficial for shippers and forwarders if dedicated air freight operators were to disappear from the market."*[181]

[178] (IATA, 2017b)
[179] (Airbus, 2014, p. 35)
[180] (IATA, 2016, p. 3)
[181] (Cargolux, 2017, p. 7)

427. In 2014, the largest UK based combination carrier, IAG Cargo, decided to cease long haul flying using its own dedicated freighter aircraft (which had operated from Stansted).

> *"IAG Cargo CEO Steve Gunning said the carrier's dedicated cargo operations "made no profitable contribution" and the end of its freighter services will make the carrier "financially stronger""*[182]

428. Several other leading airlines are cautious about the prospects for the freighter segment. The following quotes are from a selection of combination carriers, all in the world's top 10 carriers of air cargo:

> *"Air France-KLM Martinair Cargo is pursuing its restructuring within a difficult economic environment. Air freight is being impacted by the situation of structural industry overcapacity…. the business is progressively retiring a portion of its full-freighter fleet to refocus most of its activity on the bellies of passenger aircraft. Within the framework of the Perform 2020 plan, this full-freighter fleet will thus be progressively reduced to five aircraft by 2017"*[183]

> *"Air France-KLM said freighters would become a "niche product" as cargo markets face continued overcapacity. Air France-KLM executive VP Erik Varwijk said slowing demand and greater belly capacity on scheduled passenger services made exclusive freighters redundant"*[184]

> *"Emirates VP cargo commercial operations Duncan Watson said the airline does not plan to add more freighter aircraft in the foreseeable future"*[185]

> *"Singapore Airlines Group subsidiary SIA Cargo faces another challenging year as conditions in the cargo market remain unfavourable. SIA Cargo has been unprofitable for seven of the past eight years, with losses further widening in recent quarters. Cargo capacity has been relatively flat since 2009, with additional belly space from passenger aircraft offsetting freighter reductions…. SIA Cargo is cutting its 747-400 freighter fleet in 1QCY2017, to only seven aircraft. At its peak in 2007 SIA Cargo operated 16 747-400 freighters. SIA will need to decide within the next few years whether to cut its freighter operation entirely or start investing in 747 replacements"*[186]

[182] (CAPA, 2014b)
[183] (Air France-KLM Martinair Cargo, 2017)
[184] (CAPA, 2014a)
[185] (CAPA, 2016)
[186] (CAPA, 2017)

12. Appendix - Case Studies of Leading European Cargo Airports

12.1. Context

429. In assessing the future potential of a re-opened Manston Airport, we have undertaken a review of Leipzig and Liege airports. Both are leading airports for all-cargo operations (rather than passenger hubs providing bellyhold capacity).

430. We have identified some of the key attributes that have helped Leipzig and Liege develop major roles within the European air cargo sector.

12.2. Leipzig

431. Leipzig Airport handled more than 1.0m tonnes of cargo in 2016. This throughput made it one of the top 5 cargo airports in Europe[187].

432. Leipzig is located in eastern Germany, ca. 100km from the Czech border and ca. 160km from the Polish border. Regarding its location, the airport states:

> *"[it is] located at the very heart of the central German logistics region…. [it is] an ideally located alternative to enter the growing markets in East Europe and Asia…. Besides outstanding infrastructural connections, the region is characterised by its motivated and qualified workforce and a high level of potential with regard to available space and investment"*[187]

Figure 38 - Trucking isochrones from Leipzig; 6hrs (dotted), 8hrs (solid-medium) and 10hrs (solid-thick)

Source: Leipzig Airport[188]

433. Leipzig Airport markets its proximity to eastern Europe as a benefit due both to the increasing economic power of this region, as well as the reduced flight time to Asia (compared with airports further west).

434. The airport has published a document stating trucking times to locations in eastern and western Europe. Only one of the ten examples given is within the 500km radius often considered as the realistic limit for express cargo. Three of these trucking destinations are over 1000km from Leipzig[189]. This gives some indication as to the possibilities for trucking of general cargo.

[187] (Leipzig Airport, 2017)
[188] (Leipzig Halle Airport)
[189] (Leipzig Halle Airport, 2014, p. 10)

435. Leipzig Airport has direct access to the European motorway network, and also has direct access to the rail network making rail-air transhipment possible.

436. The airport has two 3,600m runways, and operates cargo flights 24 hours a day. It has support from politicians at several levels for 24-hour operations. For example, the President of Saxony has said:

> *"Leipzig is in the second position of all hubs in Germany and this is why the state government and the city of Leipzig are convinced that 24 hours a day air traffic is necessary"*[190]

437. Note that this support appears to have been hard-won; the airport is reported to have spent ca. €100m on a noise control system, and is also said to be in regular communication with relevant stakeholders regarding noise[190].

438. DHL is one of the Leipzig Airport's largest customers. It decided to make the airport its European hub in 2004, began operations there in 2008, and now handles "*an average of 1,600t of cargo every day*"[191]. As of October 2016, DHL's total investment on its Leipzig hub was €655 million[192].

