Manchester Airport
Future Airspace

MAG Manchester Airport

STEP 1B DESIGN PRINCIPLES REPORT

The future of airspace

November 2019

cument Title	**Design Principles**
Version and status	Step 1B Design Principles report version 2 18th December 2019
Amendment and history	Amendments following a request from the UK CAA to clarify which specific policy is being referred to. i) Version Control added ii) Pg 11, 54, 59, 64, 74 added reference to Government Policy Minor wording amendments

Contents

Read more online: manchesterairport.co.uk/futureairspace

1 Executive summary

The UK has some of the busiest airspace in the world, and the Government has identified the need for investment to upgrade and modernise the network.

Andrew Cowan

Andrew Cowan
CEO
Manchester Airport

1.1 About this document

1.1.1. Manchester Airport (MAN) recently started a Future Airspace Project to review the flight paths that aircraft use when they fly in and out of the airport. These flight paths are used by hundreds of aircraft each day to connect people and products from across the North to all parts of the globe, and they are important in terms of how our operations affect communities around the airport.

1.1.2. The purpose of this document is to set out the MAN Proposed Design Principles that, subject to review by the Civil Aviation Authority (CAA), will guide the development of MAN's future airspace design in the next Stage of the process.

1.1.3. In addition, the document:

- explains why we need to upgrade the airspace around MAN and how we have identified the people and organisations who could be impacted;
- sets out the process that we have been through to develop our Proposed Design Principles through a two-way conversation with these stakeholders;
- describes how the process we have been through meets the requirements set out in the CAA's guidance document, 'CAP1616 Airspace Design: Guidance on the regulatory process for changing airspace design including community engagement requirements,' and the ways in which it has gone further than these minimum requirements in many cases; and
- outlines the next steps in the seven-stage CAP1616 process.

1.2 The need to modernise airspace

1.2.1. MAN's Future Airspace Project has the potential to unlock a wide-range of benefits for communities, passengers, the environment and the regional and national economy.

1.2.2. The Government has made clear how important the continued sustainable growth of the aviation sector is to trade, tourism and investment, all of which create economic growth, jobs and prosperity. To support this growth over the years to come, the Government has highlighted the strategic need to upgrade the existing airspace network across the UK, much of which dates back to the 1950s.

1.2.3. The UK has some of the busiest airspace in the world, and the Government has identified the need for investment to upgrade and modernise the network to address existing constraints, reduce delays for travellers and reduce environmental impacts.

1.2.4. The Government has developed a strategy to modernise airspace, throughout the country and at all heights (altitudes). Airports are responsible for changes to airspace below 7,000 feet (lower airspace), with NATS – the organisation that manages air traffic control - responsible for changes above 7,000 feet (upper airspace).

1.2.5. MAN's Future Airspace Project is one part of this overall UK-wide programme and relates only to aircraft flying within the lower airspace around it.

1.2.6. MAN is the UK's third largest airport, and the primary international gateway serving the North of England. Handling 29 million passengers a year, MAN connects people and businesses to more than 200 different destinations, including an increasing number of long-haul locations like China, Hong Kong, Singapore and Ethiopia, as well as many in North America.

1.2.7. MAN is currently investing more than £1 billion in a Transformation Programme that will provide new infrastructure and facilities to deliver improved customer experience and increased capacity.

1.2.8. With two full-length runways, MAN has the capacity in the longer term to handle around 55 million passengers a year.

1.2.9. Government policy supports airports across the UK in making best use of their existing capacity, stating: 'government has set out its support of airports beyond Heathrow making best use of their existing runways, subject to related economic and environmental considerations being considered.[1]'

1.2.10. As part of this, the airspace serving MAN will need to be developed to enable the airport to grow in a sustainable way and make best use of its existing capacity.

1.2.11. In addition, MAN needs to comply with new regulatory requirements on all airports that mandate the adoption of satellite navigation technology to guide aircraft on both arrival and departure, replacing current ground-based navigational aids. The transition to the new technology will be delivered at MAN by December 2022.

Read more online:
[1] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/714069/making-best-use-of-existing-runways.pdf

1.3 The Airspace Change process

1.3.1. MAN's Future Airspace Project needs to be coordinated with those of other airports in the North of the UK and a dedicated programme, known as the 'Future Airspace Strategy Implementation (North)' (FASI-N), has been established to manage this process. MAN's airspace change also needs to be coordinated nationally and the Government has set up the Airspace Change Organisation Group (ACOG) to do that.

1.3.2. All airspace change projects in the UK must follow a process defined by the CAA and set out in the document 'CAP1616,' which provides guidance on the regulatory process for changing airspace design including community engagement requirements.

1.3.3. The development of Proposed Design Principles is the purpose of Stage 1 'Define.' Earlier in this Stage, MAN submitted a Statement of Need to the CAA, which set out the reasons for change.

1.3.4. This document relates to Step 1B of Stage 1, during which CAP1616 requires airports, as 'change sponsors,' to develop Design Principles through a two-way conversation with those likely to be affected. Airports requesting change should be able to show they have developed a good understanding of the design considerations that are important to stakeholders.

1.3.5. MAN has carried out a thorough process of stakeholder identification, which started with defining the full geographic area that could potentially be affected by an airspace change. Following this, we used a range of techniques to identify stakeholders in this area that fell into the four categories set out by CAP1616, details of which are contained in this document. We obtained contact details for these people and organisations, and made an assessment of the best way in which to engage with them during Step 1B.

1.3.6. We adopted a two-phase engagement process, to enable a two-way conversation and ensure stakeholder insights were responded to in the development of Proposed Design Principles. During the first phase, we published 11 questions in order to stimulate debate around the issues of most importance to stakeholders. These questions were contained within an engagement document, which was published online and sent directly to more than 900 stakeholders. The engagement document – which achieved a Crystal Mark from the Plain English Campaign – was accompanied by an online questionnaire, ensuring any member of the public could join the conversation if they wished to. We received more than 750 responses.

1.3.7. The questions were used to structure discussions at a series of 11 Focus Groups, organised independently by YouGov. They were attended by a representative group of stakeholders, both in terms of geography and interest area.

1.3.8. To maximise awareness of the engagement process, we issued press materials, used social media to publicise ways in which people could engage, communicated with employees and discussed its Future Airspace Project as part of an existing regular programme of stakeholder and community engagement.

1.3.9. Following this first phase of engagement, we analysed the insights and used these to develop a list of 10 Draft Design Principles. The Draft Design Principles were then tested during the second phase of engagement, which involved four further Focus Groups which were independently organised and facilitated. Participants were drawn from the first phase of Focus Groups, and included some new attendees.

1.3.10. We used these meetings to ask stakeholders for their views on the Draft Design Principles and whether they felt they reflected the insights gathered during the first phase. This feedback has been considered carefully and used to refine our Draft Design Principles and develop a final set of Proposed Design Principles.

1.3.11. Throughout the first Stage of MAN's Future Airspace Project, we sought advice and assurance from The Consultation Institute (tCi) to ensure best practice approaches were taken to stakeholder engagement, and that the Principles submitted were the result of a positive listening exercise.

1.3.12. We also established an independent Stakeholder Reference Group (SRG), which is made-up of a committee of representative stakeholders and exists to advise on MAN's engagement process. It will provide advice and guidance throughout the CAP1616 process.

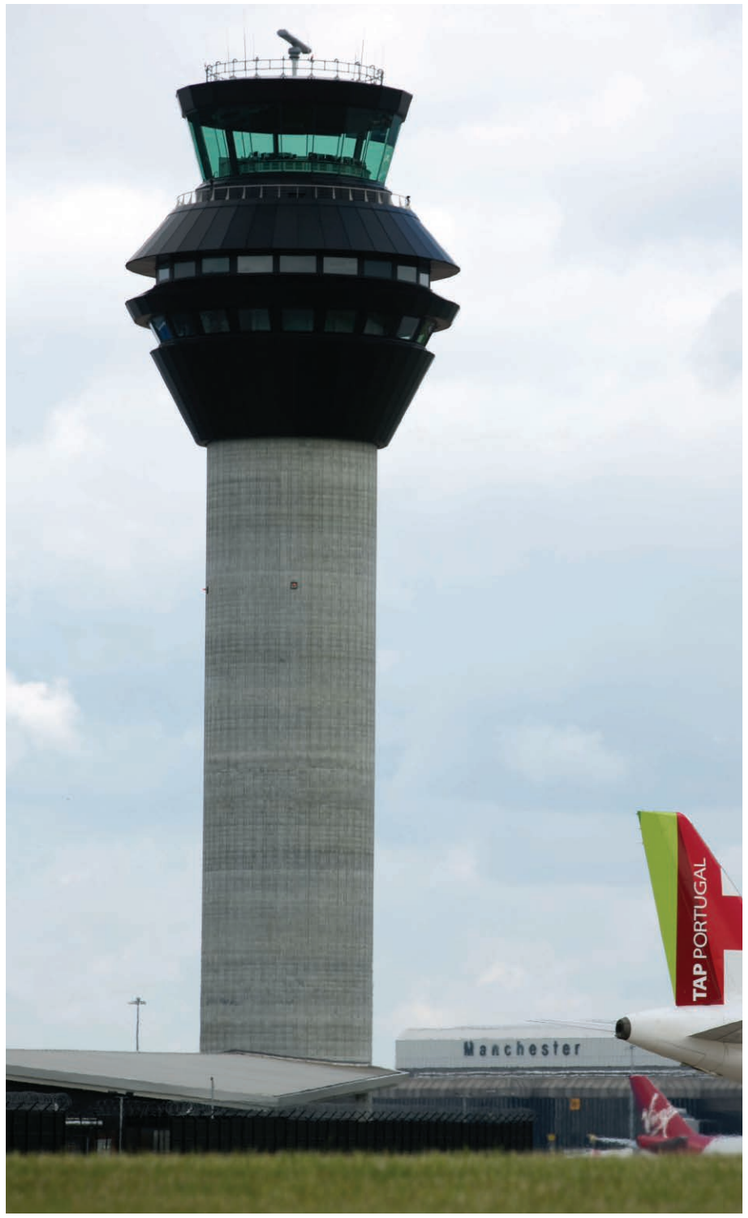
1.3.13. The engagement process we have followed has enabled us to develop Proposed Design Principles in accordance with CAP1616's requirements. By exceeding minimum requirements, MAN has been able to create a good awareness of airspace modernisation with its stakeholders and establish an effective two-way conversation with them at the earliest opportunity. We will seek to build on this as we move through subsequent stages of CAP1616.

1.3.14. Overleaf we set out the different stages of the engagement process and the Proposed Design Principles.

1.3.15. MAN submitted its final nine Proposed Design Principles to the CAA on 22nd November 2019. We anticipate that the CAA will publish its review of these Principles by the end of December 2019. Subject to the CAA's endorsement of the Proposed Design Principles, MAN will move into Stage 2 'Develop and Assess' of the Airspace Change Process set out in CAP1616.

1.3.16. During Stage 2, MAN's appointed airspace designers will develop a longlist of flight path options, guided by the Design Principles agreed during Step 1B. These will be tested with the same stakeholders we have engaged with during Stage 1, with full Design Principle Evaluations completed for each option.

1.3.17. Following this, we anticipate working towards a full public consultation on a series of options for changes to flight paths in late 2020. A full overview of the CAP1616 is also contained in this document.



Manchester Airport Future Airspace Project, Step 1B Engagement Process

STAKEHOLDER IDENTIFICATION

GIS Mapping

Desk-based Research

Local Knowledge

Identified nearly 900 relevant stakeholders

ORGANISED INTO CAP1616 PRIORITY GROUPS

1. Directly affected local aviation
2. Members of National Air Traffic Management Advisory Committee
3. Relevant national organisations
4. Communities affected by potential impacts

PHASE 1 - WE ASKED, WE HEARD...

ENGAGEMENT MATERIALS

Information Booklet

Factual tool for two-way conversation

also featured on

Dedicated Web page

5,659 page views in September & October

STEP 1B ENGAGEMENT

Independently facilitated by YouGov

11x FOCUS GROUPS

Representative views in interest & geography

7x Community Representatives
(covering general public, business, community & care providers)

2x Aviation
(covering directly affected local aviation and NATMAC)

2x Elected Representatives
(also covering communities affected)

Feedback from participants = 70% felt it was a useful exercise & 99% felt it was important to be involved

STEP 1B ENGAGEMENT

Direct Engagement

900 stakeholders received email & reminder email from MAN CEO

Online Questionnaire

728 responses received

COMMUNICATION

Media and Social Media

6,000 social media views, appeared in print and online media, and community newsletters

Internal Communications

3,000 employees received email from MAN CEO

REGULAR ENGAGEMENT

Community Outreach

50 hours face-to-face time in local communities

Regular Meetings

Including 8 councillor meetings representing 29 councils, Manchester Airport Consultative Committee, and other regular operational and stakeholder meetings

WE DID...

Insights Analysed

All comments categorised. Longlist developed of Potential Design Principles

Draft Design Principles

10 shortlisted for further feedback

Stakeholder Reference Group

Independent group to shadow MAN's engagement throughout CAP1616, commenting on process

PHASE 2 - WE ASKED, WE HEARD...

4x FOCUS GROUPS

Draft Design Principles tested to ensure accurate representation of views

1x Leisure/ Special Interest

1x General Public

1x Aviation/Elected Representatives

1x Business/ Community/ Care Providers

WE DID...

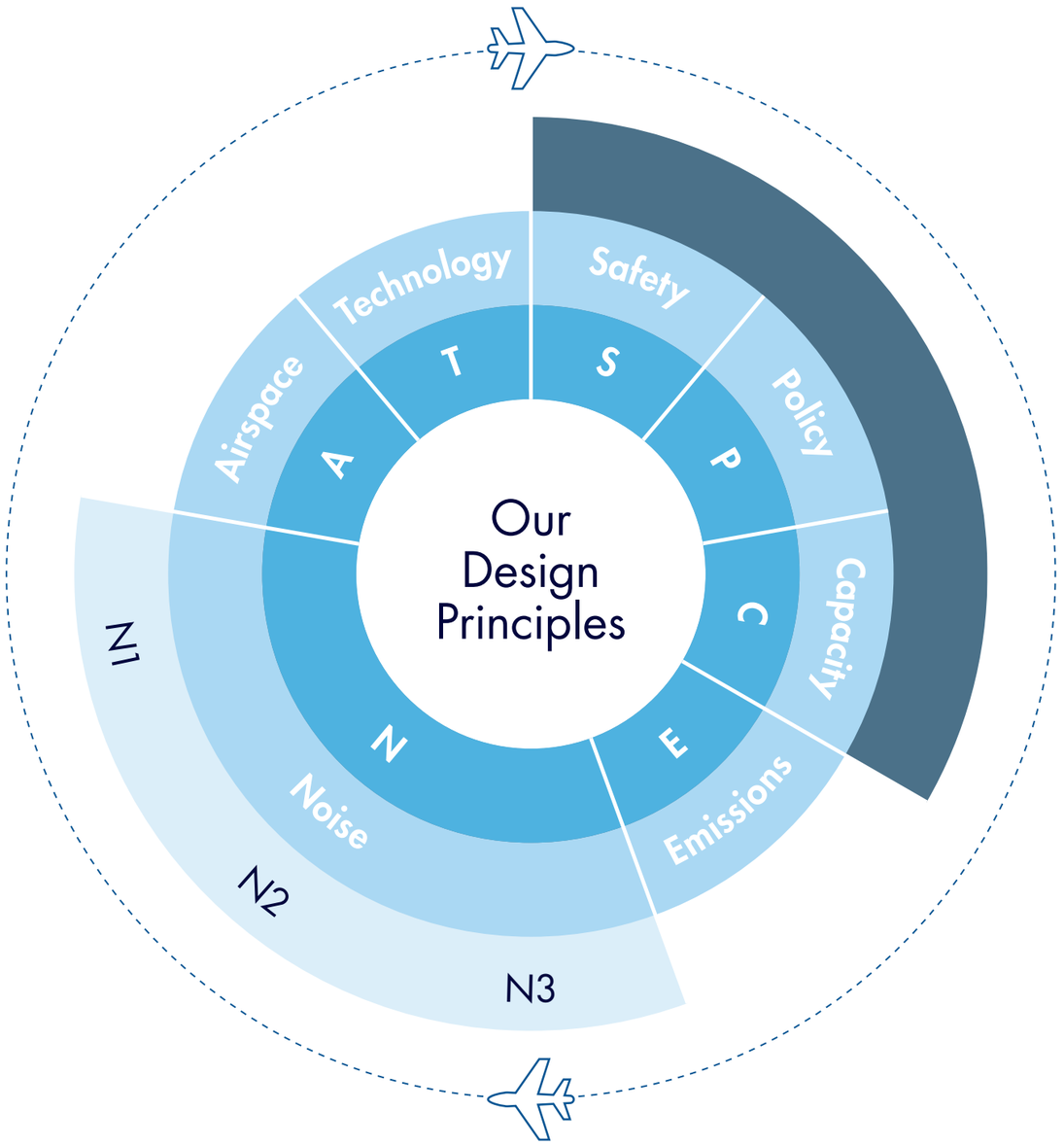
Insights Analysed

Proposed Design Principles

PROPOSED DESIGN PRINCIPLES

See P10

Manchester Airport Proposed Design Principles



S Safety

Our routes must be safe, and must comply with industry standards and regulations.

