NOISE ACTION PLAN 2019-2023

SUPPLEMENTARY INFORMATION*

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CONTENTS

*Yet to be adopted by the Secretary of State for Environment, Food and Rural Affairs.

GLOSSARY OF TERMS

AIP	The UK Aeronautical Information Publication
ANOMS	Airport Noise Operations Monitoring System, Manchester Airport's specific NTK system (MANTIS)
APF	UK Aviation Policy Framework – Published in 2013 this is the current UK aviation policy
APU	Auxiliary Power Unit. A power unit located on the aircraft to provide power to essential systems whilst on the ground
ATC	Air Traffic Control
ATM	Air Transport Movement
CAA	UK Civil Aviation Authority
CCD/CCO	Continuous Climb Departure/Continuous Climb Operation – The same technique to climb aircraft continuously to reduce noise
CDA	Continuous Descent Approach
dB(A)	A unit of sound pressure level, adjusted in accordance with the A weighting scale, which considers the increased sensitivity of the human ear at some frequencies
Decibel (dB)	The decibel (dB) is a logarithmic unit of measurement that expresses the magnitude of a physical quantity relative to a specified or implied reference level. Its logarithmic nature allows very large or very small ratios to be represented by a convenient number. Being a ratio, it is a dimensionless unit. Decibels are used for a wide variety of measurements including acoustics, and for audible sound A-weighted decibels (dBA) are commonly used
DEFRA	Department for Environment Food and Rural Affairs (UK Government)
DfT	Department for Transport (UK Government)
ECAC	European Civil Aviation Conference
END	EU Environment Noise Directive
EPNdB	Effective Perceived Noise measured in Decibels. Its measurement involves analyses of the frequency spectra of noise events as well as the maximum level
EU	European Union

GANP	ICAO Global Air Navigation Plan
GPU	Ground Power Unit
GVA	Gross value added is the measure of the value of goods and services produced in an area, industry or sector of an economy
ICAO	International Civil Aviation Organization
ICCAN	Independent Commission on Civil Aviation Noise
ILS	Instrument Landing System
$L_{Aeq\ 16\text{-}hour}$	The A-weighted average sound level over the 16-hour period of 07:00 to 23:00
L_{day}	The A-weighted average sound level over the 12-hour day period of 07:00 to 19:00
L_{den}	The day, evening, night level, L_{den} is a logarithmic composite of the L_{day}, $L_{evening}$, and L_{night} levels but with 5dB(A) being added to the $L_{evening}$ value and 10dB(A) being added to the L_{night} value
L_{eq}	Equivalent sound level of aircraft noise in dB(A), often called equivalent continuous sound level.
$L_{evening}$	The A-weighted average sound level over the 4-hour evening period of 19:00 to 23:00
L_{max}	Maximum A-weighted sound level
L_{night}	The A-weighted average sound level over the 8-hour night period of 23:00 to 07:00
LOAEL	Lowest observed adverse effect level (in this plan this relates to aircraft noise). This is the level above which adverse effects on health and quality of life can be detected
MACC	Manchester Airport Consultative Committee – the formal liaison body between Manchester Airport and our neighbouring communities
NAP	Noise Action Plan

NATS	NATS Formerly known as National Air Traffic Services Ltd. NATS is licensed to provide en-route air traffic control for the UK and the Eastern part of the North Atlantic, and provides air traffic control services at several major UK airports, including Manchester Airport.
Noise Contour	Map contour line indicating noise exposure in dB for the area that it encloses.
NPSE	Noise Policy Statement England
NTK	Noise and Track Keeping monitoring system. The NTK system associates radar data from air traffic control radar with related data from both fixed (permanent) and mobile noise monitors at prescribed positions on the ground.
PBN	Performance based navigation – A technique using satellite navigation information to improve the accuracy of aircraft flight paths
PNR Preferential Noise Route	Preferential Noise Route
QC	Quota Count – In 1993 a new Quota Count system was introduced based on aircraft noise certification data. Each aircraft type is classified and awarded a quota count (QC) value depending on the amount of noise it generated under controlled certification conditions. The quieter the aircraft the smaller the QC value.
RNAV/PRNAV	Area Navigation/Precision Area Navigation using GPS coordinates
SDP	Manchester Airport Sustainable Development Plan
SID	Standard Instrument Departure route
SIG(S)	Sound Insulation Grant (Scheme)
SOAEL	The Significant Observed Adverse Effect Level. This is the level above which significant adverse effects on health and quality of life occur.
SoS	UK Secretary of State
Sustainable Aviation	A UK aviation industry initiative aiming to set out a long-term strategy for the industry to address its sustainability issues.
TAG	The Technical Advisory Group sub-committee of the Manchester Airport Consultative Committee

APPENDIX A

DETAILS OF PREVIOUS NOISE ACTION PLAN CONSULTATIONS

FIRST ROUND CONSULTATION

We ran a public consultation programme from 1 July until 21 October 2009. We sent printed copies of the draft action plan to over 400 people and organisations (see appendix 1) and had copies in 194 libraries (see appendix 2). We explained that our long-term objective is to limit and reduce, where possible, the number of people affected by noise as a result of the airport's activities. We asked people to tell us whether they think the measures we currently take to manage noise are appropriate, and to tell us whether they think that:

- we should be taking further action to control the effect of noise in areas affected by high levels of noise (69 decibels or more);
- we should be taking further action to control noise from aircraft taking off or landing at the airport; and
- the Noise Action Plan provides a suitable framework for managing aircraft noise.