439. DHL Chief Executive Frank Appel said of Leipzig:

> *"It is in an excellent location, strategically positioned in the heart of Europe and is also in an excellent position to reach Asia and that is why we decided to expand our capacities here"*[190]

440. DHL's Leipzig hub manager is reported as adding other reasons for choosing Leipzig, including:

> *"the excellent road and rail connections, unrestricted night flights and a pool of skilled workers"*[190]

441. DHL operations support two of the airport's largest operators of scheduled cargo flights: EAT Leipzig is a wholly-owned subsidiary of DHL (it operates DHL's parcel and express flights, as well as providing adhoc charter services), while AeroLogic is a joint venture between Lufthansa and DHL (primarily operating long haul cargo-only flights for DHL).

442. The airport is also home to Ruslan Salis, a leading air charter company offering heavy lift services for large items of freight. A relatively large number of other carriers also operate charter cargo flights from Leipzig (34 are listed on the Leipzig Airport website). This indicates the airport is able to offer a competitive proposition for a wide range of different types of air cargo.

[190] (Air Cargo News, 2016a)
[191] (Saxony Economic Development Corporation, 2017)
[192] (Cargo Forwarder Global, 2016)

12.3. Liege

443. The airport handled 660,000t of freight in 2016, making it the 8th largest cargo airport in Europe (bigger than both East Midlands and Stansted). The majority of freight was general freight (ca. 56%), with express accounting for ca. 25%. Freight handled at Liege has grown at an average rate of 5.6% CAGR over the 4-year period 2013-16[193].

444. Liege's proximity to major population centres of northern Europe means that there are "*around 400 million consumers*"[193] within easy reach of the airport. This advantageous position means that 66% of all European freight transits through the region[193].

445. It has direct access to the motorway network. The airport states:

> *"Motorway transport is now the solution preferred by major logistics players and those specialised in the transport of goods in Europe…. The Flexport® is less than one day by truck from the largest European cities, thus reaching around 400 million consumers. It offers the advantage of an excellent, uncongested motorway network"[193]*

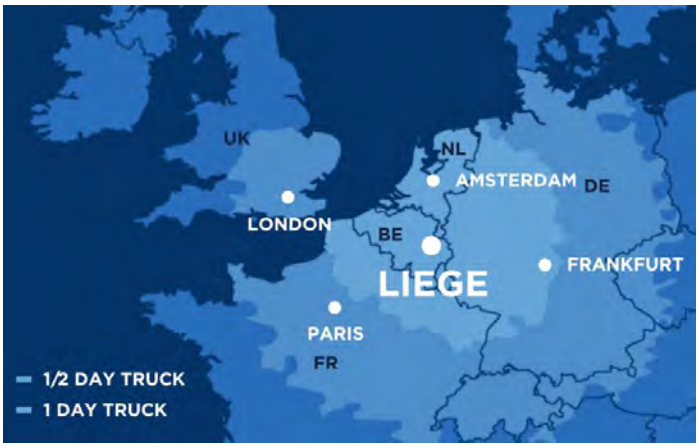

Figure 39 - ½ day & full-day trucking isochrones from Liege airport

Source: Liege Airport[193]

446. Whilst Liege benefits from an advantageous geographic location, the regulatory environment in which it operates is also conducive to air cargo; the airport operates 24-hours per day, 7 days per week:

> *"The other advantage at Liège is genuine 24 hour operations, an increasing rarity in Europe…. This does not just mean that the runway operates through the night but that there are no limits of any kind on the number of night slots that can be offered, and no extra charge for landing then…. This has been guaranteed by local government for 30 years and it is backed up by positive action, including purchasing and demolishing some houses under the flight path and spending heavily on noise insulation for others"[194]*

447. Note that when trying to construct a viable slot pair where one end of the route is a constrained airport, the ability to land at any time of day at the other airport can be particularly valuable. As more and more airports become constrained, 24-hour operation may therefore become increasingly important.

448. TNT is the main customer at Liege. Despite a recent buyout of TNT by FedEx, there appears to have been little loss of traffic to FedEx's handling facilities at other airports. This perhaps indicates that integrators are reluctant to shift location once their infrastructure investment has been made.

[193] (Liege Airport, 2017)
[194] (Air Cargo News, 2016b)

449. Other customers with significant tonnage at the airport include CAL, Ethiopian Cargo, Qatar Cargo, El Al Cargo and Icelandair Cargo. Similar to Leipzig, the diverse customer mix is indicative of the competitive proposition the airport offers.

450. The main runway is 3,690m long meaning many kinds of large cargo aircraft can take off at full capacity[195]. Whilst this is typically not necessary for express cargo carriers operating short-haul flights, it may be a key enabler for some long haul freighter operators.

451. Freight-only carriers also get advantages at Liege that they do not find at many other European airports. VP Commercial Steven Verhasselt said in 2016:

> *"The general trend is towards belly cargo but when you are operating a freighter, you want to fly into an airport dedicated to helping that type of cargo…. If we can save you a block hour from not having to taxi or wait for passenger airlines to land first, than [sic] that is a real cost saving and more important than cheaper landing or parking rates"*[196]

452. TNT and CAL both switched from Cologne to Liege in the 1990's "*attracted by Liege's strategy to focus on air freight in general and on the express business specifically*"[197], and are now amongst the largest of the airports customers.

453. The airport continues to expand its cargo handling facilities, with a new €4 million, 6,000m^2 cargo terminal due to open in 2017. It is also taking a role in the development of the 100+ hectares of land around the airport.

- For example, by forming a partnership – Land In Liege – with the land owner, which aims to "create synergies between the airport development and the development of the areas surrounding it"[198].