P Policy

Any change must accord with the Civil Aviation Authority's Airspace Modernisation Strategy. Any airspace change must also allow connection to the wider UK En-Route network and be aligned with the Future Airspace Strategy Implementation for the North programme and take into consideration the needs of other airports.

C Capacity

Our future airspace must enable best use of the capacity of our existing runways, in line with government polic

E Emissions

We will minimise, and where possible reduce, emissions when we design routes. This may be achieved by selecting the most direct routes.

N Noise

N1 Our route designs should seek to minimise, and where possible reduce, the number of people affected by noise from our flights.

N2 Where practical, noise effects should be shared. The use of dispersion and/or respite, especially at night, will be considered to achieve this.

N3 Where practical, our route designs should avoid, or limit effects upon, noise sensitive areas. These may include cultural or historic assets, tranquil or rural areas, sites of care or education.

A Airspace

Our route designs should minimise the impacts on other airspace users by limiting Controlled Airspace.

T Technology

Our route designs should be based on the latest aircraft navigational technology widely available.

more online:
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/714069/making-best-use-of-existing-runways.pdf

2 Introduction

2.1 Background

2.1.1. The Government has made clear that the international connectivity provided by UK airports is important to trade, tourism and investment and that it intends to support the forecast growth in air travel, while balancing the needs of communities and the environment. Meeting forecast growth in air travel at MAN will bring with it associated economic and social benefits for those living and working in the airport's catchment area.

2.1.2. In February 2017, the Government published its UK Airspace Policy.[2] It described a UK airspace network originally designed in the 1950s, which is now among the busiest in the world. It set out how this airspace remained safe but had not kept pace with improvements to aircraft technology and the fact more people than ever before are flying.

2.1.3. The strategy recognised that existing airspace constraints, if not addressed, could hinder growth, cause delays for travellers – either on the ground or in the air – and negatively impact the environment.

2.1.4. In response to direction from Government, the Civil Aviation Authority (CAA) published its Airspace Modernisation Strategy in December 2018.[3] A key feature of this was a transition to the greater use of satellite navigation technology, meaning physical ground-based aids currently used to guide aircraft in and out of UK airports could be removed. There is a regulatory requirement for major airports to adopt this change by 2024. At MAN, this will happen by December 2022.

2.1.5. The Government's future airspace policy requires all airports, including MAN, to modernise airspace for landing and departing aircraft flying at up to 7,000 feet and it is this change that this document relates to. MAN is known as the 'change sponsor' during this process and has established a Future Airspace Project to deliver the change. The CAA has developed a process for this, which is set out in 'CAP1616 Airspace Design: Guidance of the regulatory process for changing airspace including community engagement requirements' (CAP1616). These changes to lower airspace must be coordinated with changes above 7,000 feet – known as upper airspace – and with those taking place at other airports.

Dedicated bodies have been established to oversee and coordinate such changes and are referred to in Section 2.3.

2.1.6. MAN is the UK's third largest airport and operates as the primary international airport serving the north of the country. Currently offering routes to more than 200 different destinations, MAN is part-way through a £1 billion transformation of its terminals and airfield, the largest investment in its 81-year history. The enhancements to MAN's infrastructure will help improve the passenger experience, while helping ensure its terminal capacity aligns with its runway capacity.

2.1.7. MAN is the only airport outside London with two full-length runways, with its second opening in 2001. Since then MAN has seen an increase in the use of both runways. Currently, volumes stand at around 29 million, with MAN's most recent Sustainable Development Plan[4] forecasting that using the two runways to their full potential could enable passenger throughputs of up to 55 million per year.

2.1.8. While existing airspace designs have been able to accommodate growth so far, future designs which may be in place for several decades will need to take account of the potential full utilisation of these runways.

2.1.9. The redesign of routes from both runways will seek to deliver benefits to passengers, by reducing delays, and to the environment, by facilitating more efficient operations, reducing the need for aircraft holding, both in the air and on the ground.

2.1.10. Making best use of the capacity of MAN's existing runways aligns with a policy adopted by the UK Government in June 2018, which stated that 'government has set out its support of airports beyond Heathrow making best use of their existing runways, subject to related economic and environmental considerations being considered[5]'.

2.1.11. All the factors set out above are contained in MAN's Statement of Need,[6] which was submitted to the CAA on 19th March 2019. Further detail on the overall CAP1616 process follows in section 2.3.

Read more online:

[2] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/588186/uk-airspace-policy-a-framework-for-balanced-decisions-on-the-design-and-use-of-airspace-web-version.pdf
[3] http://www.caa.co.uk/cap1711
[4] https://www.manchesterairport.co.uk/about-us/manchester-airport-masterplan/
[5] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/714069/making-best-use-of-existing-runways.pdf
[6] https://airspacechange.caa.co.uk/PublicProposalArea?pID=159

> A good level of understanding of what design considerations are is important to stakeholders.

2.2 Purpose of document

2.2.1. The purpose of this document is to set out the process followed by MAN in developing the Design Principles it is proposed will guide it's Future Airspace Project, following requirements set out for Step 1B in the CAP1616 process. Proposed Design Principles provide the framework against which the airspace change design options developed during the next Stage of CAP1616 will be evaluated.

2.2.2. As set out in Section 2.3, Step 1B is part of Stage 1 of the CAP1616 process and this document describes the engagement with stakeholders carried out during this Step. There will be further engagement, including formal consultation, at later stages of CAP1616, with the next steps also described in Section 6 of this document.

2.2.3. CAP1616 requires change sponsors to develop 'a good level of understanding of what design considerations are important to stakeholders.'

2.2.4. This document outlines the steps taken to develop that understanding and to facilitate a two-way conversation between MAN and its stakeholders, so that the final set of Design Principles take account of these considerations. This included:

- How stakeholders were identified and the steps taken to ensure groups that are 'seldom heard' were included;
- The materials that were produced to describe the process being followed, the reasons for change and the way in which people and organisations could join the conversation are set out; and
- The two-phase process followed by MAN during Step 1B, including the methods deployed and reasons for selecting them, and the use of neutral facilitation throughout.

2.2.5. Detailed summaries of the insights gathered from stakeholders are provided in Section 4, as well as descriptions of how these insights were reflected in the Draft and Proposed Design Principles.

2.2.6. A glossary of technical terms can be found in Section 7.

2.3 CAP1616 Airspace Change Process

2.3.1. The way airspace is managed in the UK is changing. As part of a coordinated national programme (the Airspace Modernisation Strategy), all airports are looking at how aircraft fly below 7,000 feet, to identify improvements that can be made. The UK's air traffic navigation services provider (NATS) is responsible for reviewing flight paths above 7,000 feet.

2.3.2. Delivering MAN's Future Airspace Project will take at least two years and will involve a series of different stages in accordance with CAP1616. There is a dedicated CAA website[7] that provides information on airspace change projects at all UK airports, including links to documents and the stage they are at in the CAP1616 process.

2.3.3. In March 2019, at the first Stage of the CAP1616 process (Step 1A), MAN submitted a Statement of Need to the CAA to explain the reasons for changing airspace design at MAN. Subsequently, an Assessment Meeting was held between MAN and the CAA to discuss the Statement of Need and how MAN intends to manage the process of airspace modernisation in accordance with CAP1616.

Following the Assessment Meeting, the CAA agreed that MAN should initiate an airspace change and provisionally indicated that the proposed change was categorised as a Level 1 change (a significant change that requires the airspace change sponsor to follow and complete the full CAP1616 process). This approval completed Step 1A of the CAP1616 process.

2.3.4. Having successfully completed Step 1A, MAN is currently going through Step 1B, which is one of the earliest stages in the process. In Step 1B the objective is to agree a set of Principles to apply when designing airspace at MAN. MAN will consult more widely with stakeholders during later stages of the CAP1616 process.

Read more online:
[7] https://airspacechange.caa.co.uk/

2.3 CAP1616 Airspace Change Process continued

2.3.5. National airspace works together as a system and, because of this, any change to MAN's airspace cannot be completed in isolation. To make sure all changes to airspace work together, the Government and the CAA have jointly set up a new body, the Airspace Change Organising Group (ACOG), to coordinate the programme of airspace modernisation projects across airports and upper airspace. ACOG is coordinating the timescales and will make sure that the new airspace creates the most efficient system for all.

The next stages in the CAP1616 process are described below.

We are here

2019

Stage 1 Define

Step 1A

We sent our Statement of Need to the CAA in March 2019.

Step 1B

We gathered views on Design Principles over the summer and up to 6 October before sending them to the CAA for approval in late 2019.

2020

Stage 2 Develop and assess

Taking the Design Principles produced during Stage 1 into account, we will develop and assess a series of options for changes to flight paths over the course of 2020.

The options will be sent to the CAA after taking feedback from our stakeholders.

Late 2020 to early 2021

Stage 3 Consult

We will prepare to consult the public on these options later in 2020. Once we have approval from the CAA to proceed, a formal consultation will take place in late 2020 or early 2021.

Mid-2021

Stage 4 Update and submit

Based on the outcome of the consultation, we will finalise our Airspace Change Proposal and send it to the CAA in mid-2021.

Late 2021

Stage 5 Decide

In late 2021 we expect the CAA's decision on whether to approve any airspace change.

Early 2022

Stage 6 Implement

If approved, any airspace change could come into force in March 2022.

2022 onwards

Stage 7 Post-implementation review

The CAP1616 process gives the CAA and airports 12 months to review any change that has been made to airspace.

MAN has focused on achieving this throughout a process of two-way conversation with stakeholders likely to be affected by its Future Airspace Project.

2.4 Objectives for Step 1B

2.4.1. The ultimate objective of Step 1B was to develop a set of Design Principles, as part of the wider 'Define' gateway set out in CAP1616. These Design Principles should be consistent with MAN's Statement of Need. MAN has achieved this through a process of two-way conversation with stakeholders likely to be affected by its Future Airspace Project. In doing so, MAN was committed to going above the minimum requirements set out in CAP1616 and examples of activity that reflects this ambition are set out in this document.

2.4.2. Wider objectives of this approach were:

- To establish widespread awareness of MAN's Future Airspace Project and the reasons for change at the earliest opportunity;
- To establish a two-way conversation with stakeholders during the first Stage of CAP1616, laying the foundations for that to continue throughout; and
- To develop an understanding of the issues of most importance to stakeholders at the earliest opportunity.

2.4.3. This is consistent with CAP1616, which states change sponsors should develop an engagement strategy during Stage 1, which is built on during Stage 2 and the rest of the process.

3 Methodology

> It required MAN, as Change Sponsor, to develop a good understanding of the considerations that are important to the people and organisations likely to be affected.

3.1 Overview of approach

3.1.1. The over-arching objective of Step 1B is to set Design Principles through a process of two-way engagement with those likely to be impacted by the proposed airspace change. This required effective communication with stakeholders of the reasons for change and the positive outcomes it can deliver, based on MAN's Statement of Need. At the same time, it required MAN, as Change Sponsor, to develop a good understanding of the considerations that are important to the people and organisations likely to be affected.

3.1.2. Following a detailed process of stakeholder identification, set out in Section 3.2, a two-phase engagement plan was devised. This involved using a variety of methods to gather an understanding of stakeholder priorities, which were responded to in the development of Draft Design Principles. To ensure these Draft Design Principles reflected insights gathered, a second phase of engagement took place, involving a combination of those who had participated in phase one and those who had not.

3.1.3. As part of this, a series of questions were developed to help build an understanding of the most important issues to those being engaged (see Appendix 1). These questions were based on the reasons for change, as set out in the Statement of Need, knowledge of local circumstances and community interests.

3.1.4. This question set was used for the first phase of engagement, which consisted of:

- Focus Groups – to ensure MAN gathered a representative range of views, both in terms of geography and interest, it was decided that Focus Groups were a suitable method of engagement for Step 1B. To ensure neutral facilitation, YouGov was appointed to identify and invite participants, and to summarise their insights. This facilitation enabled two-way conversations to be held and for technical and potentially complex subjects to be explored;
- Direct engagement – this involved both one-to-one and group meetings and/or written correspondence to those for whom this form of engagement was deemed most appropriate; and
- Engagement materials and online questionnaire – online responses were encouraged from anyone with an interest in the process and facilitated via a dedicated web page,[8] onto which the engagement document and questionnaire, included in Appendix 1, were uploaded.

3.1.5 This was followed by a second phase of Focus Groups before Proposed Design Principles were drafted.

3.1.6. An independent Stakeholder Reference Group (SRG) was established to shadow MAN's engagement during Step 1B and subsequent engagement and consultation for the duration of the CAP1616 process. The SRG serves as an independent observer and a source of guidance and advice on the engagement processes required to meet CAP1616.

3.1.7. Meanwhile, MAN continued it's well established programme of community and stakeholder engagement, which helped to raise awareness of the process and encourage participation. A more detailed description of each of these elements is contained in sections below.

3.1.8. Throughout the process, MAN worked with specialist advisers. The Consultation Institute (tCi), an internationally recognised not-for-profit organisation, provided quality assurance for MAN's engagement activities. Osprey Consulting Ltd, accredited Instrument Flight Procedure (IFP) designers, provided support for the technical aspects of the CAP1616 Step 1B process.

Read more online:
[8] www.manchesterairport.co.uk/community/living-near-the-airport/futureairspace/

Prior to embarking on engagement activities, MAN carried out a detailed process of stakeholder identification.

3.2 Stakeholder identification

3.2.1. Step 1B does not require formal consultation. Nonetheless, MAN acknowledged that engagement carried out during Step 1B would be important to establish a two-way conversation with potentially affected stakeholders from the outset. Therefore, prior to embarking on engagement activities, MAN carried out a detailed process of stakeholder identification.

3.2.2. This involved identifying those who might be impacted by the MAN Future Airspace Project, and developing an understanding of their current situation, including their current relationship with MAN, existing knowledge of airport operations and/or the change process and the aspects of the process that will impact them specifically. Finally, consideration was given to the unique requirements of all those identified, to ensure the process was accessible to all.