We also asked people to tell us why they think further action is needed and what further action they would like us to consider, and to give us any other comments or suggestions they had on the draft Noise Action Plan.

Throughout the consultation period the consultation process featured on the home page of our website, and the draft Noise Action Plan could be downloaded from the website. Also, the plan featured in the local press. Articles and letters were published in the following newspapers.

- Manchester Evening News (16 July 2009)
- Knutsford Guardian (22 July 2009)
- Biddulph Chronicle (23 July 2009)
- Congleton Chronicle (23 July 2009)
- Sandbach Chronicle (23 July 2009)
- Stockport Times East (23 July 2009)
- Stockport Times West (24 July 2009)
- Stockport Express (9 September 2009)
- Stockport Times East (10 September 2009)
- Stockport Express (30 September 2009)

We also sent 740 posters and 8500 leaflets to private companies, as well as to voluntary, community and faith organisations, to promote the consultation process.

We also advertised the consultation in our e-News and our Wythenshawe e-News publications. When we were preparing the draft plan we were aware that discussions about measuring and managing noise can involve technical issues and we tried to avoid using technical terms and jargon.

During the consultation process we were asked to consider also producing a version that could gain Plain English Campaign's Crystal Mark to recognise that the document was as clear as possible given the technical nature of the document. The content of both versions was the same but the language used was different. The plain English version was published on our website. Throughout the consultation period, printed copies and copies on CD were available to anyone who asked for them.

We knew that some people would prefer to discuss the document with us in person, and we originally organised six events where members of the Environment and Community Relations teams could answer any questions that people had about the draft plan. The events were held in Bredbury, Bowdon, Knutsford, Heald Green, Mere, Wythenshawe and Edgeley.

In total, 268 people visited the events.

We also held events to brief the parish councils from Cheshire, Warrington and Trafford and we held a meeting with local councillors from Wythenshawe. As well as this, we offered to brief councillors on the draft plan. Our Environment and Community Relations teams were available throughout the consultation period and could be contacted either by email, phone (directly or on a freephone number) or by letter. People could respond to the consultation document by these methods or through a form on our website.

SECOND ROUND CONSULTATION

As recommended by the Government, we presented our revised Noise Action Plan to our Airport Consultative Committee. We also discussed our proposed changes with Environmental Health Officers' Consultative group.

APPENDIX B

CONSULTATION QUESTIONNAIRE

Please see the Draft Noise Action Plan Consultation 2018 questionnaire online.

If you have any further queries about this questionnaire or consultation please contacts us:
Email: **nap@manairport.co.uk**

To return the questionnaire please use one of the following:
Email: **nap@manairport.co.uk**

Post:
Environment Department
Floor 5
Olympic House
Manchester Airport
M90 1QX

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DRAFT NOISE ACTION PLAN CONSULTATION 2018 QUESTIONNAIRE

We would appreciate it if you could take a few minutes to complete this questionnaire, giving us your views on our Draft Noise Action Plan

Name

Organisation (if applicable):

Address:

Postcode: Email:

Telephone:

1. Are there further actions we should be taking to control the noise impact for those living in the highest noise contours? In which area(s) do we need to take any further action?

a. Departing aircraft	Yes ☐	No ☐	Unsure ☐
b. Arriving aircraft	Yes ☐	No ☐	Unsure ☐
c. Night Noise	Yes ☐	No ☐	Unsure ☐
d. Mitigation schemes	Yes ☐	No ☐	Unsure ☐
e. Monitoring and reporting	Yes ☐	No ☐	Unsure ☐
f. Communication	Yes ☐	No ☐	Unsure ☐

FOR ALL AREAS WHERE YOU THINK FURTHER ACTION IS REQUIRED
Why do you think further action is required in this particular area?

What further action would you like us to consider?

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2. Generally, are there any further actions we should be taking to control the noise impact from departing/arriving aircraft? In which area(s) do we need to take any further action?

a. Departing aircraft	Yes ☐	No ☐	Unsure ☐
b. Arriving aircraft	Yes ☐	No ☐	Unsure ☐
c. Night Noise	Yes ☐	No ☐	Unsure ☐
d. Mitigation schemes	Yes ☐	No ☐	Unsure ☐
e. Monitoring and reporting	Yes ☐	No ☐	Unsure ☐
f. Communication	Yes ☐	No ☐	Unsure ☐

FOR ALL AREAS WHERE YOU THINK FURTHER ACTION IS REQUIRED
Why do you think further action is required in this particular area?

What further action would you like us to consider?

3. To what extent do you agree that this Draft Noise Action Plan provides a suitable framework for the ongoing management of aircraft noise?

Agree strongly ☐ Agree ☐ Neither agree nor disagree ☐ Do not agree at all ☐

Why is that?