12.4. Conclusions

Leipzig and Liege airports are typical – albeit leading – integrator hubs. The airports are structurally different from Manston in many regards. There is no realistic prospect for Manston to develop a similar business model. However, without the cargo volumes associated with an integrator hub (or a major passenger hub), Manston will find it very challenging to generate significantly higher cargo throughput than historically achieved.

Liege / Leipzig Feature	Situation at Manston
Located close to motorway network, maximising catchment size.	Located on an A-road, ca. 40 miles from the motorway network (M20).
Catchment contains many of Europe's largest population centres.	Catchment is limited by the English Channel / North Sea.
24-hour operation.	Not clear but likely to be restricted.
Runway length of at least 3,600m, enabling largest aircraft to take off with full payloads.	2,750m runway, potentially limiting take-off payload for largest aircraft.
Significant investment in noise control measures.	Not clear.
Significant investment in cargo handling facilities.	Not clear.
Support from regional government.	Not clear.

Table 4 – Liege/Leipzig Structural Features vs Manston, Source: Altitude

[195] (Liege Airport, 2017)
[196] (Air Cargo News, 2016b)
[197] (Cargo Forwarder Global, 2017)
[198] (Land In Liege, 2017)

13. Appendix – Supporting Material

13.1. Assumptions made to calculate indicative cargo bellyhold capacity

454. Despite the difficulties in stating a cargo capacity for an aircraft type (see paragraphs 394-395), by making some assumptions[199] it is possible to generate estimated like-for-like comparison of the potential cargo capacity of different aircraft types.

Aircraft	Typical Passenger Capacity (#)	Indicative Cargo Capacity		2017 ATMs, UK-World (excl Europe)
		Volume (m^3)	Mass (kg)	
Newer Aircraft Types				
B777-300	350-400	116	24,000	15,000
A350-1000	350-400	112	25,000	-
B777-9X	350-400	109	30,000	-
B787-10	300-350	105	21,000	-
A350-900	300-350	95	20,000	2,100
B787-9	250-300	91	22,000	12,000
A330-900neo	250-300	84	15,000	-
B787-8	200-250	71	15,000	11,000
A330-800neo	250-300	64	22,000	-
A380	400+	57	34,000	12,000
Older Aircraft Types				
A340-600	350-400	109	26,000	2,000
A330-300	300-350	84	15,000	6,000
B777-200	300-350	77	22,000	3,000
B747-400	400+	71	25,000	12,000
A340-300	300-350	71	15,000	500
A330-200	200-250	64	22,000	6,000
B767-300ER	150-250	46	23,000	9,000

Note there are additional ATMs where the precise aircraft model is not known: B777: 18,000, B787: 2,000, A330: 500
Source: Boeing, Airbus, British Airways, JAL Cargo, Qatar Cargo, Qantas Cargo, OAG, Altitude Analysis

Table 5 – Indicative cargo capacity of selected aircraft types
Source: Boeing, Airbus, British Airways, JAL Cargo, Qatar Cargo, Qantas Cargo, OAG, Altitude Analysis

455. The following set of assumptions are intended to enable comparison of the cargo capacity (weight and volume) of different aircraft types on a basis that is as close to like-for-like as possible.

456. They do not result in a cargo capacity that is directly comparable with airline or manufacturer stated capacities, nor with cargo capacities actually achieved by the aircraft operators in the real world.

- Seat capacity as stated by the aircraft manufacturer. Where more than one configuration is listed, the highest capacity 2- or 3-class version is assumed (single-class configurations are possible but not common for widebody aircraft, and therefore not representative of the likely average configuration).
- Passenger load factor of 100%.
- A passengers to crew ratio as close to 20 as possible (with the number of crew and the number of passengers as whole numbers).
- Passenger and crew average weight of 85kgs per person.
- An average of 1.1 hold bags per premium (F/J/W) class passenger, and 0.8 hold bags per economy (Y) class passenger/crew member.
- Average premium bag weight of 21kgs and average economy bag weight of 20kgs.
- An allowance of 1500kgs for miscellaneous items (e.g. cabin baggage).
- The maximum possible weight available for passengers/crew/bags/misc./cargo is equal to the difference between the Empty Operating Weight and Minimum Zero Fuel Weight stated by the

[199] See Appendix section 13.1 for detail of these assumptions

aircraft manufacturer. Where the manufacturer defines multiple weight variants, the highest MZFW version is used.

- Average bag volume of 0.18m^3.
- LD3 container volume of 4.5m^3, and pallet volume of 11.4m^3 (Source: Boeing).
- Average LD3 packing factor of 95% for passenger/crew baggage.
- Assumption that no LD3 container will contain both F/J passengers bags and W/Y passenger bags (note no similar assumption is made for transfer/OD bags).
- The hold will be configured with enough LD3 containers to fulfil the passenger/crew baggage requirement (and no more), while adhering to the publicly-known allowable hold configurations (Boeing, Airbus, Qantas Cargo, JAL Cargo, SIA and Scoot]). Note: Available cargo volume is mathematically larger if the number of LD3 units in the hold is maximised. However, the LD3 is less useful for cargo than a pallet (it is smaller, so the maximum dimensions of the freight it can hold is lower; it has a small opening through which freight must be loaded; LD3s are smaller than pallets and are not cuboids; hence they have worse volume utilisation than pallets). In our experience, airlines do not typically use a max-LD3 hold configuration, despite the reduced mathematical cargo volume inherent in substituting LD3s for pallets.
- Bulk hold volume is not included in our cargo volume estimate[200].