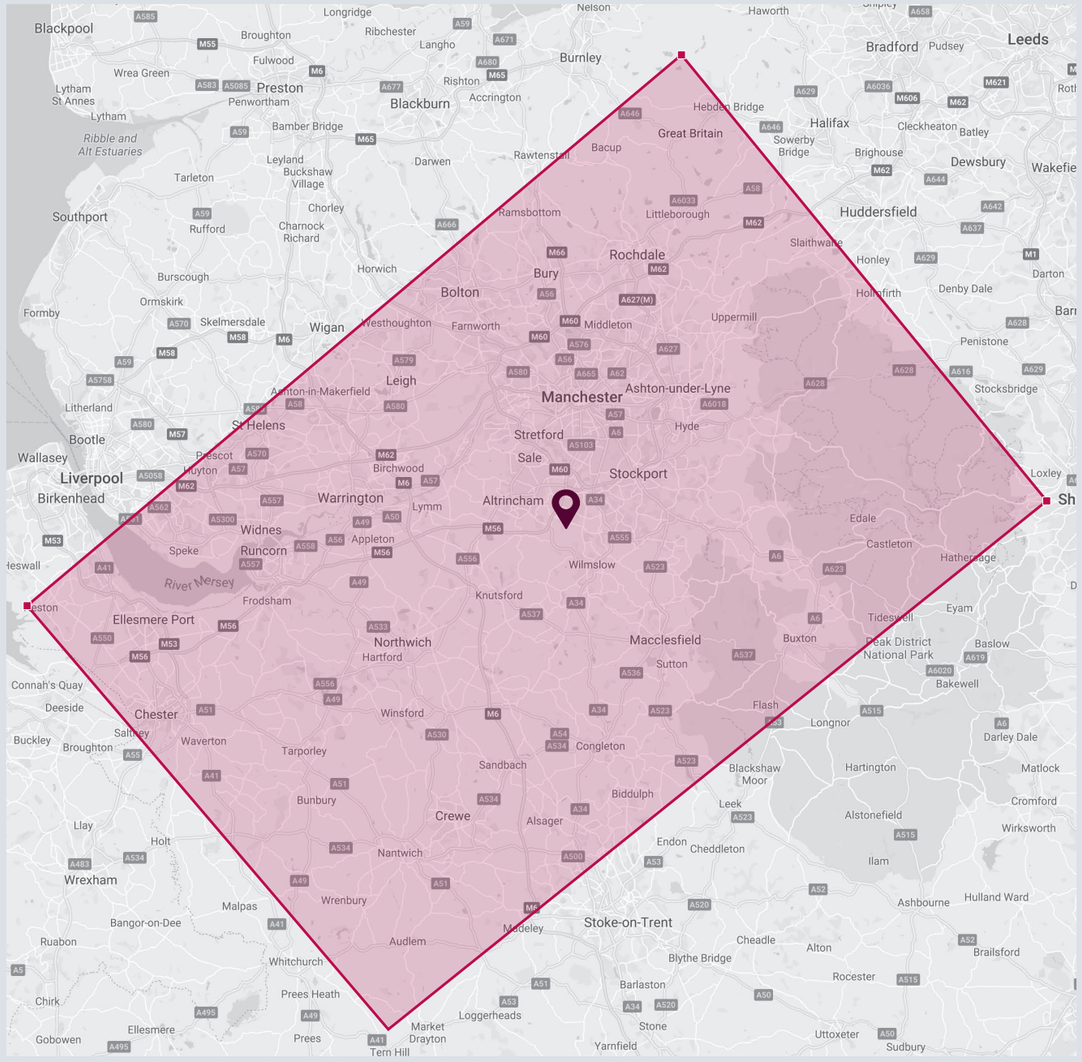
Geographic area

3.2.3.1. The geographic area within which stakeholders might be affected by an airspace change at MAN was defined by mapping the predicted maximum area within which aircraft may either reach 7,000 feet on departure, or descend from 7,000 feet on arrival at MAN. It was defined during Step 1A. This is published on the CAA portal[9] and is shown in the red shaded area on the map opposite, which shows the Potentially Affected Area.

3.2.3.2. While a clear area was defined, the engagement methods chosen, as set out below, ensured stakeholders from outside this boundary were still able to participate.

Potentially Affected Area

Read more online:
[9] https://airspacechange.caa.co.uk/PublicProposalArea?pID=159



> Care was taken to ensure a good coverage of these categories from all geographic areas within the Potentially Affected Area.

Identifying stakeholders

3.2.4.1. Having established the Potentially Affected Area, it was possible to identify those who should be engaged with. The CAA's guidance states that for Level 1 changes, the engagement expected at Step 1B will be with:

- Directly affected local aviation stakeholders;
- Members of the National Air Traffic Management Advisory Committee;
- Relevant national organisations; and
- Communities affected by potential impacts (such as noise or economic growth) associated with the change.

3.2.4.2. In conjunction with tCi, MAN carried out the following actions to identify stakeholders within those categories, based in the Potentially Affected Area:

- Analysis of existing contacts/ relationships, which included those who had previously requested to be updated in the process;
- Analysis of publicly available information about the organisations/elected representatives and other relevant stakeholders in the communities; and
- Analysis of paid-for Geographic Information System (GIS) data.

3.2.4.3. This process identified nearly 900 relevant stakeholders across the four stakeholder categories identified by CAP1616. Care was taken to ensure a good coverage of these categories from all geographical areas within the Potentially Affected Area. Identifying stakeholders in this way, as opposed to relying on those who self-select to participate, ensured that those who may be deemed to be 'seldom heard' could be contacted and encouraged to participate. As a result the Focus Groups included many participants who may not otherwise have been involved in this conversation. The findings are summarised below, with a full list of identified stakeholders in Appendix 2.

Directly affected local aviation stakeholders

3.2.5.1. MAN identified more than 200 aviation stakeholders with the potential to be directly affected. Some of these fell under the Members of the National Air Traffic Management Advisory Committee (NATMAC) category (see below), as national representatives, whereas others represented individual airports, airlines, air traffic providers and other airspace users. Examples included Liverpool John Lennon Airport, more than 70 airlines operating from MAN, and groups within the General Aviation (GA) community.

Members of the National Air Traffic Management Advisory Committee

3.2.6.1. This list includes representatives from all aspects of aviation and was obtained through the CAA and NATS.

Relevant national organisations

3.2.7.1. This was a wide-ranging group, covering business organisations, heritage groups, charities and other interest groups. Where possible, MAN identified local representatives from these national organisations. Where a local representative was not identified, a national representative was contacted. Examples included the National Trust, Greenpeace, Greater Manchester Chamber of Commerce and the North West regional council of the CBI.

Communities affected by potential impacts (such as noise or economic growth) associated with the change

3.2.8.1. This list represented the biggest group of stakeholders identified. It included community groups, schools, hospitals, respite homes, special interest groups and equality groups. It also included elected representatives at varying levels, local authorities and officers within them (such as environmental health officers).

3.2.9. MAN organised the full list of stakeholders into these categories. Contact details for these people and organisations, where publicly available, were gathered and logged.

3.2.10. It was then possible to determine the way in which individual stakeholders would be engaged with, based on their unique requirements and individual situation(s).

3.3 Engagement materials and online questionnaire

3.3.1. MAN recognised that the stakeholders it had identified, and those wanting to engage independently, would have varying degrees of knowledge about how airspace is managed; CAP1616 as a process and MAN's reasons for airspace change.

3.3.2. To address this, MAN produced an engagement document, called 'Be Part of the Conversation: The Future of Airspace', which can be found in Appendix 1.

3.3.3. This document provided information on the subject areas referred to above. It also served as a tool to start a two-way conversation with stakeholders and develop an understanding of the issues of most importance to them.

3.3.4. The first three sections of the document gave readers a background into the Future Airspace Project, covering the following areas:

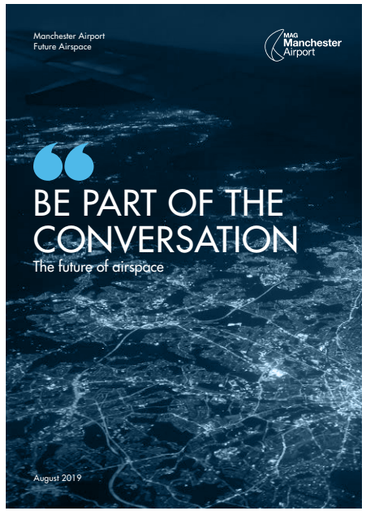
- What is airspace
- Why airspace is changing
- How our airspace currently works at MAN
- How the process of modernising airspace works
- An explanation of Step 1B.

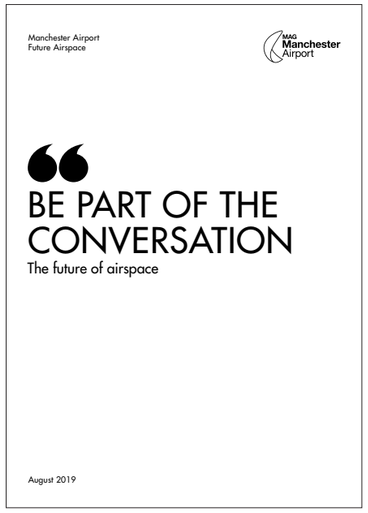
3.3.5. The document outlined 10 questions for readers to consider, which aimed to stimulate responses that would inform the drafting of Design Principles. Readers were also invited to submit any other issues they thought should be considered throughout the process in question 11. These same questions were used to create an online questionnaire, and formed the basis of the first phase of Focus Group discussions.

3.3.6. The questions were devised following a series of internal workshops involving relevant community relations teams and technical experts, such as NATS and Osprey, and overseen by tCi. They aimed to cover themes of most relevance to the process of designing flight paths and to encourage stakeholders to think about how they could affect them.

3.3.7. In drafting questions, examples of those used by other airports were referred to, while example questions set out in CAP1616 were also used as a guide. These examples were built upon to develop a set of questions relevant to MAN.

3.3.8. In each instance, explanatory text accompanied the question, with two suggested options put forward. It was made clear respondents were also being invited to suggest alternative options and to provide more detailed comments to explain their selections.





3.3.9. Providing free text space was key to understanding why respondents answered in a particular way and so they were able to articulate concerns and/or potential impacts not previously considered by MAN. It also gave respondents the ability to describe any further information they may require to make an informed decision on a particular question.

3.3.10. Accessibility was an important consideration in designing, writing and editing the document. All text, including that accompanying diagrams and charts, was referred to the Plain English Campaign, with the whole document achieving a Crystal Mark as a result.

3.3.11. A draft was shared with the SRG for feedback, with several changes made as a result. Specific examples included a change to the font size, colour scheme and presentation of the map showing the Potentially Affected Area. Concerns the document should appear less corporate and more user-friendly were addressed. Feedback was also received that a plain black and white version of the document should be produced to ensure it was accessible to those who may find it difficult to read materials with colours.

3.3.12. Prior to its public release, the document was also sent to a series of external stakeholders, with limited prior knowledge of the subject area, for feedback. This resulted in a series of further changes, such as a clearer explanation of what was contained in each section on the contents page.

3.3.13. The document was uploaded to a dedicated web page for any member of the public to access this web page also hosted the online questionnaire, which could be completed by anyone wanting to submit feedback.

Digital copies of the document were sent to around 900 stakeholders previously identified, with hard copies sent on request. Copies were also made available at local libraries and community events and distributed to stakeholders at one-to-one and group meetings.

3.3.14. In total, 728 responses were received via the online questionnaire. These were analysed alongside feedback from the Focus Groups and submitted into the long list of Potential Design Principles, shown at Appendix 9.

3.4 Phase 1 Engagement

3.4.1. Focus Groups

3.4.1.1. MAN chose Focus Groups as a suitable method of engagement for Step 1B for a number of reasons.

3.4.1.2. In order to develop the best possible understanding of the issues of importance to those likely to be impacted, it was important to ensure a balance of views was heard. This was both in terms of interest area and geography.

3.4.1.3. Focus Groups enabled this to be achieved in a systematic way by recruiting a cross-section of the general public and specific stakeholder categories. This meant that MAN was not relying on the views of a self-selecting group of stakeholders. This was also key to ensuring 'seldom heard' stakeholders were involved in the engagement process. For example, care providers, disability groups and members of the GA community, who would not typically monitor MAN updates or attend community outreach events, participated in Focus Groups after being invited to do so.

3.4.1.4. They also enabled positive relationships to be developed with stakeholders at the earliest possible opportunity. It is hoped these relationships will be maintained and built on throughout the CAP1616 process.

3.4.1.5 It was recognised that some of the concepts being discussed were complex, potentially requiring further explanation and debate. This was possible in a Focus Group environment, which enabled stakeholders to speak freely and develop their own views. At the same time, every effort was made to ensure accessible and understandable information was provided to anyone interested in the process.

3.4.1.6. Establishing a two-way conversation was a priority for Step 1B. The use of Focus Groups – and the adoption of a two-phase process – made this possible.

3.4.1.7. To ensure neutral facilitation, YouGov was appointed to oversee the organisation and delivery of Focus Groups.

3.4.1.8. The two-phase process agreed for Step 1B saw the questions put to stakeholders during an initial series of 11 Focus Groups, details of which are provided below. The insights gathered during these sessions, along with feedback received via the online questionnaire, were used to inform the development of Draft Design Principles.

These Draft Design Principles were then tested during a second round of four Focus Groups, made up of participants from the first phase and some new stakeholders.

The insights from the second phase were used to refine and adapt the Draft Principles and arrive at the Proposed Design Principles set out in this document.

3.4.1.9. The number and make-up of the Focus Groups was based on two factors:

- The four stakeholder categories set out in CAP1616
- The list of stakeholders identified by MAN as part of Step 1B.

3.4.1.10. There were seven 'community' Focus Groups, which between them covered the 'relevant national organisations' and 'communities affected by potential impacts' categories set out by the CAA.

3.4.1.11. These seven Focus Groups were made up of:

- 1X general public (currently over flown)
- 1X general public (not currently over flown)
- 1X business representatives
- 1X care providers
- 1X community representatives
- 1X leisure organisations
- 1X special interest groups

3.4.1.12. General public and care provider groups were recruited by YouGov, documenting respondents' age, gender, ethnicity, social grade and electoral ward lived in (among other demographic and attitudinal information).

3.4.1.13. For other groups, MAN provided YouGov with a redacted longlist of stakeholders to enable it to achieve a mix of demographics, including representation from a mix of different wards within the Potentially Affected Area. Groups were intentionally over-recruited, to account for potential drop-out, with the aim of six-to-eight people attending each group.

3.4.1.14. There were two aviation Focus Groups, covering representatives which fell into the 'directly affected local aviation' and 'NATMAC' categories outlined by the CAA.

3.4.1.15. Finally, there were two elected representatives Focus Groups, which also covered representatives who fell into the 'communities affected by potential impacts' category. This included parish, borough and county councillors.

3.4.1.16. Potential participants were first sent an introductory email by MAN, inviting them to respond to the research team at YouGov for further information about their relevant Focus Group. This was followed-up to ask them to confirm or decline a place.

3.4.1.17. Where numbers fell short for a particular Focus Group, participants were selected and invited by YouGov or via its trusted free-find recruitment partners. Again, basic demographic information was recorded, including age, gender, location and further attitudinal information. In the case of the aviation Focus Groups, one session was delayed to ensure the right number and mix of stakeholders could be recruited.

3.4.1.18. At the request of the SRG, a trial run was held prior to the programme of Focus Groups beginning. MAN employees who had no prior knowledge of airspace modernisation took part. Following this, a series of small changes were made to the way Focus Groups were delivered, including the provision of clearer background information to attendees and an emphasis on encouraging other options to be put forward by participants. In particular, as a result of the trial run, participants were sent a digital copy of the engagement document in advance.

3.4.1.19. A total of 91 people attended the 11 Focus Groups, with group sizes between five and 11. A full list of the people and organisations that attended each Focus Group is contained in Appendix 2.

3.4.1.20. On attending the Focus Groups, attendees received an explanation of the purpose of the session, and were first asked to talk about their initial thoughts and associations with MAN.