13.2. Outlook for A380 in the UK Market

457. We do not believe the A380 will significantly increase in prevalence in the UK market, for the following reasons:

- The only UK airline with outstanding orders for the type is Virgin Atlantic (6 aircraft on order). However, Virgin has continually deferred this order (since 2006) and it is widely considered unlikely that deliveries of these aircraft will ever be made (a Forbes article from 2016 states "Virgin Atlantic's ever-deferred order for six is basically dead"[201]).
- The other major UK carrier (British Airways) currently has no outstanding A380 orders.
- There are currently outstanding orders of just 97 aircraft; 46 of these are for a single airline, Emirates, which is not based in the UK (but serves the UK market).
- Additionally, just 2 new orders globally have been made for the aircraft since 2015[202].

[200] The bulk compartment is typically around 10-15m^3, capable of storing loose-loaded items. At IAG Cargo, this space was primarily used for blankets and newspapers for passengers, with around 2-4m^3 typically made available for mail bags/express cargo. Use of this space may vary significantly airline by airline.
[201] (Forbes, 2016)
[202] (Airbus, 2017b)

14. Appendix – Review of AviaSolutions Report

14.1. Introduction

458. AviaSolutions was commissioned by Thanet District Council to investigate the commercial viability of Manston Airport. Its report[203], dated September 2016, is briefly reviewed in this section of the appendix.

459. The AviaSolutions report has a fairly wide scope, including a review of the site development options, analysis of passenger potential, airport financial projections and asset condition reports. Consistent with our overall scope, we focus only on the aspects of the AviaSolutions report addressing cargo potential.

460. Northpoint was subsequently retained by RSP to critique the AviaSolutions report. We review the Northpoint report[204] and the subsequent response from AviaSolutions[205] in the next appendix section (Section 15).

14.2. Potential Development Scenarios

461. AviaSolutions[206] outlines various potential scenarios for cargo activity at Manston. It states that:

> *"In the past, Manston Airport was able to attract a certain level of cargo activity, and a potential future role would be for it to again serve this market. In our assessment, we assume as a minimum that Manston attracts this previous freight, totaling 30,000 tonnes per annum."*

462. Given cargo consolidation trends and competition from more established airports, we consider it possible that a reopened Manston may not be able to achieve historic tonnage. However, as a modelling assumption, we consider this to be reasonable.

463. AviaSolutions then puts forward two possible reasons why the scale of activity in the future could exceed historic levels:

> *"The selection of the East Kent area by a major multinational manufacturing (e.g. an Asian electronics or white goods company) or retail group (e.g. Amazon) as the location of its distribution network. Such location decisions can have a significant impact on freight volumes. However the UK's planned exit from the EU leaves makes this less likely.*
>
> *As a consequence of their lower sensitivity to airport location, freighters are generally amongst the first category of traffic to be 'squeezed' out of busy airports. With the pressure on runway capacity in the South East of England, it is possible that freighters currently operating through the London airport systems might seek to move to an alternative airport."*

464. In relation to the first possible reason, we are not aware of any firm or proposed development that would have a significant impact on freight demand. Therefore, while this a theoretical possibility, the same could apply to any location in the UK. Any future such development would be heavily contested between different UK regions, with more established and more central distribution locations likely to have an advantage.

465. The second reason suggested by AviaSolutions is investigated further in subsequent sections of the AviaSolutions report. We comment on this analysis later in this appendix.

466. AviaSolutions continues, commenting on the potential for integrator services at Manston:

[203] (AviaSolutions, 2016)
[204] (Northpoint Aviation Services)
[205] (AviaSolutions, 2017)
[206] (AviaSolutions, 2016, p. 15)

> *"We also considered the role of integrators in the air freight market. Whilst general cargo traffic tends to be more flexible about the location of the airport it uses than passenger traffic, this does not apply to the major integrated freight operators. The business model of operators such as DHL, FedEx and UPS is based on a hub and spoke principle involving both aircraft and road feeder services: the surface element of the network has a greater requirement for a central location within the market being served. We consider the geographic location of Manston precludes it from being a suitable base airport for an integrator in particular when compared to UK competitors such as East Midlands Airport."*

This assessment of the potential for integrators is consistent with our view.

14.3. Cargo Analysis

467. In Section 6 of the AviaSolutions report, more detailed analysis of the cargo market is undertaken. In assessing the key airport dynamics of the UK market[207], AviaSolutions draws similar conclusions to our analysis:

> *"The busiest airport for freight has consistently been Heathrow, responsible for two thirds of the country's air freight. This position owes much to the very considerable cargo capacity in the holds of the wide-body aircraft providing the many long haul passenger services from the airport. In contrast, East Midlands' position as the second busiest freight airport is due to its role as the centre of the UK distribution network of the integrated cargo carriers, especially DHL but also UPS and Royal Mail. Stansted is preferred by FedEx and is also used by the cargo operations of a number of airlines. These included British Airways before it discontinued its all-freighter operations in April 2014 and switched to the freighter operations of Qatar Airways.*
>
> *It has been argued by, for example, York Aviation on behalf of the Freight Transport Association that the stagnation of growth in UK air freight market since 2000 has been caused by a lack of airport capacity in the London area and specifically at Heathrow. Whilst the lack of ATM growth at Heathrow has undoubtedly hampered the development of the national air freight market, it is also true that over this period there was adequate airport capacity available at both Stansted and Manston to support additional dedicated freighter movements. Freighter movements at Stansted decreased over the period, while Manston closed. This strongly suggests that the stagnation of UK airfreight is not a consequence of capacity constraints given the excess capacity at Stansted and Manston."*