3.4.1.21. Following this, they were presented with information about airspace modernisation nationally and MAN's role in the process, giving some background, including the Potentially Affected Area involved.

> Throughout all discussions, participants were not only invited to consider the options put before them, but also encouraged to suggest alternatives of their own.

3.4.1.22. Stimulus materials, including the engagement document, were used to illustrate this. Participants then had opportunity to feed back their thoughts on the process and their understanding of it, before moving on to look at each of the questions in turn. Throughout all discussions, participants were not only invited to consider the options put before them, but also encouraged to suggest alternatives of their own.

3.4.1.23. A MAN representative attended each session, answering technical questions on invitation as and when appropriate. All Focus Groups lasted two hours.

3.4.1.24. Following each Focus Group, feedback was gathered from participants on the process followed. They were asked how important they felt it was they had been asked to contribute; the extent to which they felt able to contribute; whether they felt the sessions had been useful to them or their organisation; the key themes they picked up from the sessions and any other comments they wanted to make.

3.4.1.25. Of those asked, 99% felt it was important or extremely important they had been involved, with 65% feeling able to contribute either 'a lot' or 'a great deal.' More than 70% felt sessions had been useful or extremely useful to them personally, and a similar percentage felt the same in terms of relevance to their organisation.

3.4.1.26. In terms of key themes, the importance of engagement was clear, with others appreciating MAN's work to involve the community and many articulating their understanding of the importance of the Future Airspace Project. Others took the opportunity to emphasise that 'noise and emissions matter.' Around half offered no further comment, while those who did put forward other pieces of feedback referred to themes already covered by the engagement, such as the need to consult communities, consider other airspace users and reduce emissions wherever possible.

3.4.2. Direct engagement

3.4.2.1. As identified in planning for Step 1B, the most suitable approach for certain stakeholders was direct engagement through MAN's existing regular programme of activity or through newly established links. This included the offer of one-to-one meetings as well as using the opportunity to add an overview of MANs Future Airspace Project to regular meetings with both internal and external stakeholders. This ensured that views were received from individuals or groups who were unlikely to be able to attend Focus Groups or be represented in a public forum.

3.4.2.2. An email from the MAN Chief Executive Officer (CEO) was sent to around 900 stakeholders, setting out the reasons for contacting them and directing them to the MAN Future Airspace website, where they could access the document and complete the online questionnaire. They were invited to request a one-to-one meeting if they wanted one. A copy of this email is included in Appendix 4.

3.4.2.3. This process was followed to ensure all stakeholders identified were given the opportunity to join the conversation. In instances where emails were returned as undeliverable, addresses were checked and replaced accordingly. A follow-up email was sent to the same list towards the end of the engagement period.

3.4.2.4. Members of Parliament (MPs) for constituencies within the Potentially Affected Area received an offer to meet one-to-one, at the 2019 party conferences, in Westminster, or in their constituencies to update them on the process and seek their help in communicating to their constituents. Any request for a meeting was provided and further details can be found in Appendix 3.

3.4.2.5. Those wanting to provide feedback were encouraged to submit their views via the online questionnaire to ensure that their views were captured accurately.

3.4.2.6. MPs who responded by email or had one-to-one meetings were focused on ensuring their constituents were aware of the process and helping to spread awareness through their communication channels. They were also keen to understand how their constituents' feedback would be responded to and considered in the drafting of Design Principles.

3.4.2.7. By having an online questionnaire, this ensured a transparent and open approach, ensuring everybody who wished to submit their views was able to do so.

3.4.2.8. Those who didn't want to follow each question could simply write their views in the very last question which asked for any other things MAN should consider when developing Design Principles. Some members of the public sent in written feedback which was inputted by MAN onto the online questionnaire.

3.4.2.9. MAN undertook a range of activities to maximise awareness of its Future Airspace Project, and to communicate how people and organisations could join the conversation.

3.4.2.10. These activities were to supplement the minimum requirements set out by CAP1616, and were delivered to build as strong an understanding as possible of the issues of greatest priority to all stakeholders.

3.4.2.11. As outlined in Section 3.3, an engagement document was produced and uploaded to a dedicated web page. It set out background to the process, the reasons for change, the questions being asked and the ways in which people could respond. Once this was available online, the following activities were delivered to maximise awareness

3.4.3. Media activity

3.4.3.1. MAN issued a press release outlining the engagement activity taking place, the ways in which people could join the conversation and the current Stage of the CAP1616 process. A copy of the press release, the date it was issued and a list of publications it appeared in is in Appendix 6.

3.4.3.2. This media activity helped raise awareness of the process and communicate to audiences that may not have been covered by the other activities set out in this document. There were noticeable spikes in visits to the web page and responses to the online questionnaire following coverage appearing. Content was also included in MAN's own community e-News, which was emailed to more than 2,000 recipients.

3.4.4. Social media

3.4.4.1. During the course of the engagement phase MAN posted information on it's social media channels to direct people to the web page and engagement materials. The channels used had more than 270,000 followers and posts were viewed nearly 6,000 times.

3.4.5. Internal communications

3.4.5.1. In recognition of the fact MAN's employee base includes many people who live within the Potentially Affected Area, and that colleagues may face questions from customers and other stakeholders, a dedicated note was written to all staff by the MAN CEO. This can be found in Appendix 5.

3.4.5.2. This set out the reasons for change, background on CAP1616 and details of how people could join the conversation, including a link to the web page, engagement materials and online questionnaire.

3.4.6. Regular activities

3.4.6.1. As part of its long-standing commitment to community engagement and communication, MAN has a wide-ranging programme of activity in areas within the Potentially Affected Area, particularly those already overflown. These activities are organised in locations and at times that have proven to be accessible to the majority of the communities concerned.

3.4.6.2. That includes a series of regular Outreach sessions in the local community, as well as 'Masterclasses' with local councillors and other meetings and speaking engagements.

That activity continued during the course of the Step 1B engagement process, and included:

- 10 Outreach meetings in communities, following by an additional meeting in response to a request from the community. This equated to more than 50 hours of face-to-face availability;
- Eight separate meetings with Parish, Ward and Borough councillors, representing 29 different councils;
- A meeting of MAN's Consultative Committee; and
- Presentations, covering a wide-range of issues including Future Airspace, to organisations including The Aviation Society, Flight Operations and Safety Committee, Airline Operators Committee and a group of environmental health officers.

3.4.7. The first phase of Focus Groups, direct engagement and the online questionnaire proved to be an effective way of identifying the issues of importance to the different stakeholders engaged.
This paved the way for Draft Design Principles to be further developed. Further information on how MAN developed Draft Design Principles can be seen in Section 5.

3.5 Phase 2 engagement

3.5.1. In October 2019, a further four Focus Groups were held to review the Draft Design Principles. Focus Groups were slightly longer than in phase one at two-and-a-half hours, to reflect the larger group size.

3.5.2. They were organised into the following groups, ensuring the four categories set out by CAP1616 were still represented:

- 1X general public
- 1X business representatives, community representatives and care providers
- 1X leisure organisations and special interest groups
- 1X aviation and elected representative

3.5.3. Participants who attended the Focus Groups in the first phase, and had given permission to be re-contacted, were contacted again, to attend the relevant group by YouGov directly. Groups were topped-up with new participants to reach the target number of 15 per group. It was ensured a good geographical spread was achieved.

3.5.4. The sessions began with a recap of the prior phase of engagement and participants were again given an overview of the Future Airspace Project process and asked to give their feedback and raise any questions. This was particularly important for participants who had not been involved in the first phase.

3.5.5. Following this, each Draft Design Principle was discussed in detail, including an explanation of how it reflected insights gathered from all forms of engagement in phase one. Participants were asked to consider whether the Principles reflected the outputs of the first phase of Focus Groups or to raise any new observations

3.5.6. The two-phase process enabled MAN to develop Proposed Design Principles that were the product of a true two-way conversation with stakeholders.

3.6 Quality Assurance

3.6.1. Stakeholder Reference Group

3.6.1.1. An SRG was established to provide independent advice and guidance on its communication and engagement strategy. It was established to shadow MAN's engagement process for Step 1B and subsequent consultation under the CAP1616 process and to comment on the process being followed by MAN, ensuring CAP1616 is being followed and that those likely to be affected by the Future Airspace project are being adequately involved.

3.6.1.2. The SRG is independently chaired and also has an independent secretariat, provided by tCi, which will quality assure the process, with all meeting papers and minutes published on MAN's web page[10] to ensure transparency.

3.6.1.3. The SRG met twice as part of Step 1B:

- A meeting held before Step 1B to review the strategy for this Step, programme and materials. Details of feedback provided by the SRG during this meeting have been referred to earlier in Section 3.3
- A meeting held after all Step 1B engagement activity was completed, to review MAN's assessment of the Step 1B feedback and to start to consider its process for subsequent stages of CAP1616.

3.6.1.4. A full list of SRG members and its Terms of Reference are included at Appendix 7. The SRG will continue to meet throughout MAN's Future Airspace project.

3.6.2. Specialist advisor assurance

3.6.2.1. Our specialist advisor tCi has provided an assurance statement confirming MAN's adherence to the requirements of the CAP1616 process. This can be found in Appendix 8.

Read more online:
[10] https://www.manchesterairport.co.uk/community/living-near-the-airport/futureairspace/

4 Stakeholder insights

4.1 Introduction

The following pages set out the questions asked of participants during the first phase of Focus Groups. These were the same questions that were within the engagement document and the online questionnaire. For each question, a summary of the insights gathered from stakeholders via all methods of engagement is set out.

The majority of online questionnaire respondents supported the requirements set out in the question. Not all provided additional information, and some highlighted their preference to avoiding change and controlling airport growth but there was no consensus.

4 Stakeholder insights

4.2 Question 1
Avoid change or fly over new areas

4.2.1. We asked

Our flight paths were introduced after taking account of local views, and many have stayed the same for years.

Some people have chosen to live close to or under flight paths, perhaps because they are less affected by or concerned about aircraft noise. On the other hand, some people may have chosen to live in areas away from flight paths as they don't want aircraft flying over or close to their homes.

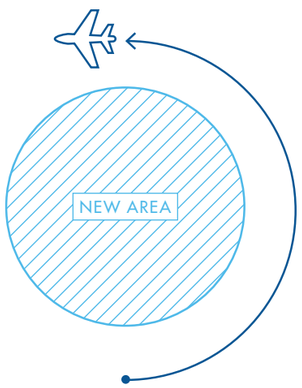
As we design our future flight paths, we need to consider whether to:

- prioritise keeping changes to a minimum to avoid flying over new areas (unless there is a strong reason to do so); or
- start with a 'clean sheet' and design new routes that might reduce the effect of aircraft noise, cut emissions and make better use of modern technology, but might fly over new areas as a result.

When we design our flight paths, which option below do you prefer and why?
Remember you can also give us a different view that reflects your specific priorities.

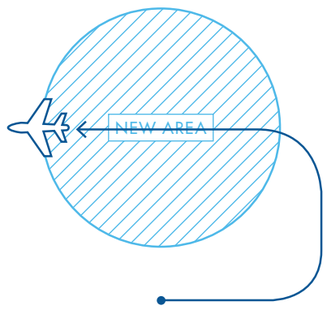
Option 1

Avoid aircraft flying over new areas, unless there is a strong case to do so.



Option 2

Design the best possible routes (taking account of noise, emissions, efficiency and other relevant factors), even if this means flying over new areas.



Please explain your preference and add anything you think we may have missed.

4.2.2. We heard

4.2.2.1. The consistent feedback from Focus Groups was that a 'clean slate' approach should be taken, which in turn should allow consideration of new areas being overflown.

4.2.2.2. There was an understanding of the reasons for change and the opportunities airspace modernisation presents, most notably around improved efficiency and reductions in noise and emissions impacts. There was a sense that a failure to consider flying over new areas would undermine the modernisation process as a whole, not least because the new designs need to stand the test of time.

4.2.2.3. With that in mind, some stakeholders, especially those in the 'Community' Focus Group, considered that changes (i.e. designs that would overfly new areas) should be clearly beneficial, in terms of reducing noise and emissions impacts. There should not be change for change's sake.

4.2.2.4. Furthermore, those who are already overflown felt the redesign process could help 'share the burden', with impacts more spread out, making the situation 'fairer' in the future.

4.2.2.5. Stakeholders acknowledged a potential for concern in communities that would be potentially overflown in the future.

4.2.2.6. Some fed back that those who are currently overflown are already used to the noise impacts, having chosen to live in a certain area in the knowledge they would be under a flight path.

4.2.2.7. Most of the stakeholders were of the view that the best possible routes should be designed, even if this means flying over new areas. Those who preferred option one raised concern about the impact on house prices. Some questioned whether flying over new areas would go against previous agreements between MAN and particular communities.

4.2.2.8. A key message was the need for detailed information about noise and emissions impacts to accompany any future route proposals.

4.2.2.9. Feedback from online questionnaires was more balanced, but favoured option one. Where further feedback was given, respondents cited concerns about their house prices as one of the primary reasons for opposing change. There was some reference to local agreements.

4.2.2.10. The majority of comments from those in favour of designing the best possible routes referred to the opportunity to minimise emissions and to communities 'sharing' the impacts associated with being overflown.

4.3 Question 2
Concentrating or spreading out flight paths

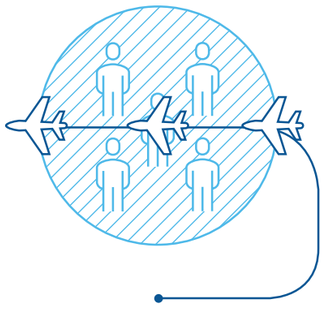
4.3.1. We asked

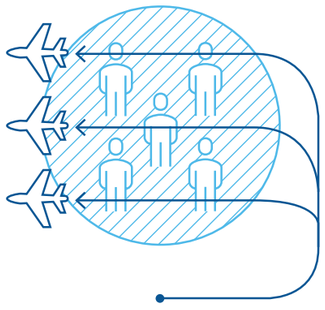
Modern aircraft can use satellite guidance to allow them to fly more accurately. This means flight paths can now concentrate aircraft so fewer people are overflown and affected by aircraft noise. However, the people who are overflown will be affected more than they previously were.

As an alternative, we can design flight paths that spread aircraft out over a wider area, perhaps using several alternative routes, and use varying flight paths on different days of the week or during different times of day to provide periods when there is no aircraft noise. If we take this approach, we will need to decide how long the periods of 'no aircraft noise' last to create significant benefit.

When we design our flight paths, which option below do you prefer and why?
Remember you can also give us a different view that reflects your specific priorities.

Option 1	Option 2
Concentrate flight paths, which will affect fewer people but to a greater extent.	Spread out flight paths, which will affect more people but to a lesser extent.





Please explain your preference and add anything you think we may have missed.

4.3.2. We heard

4.3.2.1. The feedback from Focus Groups was split more evenly in relation to concentrating or spreading out flight paths, with a slight preference towards spreading out. Those who expressed a preference for spreading out were generally seeking to share the noise impacts more fairly between local communities.

4.3.2.2. However, designing routes to vary by time as well as location was suggested to ensure that there would be restrictions on how often people are overflown.

4.3.2.3. Similar concerns were raised about those potentially newly affected if paths were to be spread out in new areas.

4.3.2.4. Stakeholders in the General Public, Community and elected representative groups were the most likely to focus on the impacts of noise and emissions, though it was noted that perspectives differed depending on where the participants lived. Aviation and Business groups focused more on the practical challenges associated with spreading flight paths out.

4.3.2.5. The groups that had a stronger preference for the concentration of paths did so on the basis that this was seen as the most efficient and that spreading out may not be practical. However, they did so with the acknowledgement that this may lead to a bigger impact to those overflown and recommended support to minimise this impact from noise.