468. In particular, the highlighted distinction between Heathrow freighter capacity and overall UK or South East freight capacity is key. AviaSolutions further explores the dynamics of bellyhold versus freighter:

> *"It is important to note that, in the UK market, only 30% of airfreight is carried on dedicated freight aircraft. This is substantially less than the global average, where approximately 56% of RTK's are transported on freighters. In part, this disparity is due to the excellent belly-hold networks available from UK airports and in particular from Heathrow.*
>
> *As passenger demand increases additional belly-hold capacity will enter the market. This capacity growth is unhooked from the demand scenario for belly-hold cargo and can result in excess capacity in the market. As a result airlines will often sell this belly-hold capacity using a marginal cost pricing structure. This pricing structure does not need to account for the high cost of the aircraft and must only meet the additional marginal cost that each kilogram of cargo incurs. Through the application of this pricing in the key structure, belly-*

[207] (AviaSolutions, 2016, p. 27)

hold cargo often undercuts the minimum price that can be charged on dedicated freighter operations.

As a result of this market dynamic, an airport focused on airfreight carried by dedicated freighters may be overly exposed to a declining or stagnant total market, or at best to a market that is not exposed to strong potential."

469. Again, this view of the market aligns with ours. One area of difference is in relation to the bellyhold capacity of newer aircraft. AviaSolutions asserts that:

"However, there are some elements of the market that appear to be limiting the increase in belly-hold capacity. These include

- *Some of the newer aircraft types have a smaller bellyhold cargo capacity than the aircraft they replace; and*
- *Low Cost Carriers (such as easyJet and Ryanair) are gaining market share but generally ignore the freight market."*

470. As we argue in our report, most newer aircraft types have higher cargo capacity than their predecessors (see paragraph 140). Furthermore, short haul passenger flights contribute a small minority of overall freight, regardless of whether operated by full service or low cost carriers (see paragraph 233).

471. AviaSolutions undertook interviews with freight industry representatives[208]. The list of interviewees was not extensive, with 4 people from the air cargo sector. However, compared to the stakeholders interviewed by Azimuth, there interviews are more relevant for analysing the potential for Manston to play a national role in the UK freight sector.

472. The conclusions from the interviews are summarised below:

"We conclude therefore that there is limited interest from the cargo industry in using a re-opened Manston Airport for air freight. The larger scheduled freighter operators are unlikely to relocate their services to the airport, particularly if the airport does not have a unique product offer. We believe it is more likely that were Manston Airport to re-open, the most likely role would be to serve smaller freight operators and the larger operators on an ad-hoc basis. There is no compelling reason to believe that the airport would be able to generate appreciably more freight activity than previously, other than in the context of a shortage of airport capacity in the London area."

473. This summary is consistent with our assessment of the potential market for Manston.

14.4. Potential Future Freight Operations - Model

474. The next stage of the AviaSolutions report[209] investigates potential demand versus supply imbalances in the South East. Not enough detail of the assumptions/workings is provided to be able to undertake a comprehensive review.

475. The approach differs from ours in some important respects:

- Demand growth rates based on trend analysis rather than linked to GDP.
- Future capacity based on assumed average loads for bellyhold and freighter flights at different airports. Future freight capacity expansion plans for airports do not seem to be explicitly taken into account.

[208] (AviaSolutions, 2016, p. 29)
[209] (AviaSolutions, 2016, p. 30)

- Focus on South East airports rather than national demand/supply.

476. Nevertheless, despite the different methodology, the conclusions are broadly similar to our analysis.

- Demand can be fully accommodated up to 2045 in the Heathrow third runway case.
- In all runway scenarios, demand can be fully accommodated up until 2040.

477. AviaSolutions then provides its modelling assumptions on the potential capture by Manston of unaccommodated demand:

> *"For the purposes of our assessment and in recognition of RiverOak's stated intention to develop Manston as a freight airport, we have assumed that half of the remaining unaccommodated demand is flown via Manston, with the other half going to other UK regional airports, potentially led by East Midlands and Manchester."*

478. We consider this a generous assumption, given the strength of alternative options at established airports or from a highly developed trucking network.

479. Later in the AviaSolutions document (Section 7.3.1), the Manston freight forecasts for the Heathrow third runway scenario are presented. Freight tones are modelled at 30,000 from 2018 to 2045, before growing to 100,00 tonnes in 2050. Appendix C (Section 11.1.1) of the AviaSolutions report provides the Manston freight forecasts for the no new runway scenario (the most favourable for Manston). Again, the forecast is for 30,000 tonnes from 2018 to 2040, but growing to 80,000 tonnes in 2045 and 140,000 tonnes in 2050.

480. These figures look reasonable for the short to medium term, with some potential for modest outperformance in a growing market. In contrast, we consider the forecasts to be on the high side in the long term. Even if South East capacity by 2050 is more heavily constrained than we assume, we consider it likely that centrally located regional airports will benefit to a much greater extent than Manston.

14.5. Conclusions

481. Section 8 of the AviaSolutions report provides its overall conclusions for the freight potential at Manston:

> *"Our freight interviews indicated that the demand to use the airport for freight was very limited. This, in large parts, is due to two factors; the infrastructure investments that have already been made by the industry around Heathrow and Stansted, and the geographical location of the airport. Infrastructure, and the associated knowledge, skill and supporting industry at airports such as Heathrow and Stansted, as well as the major European hubs such as Frankfurt, and Paris, would be almost impossible for Manston to replicate. The geographic location of the airport, tucked into the corner of the UK, cannot compete with airports such as East Midlands for Integrator services that are sold as fast delivery, due to the increases in surface transportation times. The interviews did however indicate that charter services and ad-hoc freighter flights would certainly return, providing some revenue income for the airport. In summary, we conclude that freight would return to the airport in limited quantities, not dissimilar to the tonnage previously processed at the airport."*

482. These conclusions are substantially in line with our conclusions (see Section 2.7).

15. Appendix – Review of Northpoint Report

15.1. Introduction

483. In the main body of our report, we have reviewed the reports issued by Azimuth on the potential for freight development at a reopened Manston. RSP also commissioned Northpoint to review the Azimuth forecasts, the original AviaSolutions report and more generally the RSP proposals. Northpoint's analysis was issued in a report titled *"The Shortcomings of the Avia Solutions Report and an Overview of RSP's Proposals for Airport Operation at Manston"*.

484. In this appendix, we briefly review the Northpoint report.

- Where the Northpoint report covers similar ground to the Azimuth reports, we do not repeat our commentary from the main body of our report.
- Furthermore, our focus is on areas of the Northpoint report relating to freight. Other areas, including passenger development and financial viability, are not covered at this stage.
- Finally, we restrict our commentary to the key issues of substance. For example, Northpoint expresses strongly worded opinions on the AviaSolutions approach. While we believe this criticism is misplaced, we have separately reviewed the AviaSolutions report, and do not see the need for further comment in this appendix.

485. Our review of the Northpoint report has been undertaken in chronological order (the same order issues appear in the Northpoint report).

15.2. Manston Airport Benchmarks

486. Northpoint describes the business model for a reopened Manston as a "*mixed use airport offering air cargo, air passenger links and aircraft servicing and recycling*[210]". Northpoint then highlights that this would be:

> *"…in line with the business models of successful benchmark airports such as Alliance Fort Forth in Texas, USA; Hamilton Airport in Ontario, Canada; Bergamo in Italy; Liege in Belgium; and Leipzig in Germany."*

487. There is no explanation of what characteristics these airports may have in common with Manston, or why these airports would be more relevant than UK examples of mixed use airports such as Prestwick.

- See paragraph 322 onwards for a review of Prestwick Airport and similarities to Manston.

488. In the appendices (Section 12), we have provided case studies of Leipzig and Liege airports. The case studies demonstrate very clearly that these airports have very little in common with Manston, and cannot be considered as relevant benchmarks using objective criteria.

489. AviaSolutions[211] subsequently reviewed all the airports put forward by Northpoint and concludes:

> *"There are clearly structural and geographical reasons as to why each of these airports is different to the proposal for Manston Airport. As such, suggesting these are comparable benchmarks is not realistic. In order for Manston Airport to acquire the status of these airports it would need to demonstrate key elements of development, namely; commitments from key express players (DHL / UPS / FedEx / Amazon / Alibaba); an ability to operate night operations with few regulatory restrictions; and geographical advantages from nearby cities, industrial parks, and population centres."*

[210] (Northpoint Aviation Services, p. 1)
[211] (AviaSolutions, 2017, p. 16)

490. We agree with this assessment. The catchment, location and regulatory framework are all much less favourable at Manston, rendering any comparisons between the airports meaningless.

15.3. Air Cargo Forecast Methodology

491. In Section 2 of its report, Northpoint puts forward its approach to air cargo forecasting and critiques the AviaSolutions approach. The Northpoint methodology appears to be similar to the Azimuth approach, which is reviewed in Section 8 of this report. We focus our assessment of the Northpoint approach on selected key points not covered in the Azimuth forecast review.

492. Northpoint[212] downplays the importance of location for freight, stating that *"In order to forecast where future freight capacity might optimally be developed, it is therefore not appropriate to rely on the geography of consignee demand"*. Instead, the importance of supply side issues is stressed:

> *"The effect of this is to push freight forecasting away from typical neo-classical demand/price mechanism models and any use of airport specific progression, towards supply driven modelling particularly requiring transparency about the supply factors that are used. So, for example, freight operations will be attracted either to where there is a large volume of network carriers flying international services or to where there are few night time restrictions because these are important for express freight operations, or in the case of dedicated freighters where there are no restrictions on slot availability and there is sufficient space to create efficient apron based loading and unloading operations alongside specialist handling facilities such as refrigerated storage, bonded warehouses and major logistics sheds."*

493. Northpoint then argues that *"In the south east of England this points to a relatively small number of airports being suitable for any large-scale freight operations."* Northpoint[213] sees this as an opportunity for Manston, stating that *"…there are few alternatives other than for Manston to cater for non-belly freight movements at south-east airports."*

494. There is an inconsistency in this argument. If the geography of demand is of secondary importance, Northpoint's focus on airport capacity in the South East is misplaced. In any case, South East airports already attract a disproportionate share of the UK's freight demand (see Section 2.4).