4.3.2.6. Feedback from online questionnaires was similarly split with some wanting to 'share the burden' with spreading out, and others wanting to affect fewer people by concentrating paths.

4.4 Question 3
Flying over built-up areas

4.4.1. We asked

When designing flight paths, we need to consider the local communities that will be flown over and affected by aircraft noise. Our current routes avoid flying over built-up areas, where possible, as this was the advice from the Government at the time the flight paths were designed.

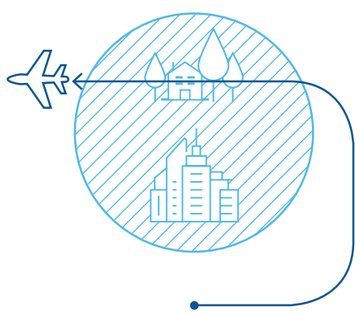
If we designed flight paths that flew over built-up areas, more people would be overflown. However, background noise in towns and cities (from cars, construction, crowds of people and so on) is higher, so aircraft noise may be less noticeable.

If we continue to avoid flying over built-up areas, this will reduce the number of people who are overflown. However, this may lead to aircraft flying over areas where the level of background noise may be lower, so aircraft noise may be more noticeable.

When we design our flight paths, which option below do you prefer and why?
Remember you can also give us a different view that reflects your specific priorities.

Option 1

Avoid flying over built-up areas, which will affect fewer people but to a greater extent.



Option 2

Avoid flying over villages and rural communities, which will affect more people but to a lesser extent.

Please explain your preference and add anything you think we may have missed.

4.4.2. We heard

4.4.2.1. Participants felt this was a complex question and that additional information is needed to fully consider the impacts of both options.

4.4.2.2. It was felt avoiding built-up areas made sense to a lot of people for reasons such as safety and population density. This would mean avoiding these areas and impacting fewer people.

4.4.2.3. However, there was acknowledgement that rural areas tend to have lower ambient noise and so the impact of noise could be felt greater in these areas than built-up areas.

4.4.2.4. The General Public, Aviation, Care Provider groups advocated the spreading of impacts between both rural and built-up areas. The aviation group strongly preferred avoiding built-up areas, citing safety reasons.

4.4.2.5. Avoiding rural areas appealed to some participants in a number of groups as it protects areas that people consider 'tranquil'.

4.4.2.6. This question stimulated a lot of discussion between participants. For example, questions were raised about whether avoiding built-up areas could create less efficient routes and as a result lead to increased emissions. Some groups, the care provider groups in particular, preferred to spread out the burden and consider using different paths at different times of day to offer a mix of both.

4.4.2.7. Comments were also made around the different views on what a 'built-up area' is and so asked for clearer definitions on what this would mean.

4.4.2.8. While Focus Group feedback favoured option two, the online questionnaire evoked feedback that was more evenly split between avoiding populated areas and keeping 'tranquil' areas quiet.

4.5 Question 4
Balancing noise and emissions

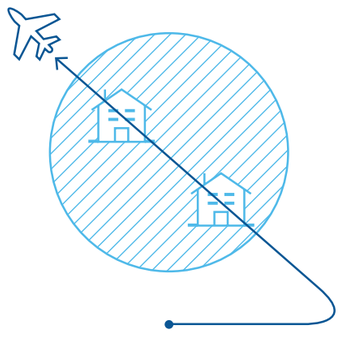
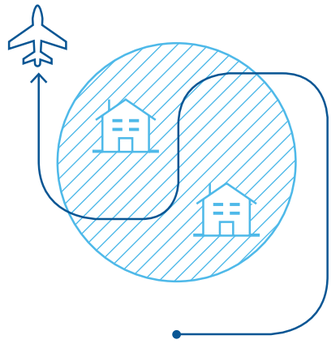
4.5.1. We asked

We can now design flight paths so that aircraft fly more direct routes, shortening the distance to their destinations and reducing CO_2 emissions. It can also make journey times a little shorter.

Sometimes, aircraft fly a little further to avoid flying over local communities. Shortening these routes so they fly more directly might, in some instances, lead to aircraft flying over more local communities, which could lead to more people being affected by aircraft noise.

We need to find the right balance between having more direct flights (to reduce emissions and journey times) and keeping local communities' exposure to aircraft noise to a minimum.

When we design our flight paths, which option below do you prefer and why?
Remember you can also give us a different view that reflects your specific priorities.

Option 1	Option 2
Fly the most direct routes possible to reduce emissions, even if this means flying over more people.	Avoid flying over communities so fewer people are affected by aircraft noise, even if this means higher CO_2 emissions.
	

Please explain your preference and add anything you think we may have missed.

4.5.2. We heard

4.5.2.1. Participants from all Focus Groups acknowledged the need to tackle the impacts of both emissions and noise, with emissions being the priority for most. A large number saw the redesign of airspace as an opportunity to tackle this, while also being forward-thinking.

4.5.2.2. Given the focus on emissions, flying the most direct routes was a natural preference for most people, as it was seen as the option with the most potential to reduce emissions.

4.5.2.3. However, people felt they needed more information on what the emissions savings are and whether direct routes would mean that more people would be overflown. For example, if avoiding a large community meant a small curve in the flight path making it less direct, but with a minimal impact on emissions, people preferred this option as it would mean less impact for people on the ground.

4.5.2.4. Some stakeholders suggested a third option which would be to fly the most direct route on take-off for speed and efficiency but avoid local communities on landing to minimise the noise impact on the ground.

4.5.2.5. Feedback from the online questionnaire showed most people preferring to avoid flying over communities even if this means higher CO_2 emissions. Again, questions were raised on what this meant for those overflown (when noise impacts become more important) and more detail needed on emissions savings from more direct routes.

4.5.2.6. While some acknowledged that more direct flight paths would reduce emissions, they also questioned whether the environmental benefit would be significant in the context of the overall flight.

4.6 Question 5
Taking account of current arrangements and agreements

4.6.1. We asked

We already operate in a way that limits the effect of aircraft noise. This includes the early south turn before Knutsford only being used by quieter aircraft, the westerly route that spreads aircraft over a wide area, and departing aircraft avoiding flying over Knutsford if possible.

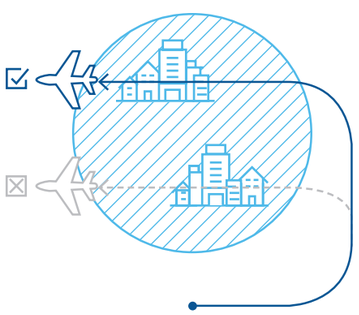
Some of these ways of operating are voluntary, some have been agreed locally, and others have been written into legal agreements.

As we design future flight paths, we need to consider whether to continue operating as we have previously agreed or whether we should design entirely new routes to achieve the best possible outcomes (taking account of factors such as noise, emissions and the airport running efficiently).

When we design our flight paths, which option below do you prefer and why?
Remember you can also give us a different view that reflects your specific priorities.

Option 1

Continue with current arrangements and ways of operating.



Option 2

Design new routes to achieve the best possible outcomes for reducing noise and emissions while increasing the efficiency of the airport.

Please explain your preference and add anything you think we may have missed.

4.6.2. We heard

4.6.2.1. Focus Group feedback showed a strong preference of designing new routes to achieve the best possible outcomes. It was considered the strongest approach, and given the opportunity to redesign flight paths, it was considered the option with the most future-proofing. People particularly focused on the opportunity to reduce noise and emissions but would like details on these at a later stage to understand the benefit to local communities, with 'efficiency' read by some as a way to save money rather than improve the situation for those currently impacted by aircraft noise.

4.6.2.2. People commented that the local areas have changed over time and see this is an opportunity to adapt and fit the new landscape.

4.6.2.3. Continuing with current arrangements was seen as a way to reduce potential conflict but was ultimately seen as too limiting at this stage in the design process. There were differing levels of understanding as to what current commitments are and whether they are legally binding. Elected representatives were most cautious about moving away from any established arrangements. Should changes be sought to any existing arrangements, they described the need for reasonable consideration and careful and timely communication with those affected.

4.6.2.4. Feedback from online questionnaires differed on this question, with a preference for continuing with current arrangements. Reasons given for this included comments on the concern of potentially overflying new areas and impacting people who bought houses knowing they were not under a flight path.

4.6.2.5. Some stakeholders were concerned that the current arrangements do not fairly share the effects of overflying and so the opportunity should be taken to address this. Some also suggested that specific communities should not be prioritised and that all Principles should be applied consistently across all routes.

4.7 Question 6
Other airspace users

4.7.1. We asked

While we control airspace around our airport, not all flights in our airspace are to and from the airport. We need to make our airspace available for other users, including private aircraft, helicopters, military flights, air ambulance, gliders, microlight aircraft, balloon flights and drones.

How we design our flight paths could allow other users to operate freely or might lead to them making lengthy detours and experiencing delays.

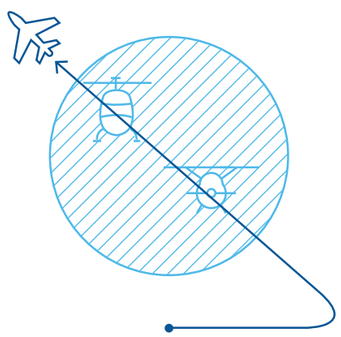
As we design future flight paths, we need to consider whether to:

- prioritise the best possible routes for aircraft flying to and from the airport, to minimise noise, emissions and inefficiencies in operations at our airport; or
- introduce flight paths that mean other airspace users are not significantly disadvantaged by changes, even if this means aircraft using the airport cause more noise or emissions.

When we design our flight paths, which option below do you prefer and why?
Remember you can also give us a different view that reflects your specific priorities.

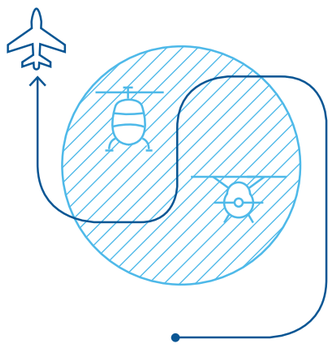
Option 1

Design the best possible routes (for minimising noise, emissions and inefficiencies in operations at our airport) for aircraft flying to and from the airport, even if this disadvantages other airspace users.



Option 2

Design routes that minimise the effect operations at the airport have on other airspace users, even if this means increased noise and emissions.



Please explain your preference and add anything you think we may have missed.

4.7.2. We heard

4.7.2.1. The majority of Focus Group participants expressed preference for the Principle of prioritising MAN traffic over other airspace users. There were various reasons for this. General Public and Business users saw the economic value of maximising airport efficiency by ensuring airport traffic had priority. Business groups acknowledged airport traffic was the most profitable and drove most economic benefits to the region, citing this as another reason for its prioritisation. Others agreed it was important to design the best possible routes, in terms of minimising noise and emissions, even if this disadvantaged other airspace users.

4.7.2.2. Some participants questioned the extent to which other airspace users would be impacted in the first place, suggesting disruption to them would be minimal in any event. This related to a theme brought out by those suggesting a variation/improvement to the Principle. They said it would be useful to have information about the extent to which other users would be impacted when designs are proposed.

4.7.2.3. It was noted most stakeholders, except those classed as Aviation representatives, had little understanding of the role and needs of General Aviation (GA). It was the GA representatives who opposed the prioritisation of airport traffic the most, on the basis that other airspace users' needs should be taken into consideration.

4.7.2.4. There were calls for flexibility in relation to emergency aircraft and, to a lesser extent, military aircraft.

4.7.2.5. Many of those who preferred option two did so because they felt there should be consideration for the needs of emergency aircraft. Others suggested this would be a valuable caveat.

4.7.2.6. Feedback via the online questionnaire was also in support of the prioritisation of airport traffic, primarily on the basis it was more economically important to the community than private aircraft. Written correspondence was received from members of the GA community, reinforcing their request for their interests to be considered throughout the process. Others felt the emissions benefits associated with designing direct routes should be prioritised. Flexibility with regard to Air Ambulances was also raised.

4.8 Question 7
Aircraft types

4.8.1. We asked

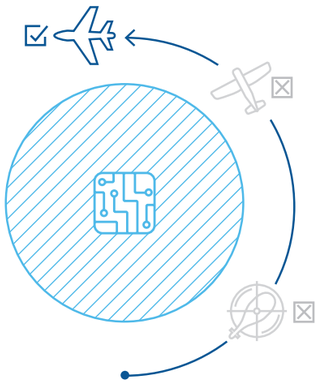
Some flight paths would require aircraft to have the very latest navigation equipment. If we design flight paths that require aircraft to use the latest equipment, it could make it difficult for older or smaller aircraft to be used. This could reduce the frequency of some flights and potentially lead to delays. It may also result in aircraft without up-to-date technology having to fly slightly different flight paths, or flying less accurately, which could lead to them flying over local communities which are not currently flown over.

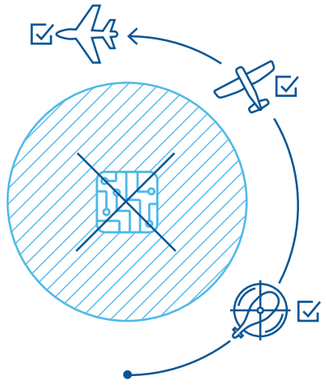
If we design flight paths that are suitable for all aircraft types, we may not be able to take full advantage of some of the latest equipment and techniques. This might mean, for example, that we can't minimise aircraft noise as effectively or that the airport operates less efficiently.

The number of older and smaller aircraft affected by any change we make is likely to reduce over time. In the meantime, we need to consider how and where these aircraft currently operate.

When we design our flight paths, which option below do you prefer and why?
Remember you can also give us a different view that reflects your specific priorities.

Option 1	Option 2
Take advantage of the latest technology and techniques, even if this makes flight paths more difficult for older and smaller aircraft.	Make flight paths suitable for all aircraft, even if this means new technologies and techniques cannot be used.





Please explain your preference and add anything you think we may have missed.

4.8.2. We heard

4.8.2.1. The clear preference was that the latest technology should be embraced. It was felt the modernisation of airspace should naturally go hand-in-hand with the adoption of technological advancements. This is especially the case if this means future flight paths would reduce noise and emissions by being more direct.

4.8.2.2. Aviation groups had a particular preference for this, acknowledging aircraft can now be smaller, lighter and fly more accurately. It was felt this could in turn result in there being more scope to accommodate GA traffic.

4.8.2.3. Those already living under flight paths preferred this option in particular, noting newer aircraft would be quieter.

4.8.2.4. Most participants felt the onus was on airlines to use the most up-to-date technology possible. Some suggested incentives should be in place for those airlines less able to adopt new technology. Others questioned what would happen to older aircraft once they had been decommissioned.

4.8.2.5. Many questioned whether there was a need for a phased approach to the introduction of new technology, requesting information to show what this would look like.

4.8.2.6. Online questionnaire respondents had a preference for adopting new technology. Many felt designing routes based on the latest available technology would be a catalyst that encourages airlines to use the newest possible aircraft, which in turn would deliver noise and emissions benefits to communities.

4.9 Question 8
Multiple flight paths in the same area

4.9.1. We asked

For safety reasons, aircraft must take off and land into the wind. This allows departing aircraft to climb faster and landing aircraft to stop more quickly.

The direction of take-off and landing changes when the direction of the wind changes. For this reason, we have two sets of flight paths, one for when the wind is from the west (as is most often the case) and one for when the wind is from the east.

From each runway there are alternative arrival and departure routes. This means that we have several flight paths, some of which overlap.

If we design each new flight path on its own, we can make sure each route is the best it can be, so reducing noise and emissions, and allowing the airport to operate as efficiently as possible. However, designing each flight path individually could mean that, when we put them all together, some areas are overflown by several routes.