495. On Pages 4 and 5 of its report, Northpoint makes a number of assertions, in support of its forecasts, which we dispute:

- *"Based on long-term growth trends in the sector, this report contends that freight capacity in the south-east will need to expand by over 100% in the next 25 years."* No further explanation is provided for such a sweeping statement. As we have highlighted, there is spare freight capacity in the South East currently (see Section 5.3). Furthermore, the focus on South East airports only is not justified (see paragraph 219).
- "*… the expansion for Stansted and Luton for passenger services, primarily of a low-cost nature, means that there will be very few spare slots during the day and more importantly at night, that can be used by express freight carriers for dedicated freight operations*." This assertion ignores the plans of Stansted to grow its freight volumes and to expand its freight infrastructure. It also does not consider the separate planning cap for freight flights (see paragraph 237 onwards).
- *"In this context, and keeping in mind the need for basic infrastructure requirements such as a substantive runway, good road connections and sizeable areas available for apron and shed development, there are few alternatives other than for Manston to cater for non-belly freight movements at south-east airports."* As noted previously, we disagree with a narrow focus on the South East market. Even so, there are other options. In addition to the substantial expected freight

[212] (Northpoint Aviation Services, p. 4)
[213] (Northpoint Aviation Services, p. 5)

capacity growth at Heathrow and Stansted, other airports such as Gatwick and Bournemouth could play a larger role in the future.

- *"Indeed, I anticipate existing volumes at Luton, Stansted and Gatwick will continue to fall as slots and space become increasingly valuable."* The implication that volumes are falling at Stansted and Gatwick is incorrect. Both airports have enjoyed strong growth since 2015 (Gatwick especially, see paragraph 212).

496. On Page 5, Northpoint then outlines the perceived benefits of Manston:

> *"Manston, in contrast, will have no foreseeable slot restrictions, an established reputation for efficient handling and if RSP's proposals are approved, a substantial apron capable of handling several large aircraft concurrently all with excellent airside support facilities and access to dual carriageway roads to London, the M25 orbital and in the foreseeable future to a new Dartford crossing improving access to ports in Essex and in East Anglia. It is even well positioned for trans-shipping freight to trucks, which can then use Dover port or the Channel Tunnel to access the near continent."*

497. We disagree with this assessment of the potential for Manston:

- As discussed previously (Section 4.11), Manston's location is poor.
- The infrastructure advantages are not unique to Manston, while the potential night flight restrictions at Manston are not mentioned.
- We are unconvinced by the potential of improved access to ports. For example, Liverpool Airport currently has very limited freight volumes despite common ownership with Liverpool Port.
- Similarly, it is not clear what advantages could accrue from trans-shipping freight to trucks for onward cross-channel travel. The directional flows where this would make economic sense are not articulated.

498. In referring to the Northpoint forecasts, it is stated on Page 5 that *"They nevertheless demonstrate that, under a range of scenarios, Manston is strongly placed to attract surplus demands in the South East by offering an attractive supply side solution to the air freight industry."* As far as we can see, only one (very optimistic) scenario is presented by Northpoint.

499. Northpoint then provides a wide range of comments on the AviaSolutions forecast methodology (Pages 6-7). AviaSolutions[214] refutes many of these in its follow up report. We make the following observations:

- Northpoint promotes the use of global historic trends and manufacturer forecasts in the context of Manston projections. As we also comment in relation to the Azimuth forecasts (see paragraph 361), the simplistic application of global manufacturer projections to a UK airport is problematic. The divergent freight trends in different markets caution against the application of global metric.
- Northpoint appears to suggest that, for Manston, global forecasts are more relevant than national projections. We find this puzzling. While freight is an international business, UK demand characteristics should not be disregarded.
- Northpoint also seems to argue that bellyhold capacity at Heathrow is constrained, and set to diminish due to newer aircraft types having lower bellyhold capacity than predecessors. However, as we show in Section 4.7, the average freight load for both bellyhold and freighter flights at Heathrow has been growing significantly. This suggests that spare capacity exists and/or average capacity per flight is improving. In the same section, we also highlight that – with the exception of the A380[215] – newer passenger aircraft typically have higher bellyhold capacity than legacy aircraft.

[214] (AviaSolutions, 2017)

[215] As at 31st October 2017, 217 A380 aircraft were in operation with outstanding orders for a further 100. This compares to 1,744 A330/A340/A350 family aircraft in operation, plus a further 1,057 outstanding orders (source: Airbus website). In addition, there is a large

500. The Northpoint report then addresses the issue of cross-channel transhipments (Page 7 onwards). Its argument is that lack of airport capacity in the South East has led to a major increase in trucking from the UK to European airports. As we noted previously, there is not (nor has been) any overall shortage of airport capacity for freight in the South East or the UK more generally (Section 5). Furthermore, the increasing use of truck feeder services is due to cost efficiencies and is not restricted to the UK (see Figure 32).

501. AviaSolutions[216] also correctly points out that:

> *"It is important though to note that a reverse flow also exists with continental European freight being trucked across the Channel to be flown into and out of UK airports. A lack of verifiable data on these flows hinders quantitative analysis, although the practice has existed for many years and despite this the freight industry chose not to use Manston Airport when it was open."*

502. On Page 9, Northpoint draw inappropriate conclusions from York Aviation studies. Our comments on this in relation to Azimuth also apply here. Similarly, we find Northpoint comments on Brexit impacts speculative and one-sided.

503. Northpoint then devotes Pages 10-14 on *"The Availability of Substitutable Bellyhold Capacity"*. We disagree with the following assertions:

- "*However, Avia adduces no evidence on comparative charging rates between bellyhold and freighter carriers and therefore with Heathrow known to be one of the most expensive airports in the world, we remain sceptical that this is a material factor that would drive the re-allocation of consignments from freighters to bellyhold aircraft."* As we illustrate in Section 4.7, Heathrow has grown its share of the UK freight market despite its relative expense. Despite high airport charges, we understand that the incremental costs of cargo carriage at Heathrow are fairly low. Therefore, where excess bellyhold capacity exists, it makes economic sense for airlines to try to fill that capacity with competitive charges for freight customers.
- *"First, just under 50% global air cargo is shipped bellyhold; the comparative figure in the UK is 70%. Since the economies of the UK's main EU competitors are not materially different from our own, there is no logical explanation for this difference other than the shortage of slots available to integrator aircraft or dedicated freighters …"*. There is available airport capacity for integrators / dedicated freighters (see Section 5). A much more credible explanation for the high proportion of bellyhold in the UK is Heathrow, which is Europe's largest passenger hub airport. Heathrow provides an extensive schedule of widebody passenger flights to many of the world's most important air freight markets. Furthermore, the geographical position and island status of the UK make it a less suitable location for freighter flights serving the wider European market (compared to say, Germany). This is especially true for flows to/from Asia.
- *"Second, there are many types of freight (e.g. time critical, heavy, large or live) for which bellyhold capacity cannot provide an acceptable substitute to dedicated freighters*." It is correct that some types of freight are unsuitable for bellyhold. However, this segment of the market is very small and is accommodated at existing airports such as Stansted.
- *"Third, Heathrow's principal attraction for freight forwarders, namely the range of international destinations it serves directly, is also its potential Achilles heel, because that network may not be sufficiently concentrated on certain 'thick' freight routes to be able to cope with the underlying demand – in other words the more complex the passenger network, the greater the likelihood it may not match the required pattern of freight distribution flows."* We do not follow the logic of this. At any airport, there will be some routes where freight demand exceeds bellyhold supply.

backlog of Boeing widebody orders (ca. 1,200 as at October 2017) in addition to aircraft already in operation. Therefore, the A380 is not overly significant in relation to overall bellyhold capacity.

[216] (AviaSolutions, 2017, p. 18)

This is not a new phenomenon, and we are not aware of any suggestions that there will not be an ongoing role for freighter aircraft in the future. Therefore, it is unclear how this factor will be a negative for Heathrow going forward.

- *"Fourth, new aircraft tend to have less bellyhold capacity than older ones and Heathrow and Stansted are the two airports where these new aircraft are most likely to be introduced."* This point is incorrect and was addressed earlier with regards to Heathrow earlier in this section (paragraph 499). The comment is relation to Stansted is irrelevant, as Stansted bellyhold freight is negligible.
- *"And finally, it is very likely that a sizeable chunk of the available runway capacity at both airports will be taken up by Low Cost Carriers (i.e. Ryanair at Stansted and easyJet at Heathrow), and as with most Low-Cost Carriers, carrying freight does not form part of their business model."* We have previously argued that the airline mix is much less important than the route mix. Short haul full service airlines only generate a small fraction of bellyhold freight, so any differences in airline mix within the short haul sector will have minimal impact (see paragraph 233).
- *"Hence, in the medium to long term it is hard not to see the average freight capacity per aircraft arriving at Heathrow diminishing, even if with the new runway, the total number of aircraft that can operate there increases."* This would require a reversal of historic trends – as discussed above, the average loads per flights have been growing strongly. We would anticipate this trend to continue in the future.

504. We have a very different view of the freight outlook, both generally and specifically for Manston. No credible evidence is presented by Northpoint in support of its assessment. There are major flaws in key lines of argument, with its study exhibiting many of the same fundamental issues as the Azimuth reports.

15.4. Manston Air Freight Forecasts

505. Northpoint present summary air freight forecasts in Appendix A of its report. The forecasts are even more ambitious than the Azimuth forecasts, with 472,000 tonnes projected by 2040. This figure is equivalent to two-thirds of all tonnage on freighter aircraft in the UK in 2016.

506. The building blocks to the forecast are not easy to follow. However, the following assumptions appear highly suspect:

- Stansted to see freight volumes reduce dramatically, in contrast to the airport's own forecasts and expansion plans. It appears all this "spilled" freight is expected to divert to Manston, rather than more established UK competitors.
- Similarly, spill from Gatwick and Heathrow, despite growing long haul services at Gatwick and a new runway at Heathrow. Again, it seems all spill is expected to be captured by Manston.
- There is also a major assumption that a substantial proportion of freight can be "clawed back" from European airports. By 2040, it appears that this factor contributes 100,000 tonnes to Manston in the Northpoint forecasts. The assumption is unfounded and ignores market economic reality.

507. In Section 8.6, we concluded that the Azimuth forecasts were extremely optimistic and therefore not credible. The Northpoint forecasts are even more ambitious. Therefore, we draw similar conclusions in relation to their credibility.

508. As with the Azimuth forecasts, we also note the Northpoint cargo flight projections are high, even taking into account the projected freight tonnage.

16. List of Figures

17. List of Tables

18. References

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