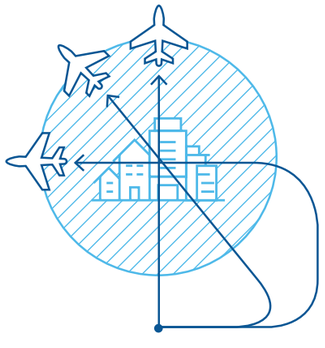
When we design future flight paths, we need to find the best overall outcome and consider whether we should prioritise:

- the efficiency of individual routes; or
- avoiding areas being overflown by several routes.

When we design our flight paths, which option below do you prefer and why?
Remember you can also give us a different view that reflects your specific priorities.

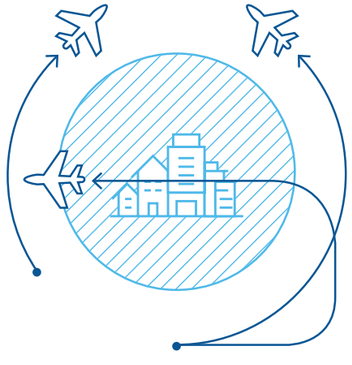
Option 1

Make sure each route can achieve the best balance between reducing noise and keeping emissions low, even if this means some areas are overflown by several routes.



Option 2

Avoid having areas overflown by several routes, even if this limits our ability to minimise noise and emissions.



Please explain your preference and add anything you think we may have missed.

4.9.2. We heard

4.9.2.1. This was felt to be a complex issue by Focus Group participants that required further explanation and discussion to help participants decide on their preference. Those who preferred option 1 typically did so on the grounds that operational efficiency and minimising emissions could be achieved.

4.9.2.2. It was felt climate change was such an important topic that it cannot be ignored, even if there were occasions when more than one flight path went over particular communities.

4.9.2.3. There were concerns that if routes were spread to prevent this happening, this could result in more people ultimately being overflown.

4.9.2.4. Others felt the actual impact of certain places being overflown by multiple routes could be negligible, especially if the areas in question are already overflown.

4.9.2.5. Safety was another key consideration. Participants, especially those from the Aviation community, felt complex designs to avoid communities being overflown by several routes could raise issues with safety.

4.9.2.6. As with many other questions, there was a sense more information will be needed at the point designs are presented, to help people understand the scale of the impacts associated with being overflown by multiple routes. Similarly, there was a desire to understand the reduction in emissions that could be achieved by designing the most direct routes.

4.9.2.7. There were suggestions a hybrid option could be adopted, whereby efficiency was promoted, but that a reasonable cap was imposed on the number of different routes that could overfly a single area. This was particularly raised by the care provider groups who were most concerned about the burden on communities under several flight paths.

4.9.2.8. Responses to the online questionnaire were more evenly split, reflecting the fact a greater proportion came from areas that are already overflown, including some communities under multiple flight paths. They described the noise impact they currently experience as a consequence of several routes passing over their communities. Others stated there would be a 'huge impact' if a community currently not overflown ended up being under multiple flight paths as a result of airspace modernisation.

4.9.2.9. Some felt the spreading of aircraft, by ensuring all flight paths are used by all aircraft types would be fairer to all communities.

4.10 Question 9
Areas that we should avoid flying over

4.10.1. We asked

The flight paths we design will control aircraft flying at altitudes of up to 7,000 feet. The areas that might be overflown up to this altitude are shown in the Potentially Affected Area.

When designing flight paths, we need to consider areas that will be overflown, particularly at lower altitudes. It may be best to avoid some areas, such as parks, historic properties and nature reserves, because they are particularly tranquil or spaces where people go to relax.

Certain buildings, such as schools, care homes and hospitals, can be particularly affected by noise.

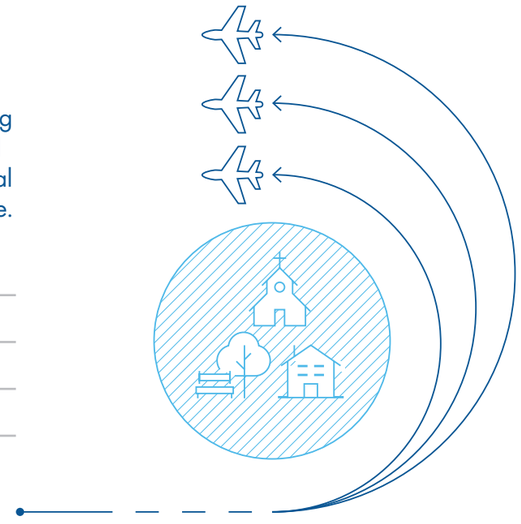
It may also be inappropriate to fly over some areas, for example if they present a danger to aircraft because they are used for military training or have a large number of birds.

When we design our flight paths, which option below do you prefer and why?
Remember you can also give us a different view that reflects your specific priorities.

Yes ☐

No ☐

If yes, please provide the name of the building or area, where it is located, explain why and when we should avoid them, and the potential consequences of flying over the particular site.



Please explain your preference and add anything you think we may have missed.

4.10.2. We heard

4.10.2.1. There were varied responses to this question, many of which were aligned to the specific interests of Focus Group participants.

4.10.2.2. For example, those in the Special Interest group expressed a preference for protecting peace and quiet. They said historical attractions and tranquil areas should be avoided if possible, saying this would benefit those visiting these places and wildlife that exists there. However, some suggested these areas could be overflown at night to minimise the impact on people.

4.10.2.3. Those from the Care Providers sector said that where noise would be found to have a bigger impact on vulnerable groups – such as those in care or education – avoiding these areas should be considered.

4.10.2.4. General Public participants felt many of these reasons were 'nice to have' but that some areas should be avoided for safety reasons. Examples included military sites and where there are large numbers of birds. Some talked about event spaces being avoided, on the basis that if there were an aircraft disaster, large numbers of people would be at risk.

4.10.2.5. Given these varied views, there was an acknowledgement across all groups that it could be ultimately unfeasible to avoid all of the locations being mentioned. Therefore, some suggested measures to reduce impacts, such as noise insulation and higher flight paths, would be more pragmatic solutions.

4.10.2.6. Respondents to the online questionnaire tended to suggest specific communities as places to avoid. There were more than 12 different towns and villages suggested as places to avoid. Others put forward more general suggestions, such as 'built-up areas,' 'rural areas,' 'schools' and 'hospitals/hospices'.

More online: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/714069/making-best-use-of-existing-runways.pdf

4.11 Question 10
Meeting requirements

4.11.1. We asked

As we design our new flight paths, there will be certain national and international safety, regulatory, legal and operational requirements that we must meet.

1. **Safety –** all new flight paths must meet all required safety standards.
2. **Industry standards and regulations –** industry standards (usually set internationally) or regulations apply to some aspects of how aircraft fly. All new flight paths must meet these legal obligations.
3. **Consistent with the national system of aircraft routes –** our new flight paths will become part of a new national network of routes, so they will need to take account of flights to and from other airports. As our flight paths will only be designed to 7,000 feet, they will also need to join up with national aircraft routes at higher altitudes.
4. **Maintaining and improving our airport –** Manchester Airport is a busy international airport which continues to grow to provide the services our customers need. In line with the Government's policy of 'making best use' of our nation's airports, our new flight paths should allow us to provide the services that we offer today and meet any future demand from customers (within the limits set by any planning condition).
5. **Keeping to government policy –** UK airspace is amongst the busiest in the world. To tackle the issue of congestion, the Government instructed the CAA to develop an Airspace Modernisation Strategy (AMS (CAP1711)), which was published in December 2018. Our Design Principles must take account of government policy on aviation, and reflect the requirements of the Airspace Modernisation Strategy.

Do you agree that any design for future flight paths must meet the requirements above?

Yes ☐ No ☐

If no, please explain why.

Do you think there are any other requirements that our new flight paths must meet?

Yes ☐ No ☐

We also ask you to explain your views and add anything you think we should consider.

Please explain your preference and add anything you think we may have missed.

4.11.2. We heard

4.11.2.1. All Focus Groups agreed that the considerations put forward in the question were reasonable.

4.11.2.2. Safety was the clear priority, with some suggesting protection of the environment should be added to the list. Business Representatives clearly recognised the economic benefits associated with enabling MAN to reach its potential. Elected Representatives agreed with this but felt expansion should not be 'at all costs' and community impacts should always be considered.

4.12 Question 11
Other things we should consider

4.12.1. We asked

In our questions we set out the important factors that we think we will need to consider when designing new flight paths.

As well as considering your answers to those important questions, we want to know if there are other things you think we should be taking account of.

If there is anything else we need to consider, or you have any suggestions? If yes, please give details below.

Please explain your preference and add anything you think we may have missed.

4.12.2. We heard

4.12.2.1. Stakeholders were invited to suggest anything else they thought MAN should consider. This resulted in a wide range of issues being put forward with no predominant theme, all of which were considered during the workshops convened to draft the Initial Design Principles.

4.12.2.2. A full list of all issues suggested in response to this question can be found in Appendix 9, as well as descriptions of how they were addressed, including how they were reflected in the Draft Design Principles.

4.12.3. Reports summarising the feedback received during the first phase of engagement are included in the appendices.
Appendix 10 contains a report on the feedback from the Focus Groups and Appendix 11 contains a report on the feedback from the online questionnaire.

5 Developing our Proposed Design Principles

5.1 Draft Design Principles

more online:
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/714069/making-best-use-of-existing-runways.pdf

5.1.1. Insights from the first phase of engagement were analysed and grouped by MAN and its specialist advisors to create a longlist of potential Design Principles. Each was reviewed , and a decision made as to whether to take it forward in its own right as a Draft Design Principle or to incorporate it into another Draft Design Principle.

The full longlist, including an explanation of why a Potential Principle was rejected can be found in Appendix 9.

5.1.2. The following table summarises the Draft Design Principles that were selected by MAN. It includes commentary to explain how each Principle was developed to address insights gathered during the first phase of engagement.

Stakeholder insight	Draft Design Principle	Commentary
Safety is essential and sits alongside all Design Principles	1. All routes must be safe, and must comply with industry standards and regulations.	Safety and security is paramount in everything that we do at our airport and for the aircraft flying into and out of it. This will be expected of us by all airport users, the public and our regulator, the CAA. This Draft Design Principle was primarily developed from feedback on Question 10 'meeting requirements' and appeared as a recurring theme throughout other question responses. Focus Groups and questionnaire responses consistently supported this Draft Design Principle.
Changes must connect to the wider UK network and Airways and align with the FASI-N programme, taking into consideration the needs of neighbouring airports	2. Any change must accord with the Civil Aviation Authority's (CAA) published Airspace Modernisation Strategy (CAP 1711) and any variation to it. Any current or future plans associated with the airspace change must also allow connection to the wider UK En-Route network and be aligned with the Future Airspace Strategy Implementation for the North (FASI-N) programme and take into consideration the needs of neighbouring airports.	This Draft Design Principle aligns with government policy and was developed from feedback on Question 10 'meeting requirements'. Focus Groups and questionnaire responses consistently supported this Principle. The CAA's Airspace Modernisation Strategy addresses the inefficiencies within the current airspace system and sets out the ends that future airspace must deliver. These include: • maintaining and enhancing high aviation safety standards • securing the efficient use of airspace • improving environmental performance by better managing noise through the use of quieter operating procedures • reducing emissions • avoiding flight delays • facilitating defence and security objectives.
The region benefits from the positive economic impact of the airport; expansion with consideration	3. Manchester Airport's future airspace must make best use of the capacity of its existing runways, in line with government policy.	The Future Airspace Project should deliver an airspace design that will enable MAN to make best use of its available runway capacity in order to meet the forecasted increased demand for air travel across the UK, and realise the associated economic and social benefits for those living and working in MAN's catchment across the North. This Principle aligns with our Statement of Need and government policy to make the best use of existing capacity at all UK airports in order to maximise the benefit to the UK economy. This is referred to in a policy adopted by the UK Government in June 2018, which stated that 'government has set out its support of airports beyond Heathrow making best use of their existing runways, subject to related economic and environmental considerations being considered'. The Principle was developed from feedback on Question 10 'meeting requirements'. Focus Groups and questionnaire responses consistently supported this Principle.

5.1 Draft Design Principles

Stakeholder insight	Draft Design Principle	Commentary
The noise and emissions impact should be shared by the many, not focused on the few. Concentrate where you can avoid people, but spread where you can't	4. Where practical, demonstrable noise and emissions benefits should be shared amongst residential areas. The use of dispersion and/or respite, especially at night, should be used to achieve this.	This Draft Design Principle was developed from feedback on Question 2 'concentrating or spreading out flight paths'. Focus Group and questionnaire feedback showed preference for spreading flight paths, noting that the main impact of concern related to noise impacts. All the Design Principles will be applied consistently; this means that no single community will be treated differently. Focus Group responses to Question 1 'avoid change or fly over new areas' had a strong preference for flying over new areas (balanced by Questionnaire responses) but were concerned by the impact of noise. This is addressed in this Principle, by dispersing routes to share the burden of impact.
Design the best possible routes, prioritising emissions savings	5. Where there is a demonstrable opportunity to minimise, and where possible reduce, emissions by designing the most direct routes, this will be considered.	This Draft Design Principle was developed from feedback on Question 4 'balancing noise and emissions'. Focus Group feedback preferred flying the most direct routes possible to reduce emissions, whereas questionnaire responses were more balanced, highlighting the impact to communities in this case. As this Principle will be balanced with other Principles relating to noise impacts, we include this Principle to reflect the desire to reduce emissions where possible. NATS confirmed that reducing carbon dioxide (CO_2) is a common objective in their operations which is in line with this Design Principle. Given current government policy gives greater priority to noise over emissions for routes below 7,000 feet, this Draft Design Principle will be balanced by other Design Principles relating to noise.
Prioritise airport air traffic over other airspace users, except for emergency aircraft	6. Any changes should prioritise airport air traffic over other airspace users, except for emergency aircraft.	This Draft Design Principle was developed from feedback on Question 6 'other airspace users'. Focus Groups and questionnaire responses consistently demonstrated a preference for this Principle, with many identifying the economic benefit of prioritising commercial aircraft whilst not impeding emergency aircraft. It should be noted that emergency and priority military aircraft are already afforded higher priority than commercial aircraft.
Consideration should be given to the needs of other airspace users	7. Designs should minimise the impact of our operation on other airspace users through keeping Controlled Airspace (CAS) requirements to a minimum.	This Draft Design Principle was developed from feedback on Question 6 'other airspace users'. Focus Group feedback from aviation stakeholders requested consideration of other airspace users where possible, hence the inclusion of this Principle, where we will look to release CAS if the design allows. Feedback from a paraglider and hang glider organisation also requested consideration to avoid specific areas within our existing boundary which has led to inclusion of this Principle.
Take advantage of new technology and the opportunity to modernise to ensure future-proofing	8. Airspace designs should be based on the latest aircraft navigational technology widely available.	This Draft Design Principle was developed from feedback on Question 7 'aircraft types'. Focus Groups and questionnaire responses consistently demonstrated a preference for prioritising new technology, with some suggesting a phased approach to implementation to ensure the economy is not affected. The application of this Principle may require the existing legal requirement to ensure all routes can be flown by all aircraft types to be clarified.
Avoid flying over noise sensitive areas, such as historical attractions, tranquil or rural areas, and sites of care or education	9. Where practical, airspace designs should avoid flying over noise sensitive areas, such as historical attractions, tranquil or rural areas, sites of care or education.	Avoiding overflight of all of these locations in every case would be impractical but we will endeavour to achieve this where practical. This issue will also be captured through our ongoing engagement, including consultation at Stage 3 of the CAP1616 process, where we will find out more about any local characteristics or noise sensitive areas that we should consider.
Reduce the impact of noise on people	10. Designs should seek to minimise, and where possible reduce, the effect of noise from flights upon people.	The feedback to our Question 3 'flying over built-up areas' was inconclusive, with many people highlighting impacts of flying over both rural and built-up areas. The common theme was the impact of noise upon people, including children, who live under flight paths, for example, affecting sleep, disturbing peace and quiet, affecting mental and physical health, especially at night. This has driven the inclusion of this Principle. This feedback is supported by the CAA Airspace Modernisation Strategy and government policy which states that noise will be given greater priority than emissions for routes below 7,000 feet. We have created this Draft Design Principle to ensure consideration of the impact on people of noise from flights. In practice this means we will consider local circumstances and, where possible, we will prioritise routing flight paths over areas of low residential density to minimise the number of people affected by noise, and incorporate noise efficient operational practices such as climbing and descending continuously. This will be considered and balanced alongside other Design Principles.

5.2
Feedback on Draft Design Principles

5.2.1. During the second phase of Focus Groups, participants were presented the Draft Design Principles, along with a summary of stakeholder insights from the first phase of engagement. They were asked whether the Draft Design Principles reflected the insights gathered during the first phase and were invited to give comments on suggested amendments and provide other feedback.

Below is a summary of the feedback received in relation to each of the Draft Design Principles, how this was addressed and the Design Principles proposed as a result of this process. The final commentary associated with each Principle is set out in Section 5.3.

The Proposed Design Principles are grouped by theme and the letters given represent the theme of each, as explained in Section 5.3

5.2.2. We asked: Draft Design Principle 1
All routes must be safe, and must comply with industry standards and regulations.

We heard	We did	Proposed Design Principle
Overall, participants in all Focus Groups strongly agreed with this Principle. Some queried what was meant by 'safety' and whether this related to passengers in the air, members of the public on the ground or just aircraft. Others sought further information about what industry standards were and how they are regulated. There were some suggested changes to language, such as the use of 'demonstrably' or 'good practice'.	Comments focused on clarifying what safety means rather than changing the meaning of the Design Principle, and so it was decided to keep the Principle as per the draft but ensure the commentary reflected the comments around clarifying 'safe' and what the 'industry standards and regulations' are.	S Our routes must be safe, and must comply with industry standards and regulations.

5.2.3. We asked: Draft Design Principle 2
Any change must accord with the Civil Aviation Authority's (CAA) published Airspace Modernisation Strategy (CAP1711) and any variation to it.

Any current or future plans associated with the airspace change must also allow connection to the wider UK En-Route network and be aligned with the Future Airspace Strategy Implementation for the North (FASI-N) programme and take into consideration the needs of neighbouring airports.

We heard	We did	Proposed Design Principle
Most stakeholders were of the view that the Draft Design Principle was sensible and should be supported. Many wanted further information about how coordination would take place, with others stating they assumed this happened anyway. Further clarification was sought about what was meant by 'neighbouring airports', with some concerned MAN would have to compromise based on the needs of others. An important piece of feedback was that the language used was technical and potentially difficult to understand, and that the Principle as a whole was too long and complicated.	Comments focussed on simplifying the Principle rather than changing the meaning. It was decided to lose the acronyms for the various organisations as it was unnecessary, and to simplify the Principle to the necessary information.	P Any airspace change must accord with the Civil Aviation Authority's Airspace Modernisation Strategy. Any change must also allow connection to the wider UK En-Route network and be aligned with the Future Airspace Strategy Implementation for the North programme and take into consideration the needs of other airports.

Read more online:
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/714069/making-best-use-of-existing-runways.pdf

5.2.4. We asked: Draft Design Principle 3

Manchester Airport's future airspace must make best use of the capacity of its existing runways, in line with government policy.

We heard	We did	Proposed Design Principle
The majority of participants understood the importance of the inclusion of this Draft Design Principle, and that it reflected insights from the first round of engagement. There was some uncertainty around what 'making best use' meant in practice. Some were unsure whether this simply meant more flights from MAN, or whether it referred to the more efficient operation of existing services. There were questions around what the maximum capacity of MAN's runways is. Participants, especially from the Special Interest/Leisure groups, said making best use of MAN's existing runways was preferable to building new runways elsewhere. There was feedback from the Elected Representatives and Aviation groups that full utilisation of the runways should not be at any cost to the local community, while there were some questions about whether the right surface infrastructure was in place to accommodate the full use of the runways. Others questioned the reference to government policy, asking whether it could change in the futu	Comments focused on clarifying 'best use'. In response it was decided to ensure the commentary describes the relevant government policy. The term 'make best use' was changed to 'enable best use' to make clearer that airspace is an enabler. The commentary has been updated to reflect the questions around maximum capacity and control of growth.	C Our future airspace must enable best use of the capacity of our existing runways, in line with government polic

5.2.5. We asked: Draft Design Principle 4

Where practical, demonstrable noise and emissions benefits should be shared amongst residential areas. The use of dispersion and/or respite, especially at night, should be used to achieve this.

We heard	We did	Proposed Design Principle
Most Focus Group participants agreed this was an important and welcome Draft Design Principle. The general concept of spreading flight paths across a range of different areas was broadly supported and was perceived as being 'fair'. Community/Care and Business stakeholders said that areas should feel a noticeable change as a result of spreading routes. Spreading – and thus potentially impacting a new area – to achieve only a minimal reduction in flights would be counter-productive, they felt. Clarity was sought on what was meant by respite, in terms of the times of day. It was felt the reference to night flights was an important one but, again, further clarity on specific times of day was requested. The use of the word 'benefits' was challenged by many. It was felt this could be replaced by 'effects' or 'impacts' to be more accurate. It was also felt that the phrase 'where practical' was not strong enough. Participants questioned what was meant by 'emissions benefits', debating that carbon emissions are felt globally, not in local communities and so reference to them in this Draft Design Principle was not relevant.	Draft Design Principle 4 had both noise and emissions within it. This new Principle responds to feedback to split out noise and emissions, and makes clear that dispersion and/or respite are methods that could be used to achieve a sharing of noise, especially at night – which came out as an important factor for people. By definition, carbon emissions have a global impact and so cannot be 'shared' through the use of these methods. Responding to feedback, the word 'benefits' was replaced with 'effects'. The commentary has been updated to reflect the questions around respite and emissions benefits.	N2 Where practical, noise effects should be shared. The use of dispersion and/or respite, especially at night, will be considered to achieve this.

5.2.6. We asked: Draft Design Principle 5

Where there is a demonstrable opportunity to minimise, and where possible reduce, emissions by designing the most direct routes, this will be considered.

We heard	We did	Proposed Design Principle
Participants felt this was an important Design Principle and that its inclusion reflected the feedback received during the first round of Focus Groups. Many felt reducing emissions was the issue of biggest concern for them, and society as a whole. It was felt emissions impact more people and so should be the number one priority. However, it was acknowledged there could be potential 'trade-offs' between reducing noise and reducing emissions. Clarity was sought around whether the emissions being referred to were carbon emissions, or others. Many felt more information would be needed to make informed decisions when route options are presented. This would require the noise and emissions reductions that could be achieved by different designs. In terms of language, it was felt by some that 'will be considered' was not strong enough, while 'where possible' was deemed by some to be non-committal. An Aviation stakeholder suggested continuous climbs and descents could also be used to reduce emissions, as well as the design of more direct routes.	The wording of this Proposed Design Principle was amended to respond to feedback around language used and the need to avoid appearing 'non-committal'. The commentary has been updated to reflect the questions around emissions and continuous climb/descents.	E We will minimise, and where possible reduce, emissions when we design routes. This may be achieved by selecting the most direct route.

5.2.7. We asked: Draft Design Principle 6

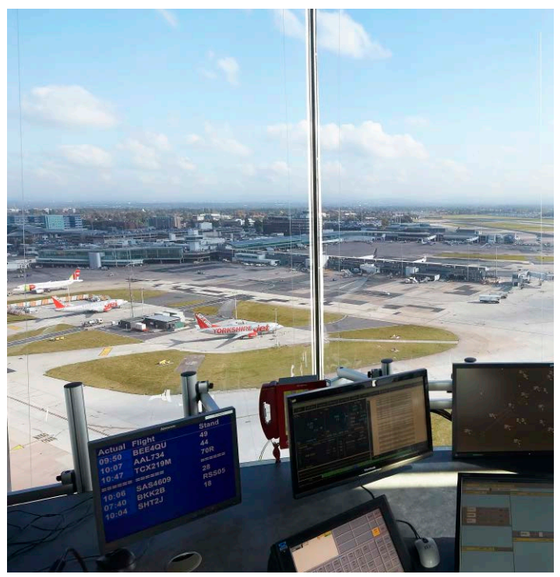
Any changes should prioritise airport air traffic over other airspace users, except for emergency aircraft.

We heard	We did	Proposed Design Principle
This was felt to be an obvious consideration, to the point that some participants questioned whether it should be a Draft Design Principle at all. Some clarification of what the other categories of airspace users were, with it being suggested the phrase 'non-commercial' would make it easier to distinguish. There was feedback that provision should be made for emergency aircraft where necessary. A neighbouring airport stakeholder questioned how the Principle would address aircraft from its airport passing through MAN's airspace. Some participants wanted clarity on the number of other aircraft that use MAN's airspace today. Others felt MAN's Controlled Airspace should not get bigger, but that within it MAN aircraft should always get priority.	In response to feedback relating to both Draft Design Principle 6 and Draft Design Principle 7, a single Proposed Design Principle was created. The related commentary has been used to respond to all issues raised during the first phase of engagement.	A Our route designs should minimise the impacts on other airspace users by limiting Controlled Airspace.

5.2.8. We asked: Draft Design Principle 7

Designs should minimise the impact of our operation on other airspace users through keeping Controlled Airspace (CAS) requirements to a minimum.

We heard	We did	Proposed Design Principle
While the majority of stakeholders felt this was a sensible Draft Design Principle, some lacked an understanding of what CAS was. Aviation stakeholders acknowledged a 'sense of etiquette and mutual respect' between all airspace users. Some questioned whether there were safety implications associated with this Principle. There were calls for this Principle to be merged with Draft Design Principle 6.	In response to feedback relating to both Draft Design Principle 6 and Draft Design Principle 7, a single Proposed Design Principle was created. The related commentary has been used to respond to all issues raised during the first phase of engagement.	A Our route designs should minimise the impacts on other airspace users by limiting Controlled Airspace.



5.2.9. We asked: Draft Design Principle 8

Airspace designs should be based on the latest aircraft navigational technology widely available.

We heard	We did	Proposed Design Principle
There were some questions about what the latest technology was and what its application meant in practice. However, once this was understood, the overwhelming majority of Focus Group participants supported this Draft Design Principle. There was an understanding that the use of modern technology would lead to routes being flown more directly and more accurately, thus delivering emissions benefits. There was some confusion about whether there was a plan to phase the introduction of routes that relied upon latest aircraft technology to be flown. Others wanted to understand the cost implications. Some participants felt it was a good idea to design all routes with the latest technology in mind, to serve as a mechanism to encourage airlines to adopt the newest aircraft as soon as possible. Aviation stakeholders felt some light aircraft, such as microlites, would be disadvantaged as users cannot afford the latest technology. Others wanted to ensure there were no safety issues associated with a reliance on technology. In terms of language, there was feedback that 'must' should be used instead of 'should'.	Comments focused on clarifying what latest technology means rather than changing the meaning of the Principle. In response, it was decided to therefore focus on ensuring the commentary properly describes the technology referred to and makes clear the process of natural phasing in line with the original feedback received.	T Our route designs should be based on the latest aircraft navigational technology widely available.

5.2.10. We asked: Draft Design Principle 9

Where practical, airspace designs should avoid flying over noise sensitive areas, such as historical attractions, tranquil or rural areas, sites of care or education.

We heard	We did	Proposed Design Principle
This Draft Design Principle was supported, but there were questions around different elements of it. Firstly, the fact a wide range of different places deemed to be 'noise sensitive' were listed led participants to feel it would be impractical to avoid all of them. Others were concerned that by avoiding some of these places, the result would be that more residential areas would be over flown. Some stakeholders, particularly those from Elected Representative and Aviation groups, questioned how perceptions of noise varied between urban and rural areas and how this would be considered. Similarly, there were questions about whether impacts – or perceptions of impacts – varied between night and day and whether this distinction was more relevant to some areas/types of properties than others. Given the range of places referred to in the Principle, some participants suggested priority should be given to those that would be 'damaged' by being flown over, as opposed to just being 'disrupted.' Others felt the effects of noise on certain properties could be addressed via other means, such as compensation and/or mitigation measures.	'Limit effects upon' was added to the Principle following feedback that avoiding all noise sensitive areas may be impractical. The list of potential areas to consider was kept in the Principle as a way to demonstrate what 'noise sensitive areas' may be identified. The commentary has been updated to reflect the questions around noise impacts and compensation/mitigation.	N3 Where practical our route designs should avoid, or limit effects upon, noise sensitive areas. These may include cultural or historic assets, tranquil or rural areas, sites of care or education.

5.2.11. We asked: Draft Design Principle 10

Designs should seek to minimise, and where possible, reduce, the effect of noise from flights upon people.

We heard	We did	Proposed Design Principle
There was widespread support for this Draft Design Principle, with Community, Care and Business stakeholders in particular feeling that noise impacts should be reduced wherever possible. There was an acceptance that noise was inevitable in some areas, but others suggested the word 'should' should be replaced with 'must' or 'will'. While there was support for minimising the effects on people by reducing the number of people being over flown, there were some calls for acknowledgement that those living in rural areas are still impacted by exposure to noise. There were questions about how it was possible to reduce overall noise if there was progress towards there being more flights in total. Participants said more information about noise impacts would need to accompany design proposals to help make informed decisions. Special Interest and Leisure stakeholders in particular said emissions were just as important as noise. Others said this Principle conflicted with others, especially Draft Design Principle 3. The use of 'where possible' was felt by some to be a 'get-out clause.'	Draft Design Principle 10 described the 'effect of noise' rather than the 'number of people affected'. This was changed following the feedback that reducing the number of people affected is the most important point, and that it is difficult to quantify reducing 'effects'. The commentary has been updated to reflect the questions around growth and emissions.	N1 Our route designs should seek to minimise, and where possible reduce, the number of people affected by noise from our flights.

A report summarising the insights gathered during the second phase of engagement can be found at Appendix 12.

5.3
Proposed Design Principle

5.3.1. Following the second phase of engagement, the Draft Design Principles were refined by MAN in response to the insights gathered. The Proposed Design Principles are the result of the comprehensive process of stakeholder engagement outlined in this document.

5.3.2. In addition to the changes outlined in Section 5.2, following comments that the numbering of the original list of Principles implied they were in priority order, MAN chose to group the Principles by theme instead. The letters shown below represent the theme of each Principle.

5.3.3. The letters correspond to:
- S – safety
- P – policy
- C – capacity
- E – emissions
- N(1,2,3) – noise
- A – airspace
- T – technology

5.3.4. Design Principles S – Safety, P – Policy and C – Capacity include the word 'must', indicating that they are mandatory. The remaining Principles do not, and this is to reflect there will be a balance to be achieved between these principles as set out in CAP1616. This is required to allow more design options to be developed in later stages, rather than rule out options at this early stage.

5.3.5. The table following shows our Proposed Design Principles with associated commentary.

Ref	Proposed Design Principle	Commentary
S	Our routes must be safe, and must comply with industry standards and regulations.	Safety and security is paramount in everything we do at our airport and for the aircraft flying into and out of it. This would be expected of us by all airport users, the public and our regulator, the CAA. Safety is designed into all airspace and is a fundamental foundation for all aircraft and air traffic control systems and procedures. All routes that we design will undergo a full safety analysis and this will form the basis of safety approval by the CAA. Only when the routes are shown to be safe will they enter operational service. Where this is referred to as a Design Principle, it is in relation to safety in the sky, not other issues such as the health and wellbeing of people on the ground. These issues are addressed by other Design Principles. Safety in the sky relates to all aircraft, not just commercial aircraft in MAN's Controlled Airspace. This includes, for example, emergency and military aircraft. Once in operation there are multiple ground-based and aircraft-based systems that ensure safety is maintained. This Principle was primarily developed from feedback on Question 10 'meeting requirements' and appeared as a recurring theme throughout other question responses. Focus Groups and questionnaire responses consistently supported this Proposed Design Principle.
P	Any airspace change must accord with the Civil Aviation Authority's Airspace Modernisation Strategy. Any change must also allow connection to the wider UK En-Route network and be aligned with the Future Airspace Strategy Implementation for the North programme and take into consideration the needs of other airports.	Airports are key engines of growth for the regional and national economy providing connectivity, employment, and a hub for local transport schemes. The DfT is in the process of finalising its Aviation Strategy, and the CAA has already published its Airspace Modernisation Strategy (AMS). Both of these documents are clear that airspace modernisation is key to ensuring airports operate effectively and efficiently, bringing the associated economic benefits from international connectivity to a region. In addition, both documents highlight the inefficiencies of the current outdated airspace system and set down a list of objectives that future airspace must deliver. These include: • maintaining and enhancing high aviation safety standards • securing the efficient use of airspace • improving environmental performance by better managing noise through the use of quieter operating procedures • reducing emissions • avoiding flight delays. These objectives are addressed by the inclusion of this Proposed Design Principle. Because airspace works together as a system, our Future Airspace Project cannot be completed in isolation. All airports in the north are therefore working together within the FASI-N programme. This is part of a national programme, with many airports making changes at the same time. In order to coordinate this large-scale change the DFT has created ACOG. This coordination will aim to make sure the new airspace system is the most efficient system for all. The CAA will make decisions on any issues relating to this coordination. This Principle was developed from feedback for Question 10 'meeting requirements'. Focus Groups and questionnaire responses consistently supported this Principle.

Proposed Design Principles

more online:
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/714069/making-best-use-of-existing-runways.pdf

Ref	Proposed Design Principle	Commentary
C	Our future airspace must enable best use of the capacity of our existing runways, in line with government po	The Future Airspace Project needs to deliver an airspace design that will enable MAN to make best use of its available runway capacity in order to meet the forecasted increased demand for air travel across the UK, and realise the associated economic and social benefits for those living and working in MAN's catchment across the north. This Principle aligns with MAN's Statement of Need and government policy to make best use of the capacity of MAN's existing runways. This is set out in its policy adopted by the UK Government in June 2018, which stated that 'government has set out its support of airports beyond Heathrow making best use of their existing runways, subject to related economic and environmental considerations being considered'. MAN is the only airport outside London with two full-length runways, with its second opening in 2001. Since then MAN has gradually started to use the capacity of both runways. Currently volumes stand at around 29m, with MAN's most recent Sustainable Development Plan estimating that using the two runways to their full potential could enable passenger throughputs of up to 55m per year. Therefore, reference to 'making best use' in this Proposed Design Principle refers to ensuring future designs enable MAN to continue to grow to reach these passenger volumes. It is acknowledged this needs to be achieved alongside investment in MAN's terminal facilities, with a £1bn transformation programme underway, and associated surface access improvements. The Principle was developed from feedback on Question 10 'meeting requirements'. Focus Groups and questionnaire responses consistently supported this Principle, provided the growth referred to the impacts of noise and emissions which are addressed in other Proposed Design Principles.
E	We will minimise, and where possible reduce, emissions when we design routes. This may be achieved by selecting the most direct routes.	This Proposed Design Principle was developed from feedback on Question 4 'balancing noise and emissions' and relates to the reduction of CO_2 emissions. It does not directly cover local air quality, although the impact on air quality will be measured as part of our environmental assessment of route options. Focus Group feedback showed a clear preference for flying the most direct routes possible to reduce emissions, whereas questionnaire responses were in favour of option two, highlighting the potential noise impact to communities in this case. As this Principle will be balanced with other Principles relating to noise impacts, we include this Principle to reflect the desire to reduce CO_2 emissions where possible. One way we can achieve this is by making Continuous Climb Operations (CCOs) one of our design requirements for the new routes. CCOs provide a flight profile that eliminates the need for aircraft to level off on departure which leads to reduced fuel burn and CO_2 emissions and can also reduce noise. Similarly, by using Continuous Descent Operations (CDOs) we can apply the same Principles to our arriving flights which will make them quieter and more fuel efficient. The use of these routes on climb and descent is also used by NATS which has confirmed that reducing CO_2 is a common objective in its operations in the upper levels of UK airspace. Given current government policy that gives greater priority to noise over emissions for routes below 7,000 feet, this Design Principle will be balanced by other Design Principles relating to noise.
N1	Our route designs should seek to minimise, and where possible reduce, the number of people affected by noise from our flights.	The feedback to our Question 3 'flying over built-up areas' was balanced, with many people highlighting impacts of flying over both rural and built-up areas. The common theme from both perspectives was the impact of noise upon people, including children, who live under flight paths. For example, it was discussed this can affect sleep, disturb peace and quiet and affect mental and physical health, especially at night. This has driven the inclusion of this Principle. This feedback is supported by the CAA Airspace Modernisation Strategy and government policy which states that noise will be given greater priority than emissions for routes below 7,000 feet. We have created this Design Principle to ensure consideration of the impact of aircraft noise on people on the ground. In practice, this means we will consider local circumstances and, where possible, we will prioritise routing flight paths over areas of low residential density to minimise the number of people affected by noise, and incorporate noise efficient operational practices such as climbing and descending continuously. It was, however, acknowledged that flights over less densely populated areas can create noise-related effects for those who live within them. This will be considered and balanced alongside other Design Principles.

Ref	Proposed Design Principle	Commentary
N2	Where practical, noise effects should be shared. The use of dispersion and/or respite, especially at night, will be considered to achieve this.	This Proposed Design Principle was developed from feedback on Question 2 'concentrating or spreading out flight paths'. Focus Group and questionnaire feedback was in favour of spreading flight paths, noting that the main area of concern was noise impacts. All the Design Principles will be applied consistently. This means that no single community will be treated differently. Focus Group responses to Question 1 'avoid change or fly over new areas' showed a clear preference for flying over new areas to share the burden (balanced by questionnaire responses) they were concerns around the impact of noise on newly affected areas. This is dealt with in this Principle, by looking at dispersion and respite as potential techniques to share the burden of noise impacts. Night was consistently raised as a period of particular importance in relation to noise impacts, and is generally defined as between the hours of 11:30pm and 6:00am (local time). However we will review, with our stakeholders, the possibility of considering periods of respite outside of these times later in the process.
N3	Where practical, our route designs should avoid, or limit effects upon, noise sensitive areas. These may include cultural or historic assets, tranquil or rural areas, sites of care or education.	This Proposed Design Principle was developed from feedback on Question 9 'areas that we should avoid flying over'. Feedback covered various priorities for people including those listed within the Principle. Avoiding overflight of all of these locations in every case would be impractical but we will endeavour to achieve this where possible. This issue will also be captured through our ongoing engagement, including consultation at Stage 3 of the CAP1616 process, where to say when we will find out more about any local characteristics or noise sensitive areas that we should consider. In some cases, there will be a natural tension between this Principle and N1, which seeks to prioritise routing flight paths over areas of low residential density. With this in mind, consideration of whether different types of area could be overflown at different times of the day will be given.

Ref	Proposed Design Principle	Commentary
A	Our route designs should minimise the impacts on other airspace users by limiting Controlled Airspace.	Whilst our airspace change and route designs will prioritise the needs of aircraft flying into and out of MAN, we also recognise the concept of maximising airspace access for other users. For that reason, we are not proposing any changes to either the existing size or access arrangements to the MAN airspace, and this includes access by air ambulance and military flights who are already afforded priority within UK aviation rules. We are also not proposing any changes to the corridor that provides access to Manchester City Airport for general aviation traffic. Equally, if there are portions of airspace (currently used by commercial traffic) that we will no longer use following the completion of our Future Airspace Project, we will consider returning them for GA use. This will be taken on a case by case basis and will be assessed for the safety and implications to other airspace users in the same way that we assure all airspace. This Principle was developed from feedback for Question 6 'other airspace users'. Focus Group feedback from aviation stakeholders requested consideration of other airspace users where possible, hence the inclusion of this Principle.
T	Our route designs should be based on the latest aircraft navigational technology widely available.	As part of the UK Airspace Modernisation Strategy we are required to modernise the routes and procedures in and out of MAN. This will be achieved by eliminating the reliance on technology related to many of the ground-based navigational aids and using the inbuilt technology of modern aircraft. In order to do this effectively we will be engaging with all airlines to understand both the current and future navigational capabilities and technology of the aircraft that they use. This will tell us not only the standard to design to but also help us understand the need to update ground-based technology to support their future operation. With this knowledge we can make sure that we design procedures to standards that can be flown by all types all aircraft flying into and out of MAN. As the capabilities of the aircraft evolve and improve, we will decommission any procedures that are no longer required. The technology used by modern aircraft has a high level of reliability, but in the unlikely event of technology failure, there are multiple fallback systems and cross-checks within the aircraft and within the air traffic control system that will ensure that the safety of the aircraft is maintained at all times. For example, all aircraft using these routes will have on-board monitoring that detects any issues and will automatically switch to other systems to ensure their position. The use of technology and the resilience of systems is also addressed in our Design Principle S that relates to safety, and in the approval of routes by the CAA. This Principle was developed from feedback for Question 7 'aircraft types'. Focus Groups and questionnaire responses consistently supported prioritising new technology, with some suggesting a phased approach to implementation, either in terms of the introduction of new routes or the requirement of certain aircraft to use them, if this is possible in practice.

6 Next Steps

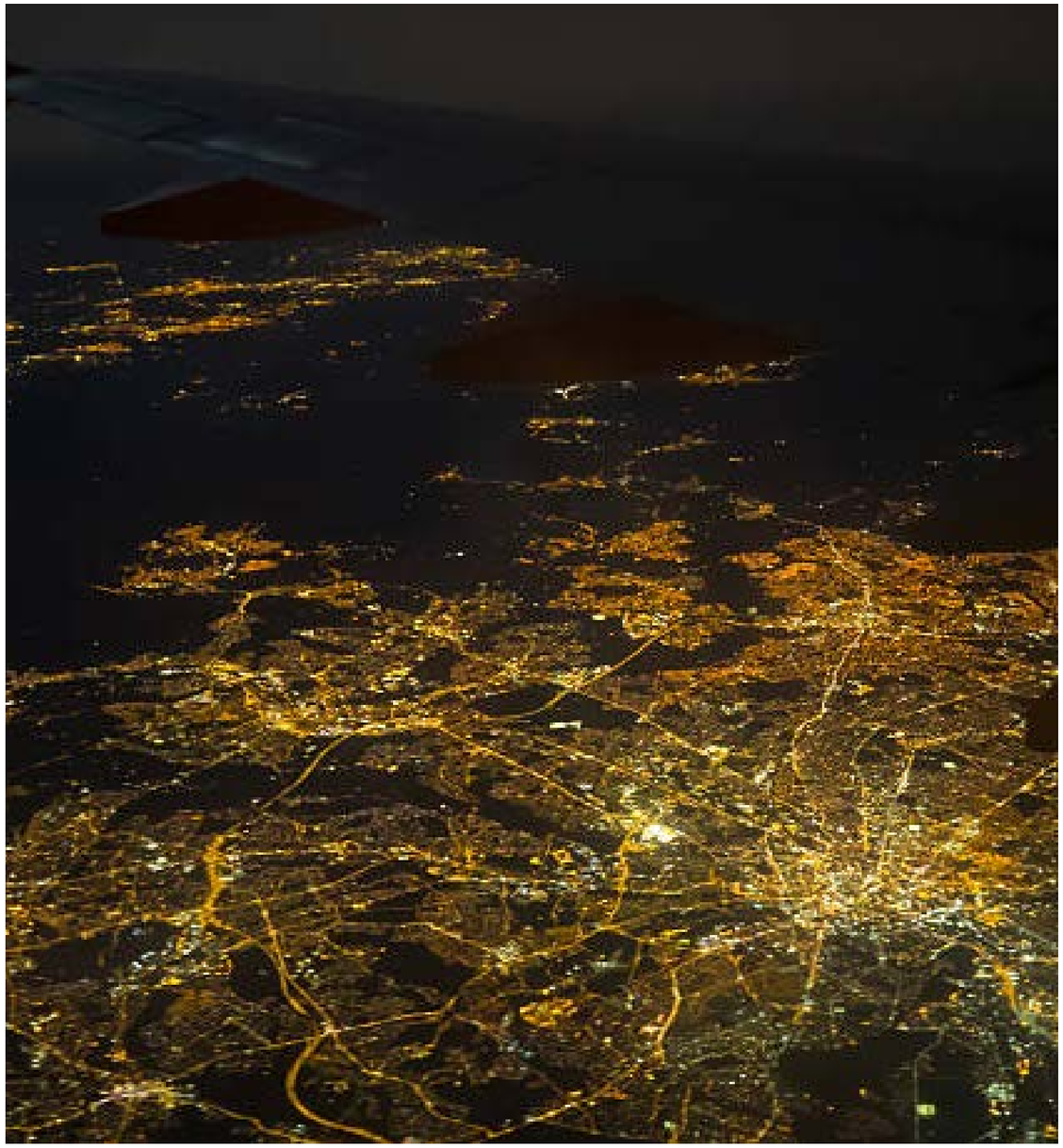
6.1 CAP1616 process and timescales

6.1.1. This document will be submitted to the CAA as evidence to support Step 1B of CAP1616 ahead of the Stage 1 Define gateway. Following successful completion of the Define gateway, MAN will move into Stage 2 'Develop and Assess'.

6.1.2. Stage 2 has two Steps. The first Step is options development. The objective for this Step is for the MAN appointed airspace designers to design a longlist of route options that are compliant with technical criteria set by the CAA and that also address the Statement of Need and align with the Proposed Design Principles proposed in this report.

6.1.3. This longlist will be tested with the same stakeholders that were engaged with during Stage 1, Step 1B, to assess whether they feel the options, at a high-level, meet each of the Principles, before MAN produces a Design Principle evaluation for each of the options.

6.1.4. During Stage 2, Step 2B we will carry out an initial appraisal of the route options, giving a high level assessment of impacts and benefits. This will be submitted to the CAA before being developed into a full appraisal, ahead of a full public consultation in Stage 3 of the process in late 2020.



7 Glossary and Appendices

CAA	Civil Aviation Authority
CAS	Controlled Airspace
CCO	Continuous Climb Operation
CDO	Continuous Descent Operation
CO_2	Carbon Dioxide
DFT	Department for Transport
EHO	Environmental Health Officer
FASI-N	Future Airspace Strategy Implementation for The North, a collaboration of NATS and airports undertaking airspace change as part of a coordinated programme
FLOPSC	Flight Operations Performance and Safety Committee
GA	General Aviation (Sports and Recreation)
GIS	Geographic Information Systems
IFP	Instrument Flight Procedures
MAN	Manchester Airport
NATMAC	National Air Traffic Management Advisory Committee
NATS	UK's Air Traffic Navigation Service Provider, previously known as The National Air Traffic Services
Osprey	MAN's Appointed IFP Designer
SRG	Stakeholder Reference Group
Stakeholders	An interested third party in an airspace change proposal – neither the change sponsor nor the CAA or Department for Transport. Includes directly affected local aviation stakeholders, members of the National Air Traffic Management Advisory Committee, relevant national organisations and communities affected by potential impacts (such as noise or economic growth) associated with the change
tCi	The Consultation Institute
YouGov	Independent Market Research Company

MAG Manchester Airport

Be part of the conversation

manchesterairport.co.uk/futureairspace

The contents of this publication are the sole responsibility of Manchester Airport and do not necessarily reflect the opinion of the European Union.

Co-financed by the Connecting Europe Facility of the European Union