4. Do you have any other comments or suggestions on this Draft Noise Action Plan? Please give details

☐ Please tick this box, If you do not wish to be Identified in our schedule of responses.
☐ Please tick this box, If you would like us to acknowledge receipt of your responses.

Thank you for taking part in the Manchester Airport Draft Noise Action Plan consultation

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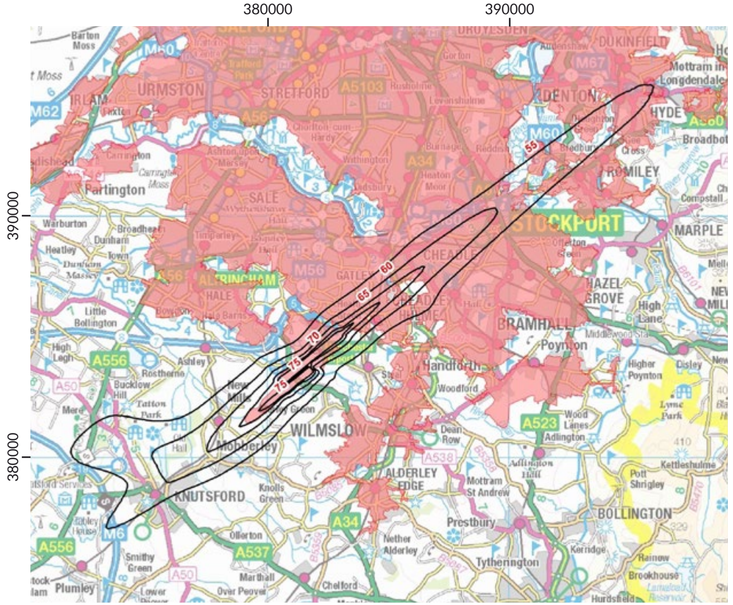
APPENDIX C

ENVIRONMENT NOISE REGULATIONS
DEFRA NOISE MAPS 2016

WEIGHTED 24-HOUR CONTOUR (L_{den})



Department for Environment Food & Rural Affairs

The Environmental Noise (England) Regulations 2006 (as amended)

Manchester Airport (EGCC)

L_{den}

Year – 2016

– 60 – Noise level Contour (dB)

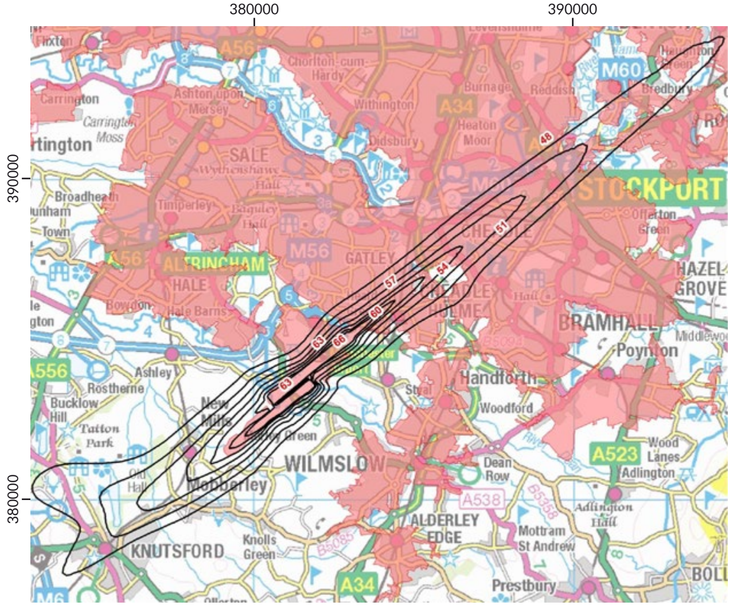
Agglomeration

0 1.25 2.5 5
Km

WEIGHTED 24-HOUR CONTOUR (L_{den})

NOISE LEVEL (DB)	2006 DATA			2011 DATA			2016 DATA			CHANGES FROM PREVIOUS YEARS	
	24-hour L_{den}										
	Area of Contour (km²)	Number of Homes	Number of People	Area of Contour (km²)	Number of Homes	Number of People	Area of Contour (km²)	Number of Homes	Number of People	Number of people in 2016 vs 2011	Number of people in 2016 vs 2006
55 or more	68.2	42500	94000	57.5	33800	73400	64.1	46250	102300	28900	8300
60 or more	27.7	13550	31000	21.3	8050	18900	24.2	13100	30000	11100	-1000
65 or more	11.2	1850	4500	8.2	900	2100	9.4	1650	3900	1800	-600
70 or more	4.6	350	800	3.2	Fewer than 50	Fewer than 100	3.9	150	300	0	-500
75 or more	2.1	Fewer than 50	Fewer than 100	1.5	0	0	1.6	Fewer than 50	Fewer than 100	0	0

NIGHT TIME CONTOUR (L_{night})



Department for Environment Food & Rural Affairs

The Environmental Noise (England) Regulations 2006 (as amended)

Manchester Airport (EGCC)

L_{night}

Year – 2016

– 60 – Noise level Contour (dB)

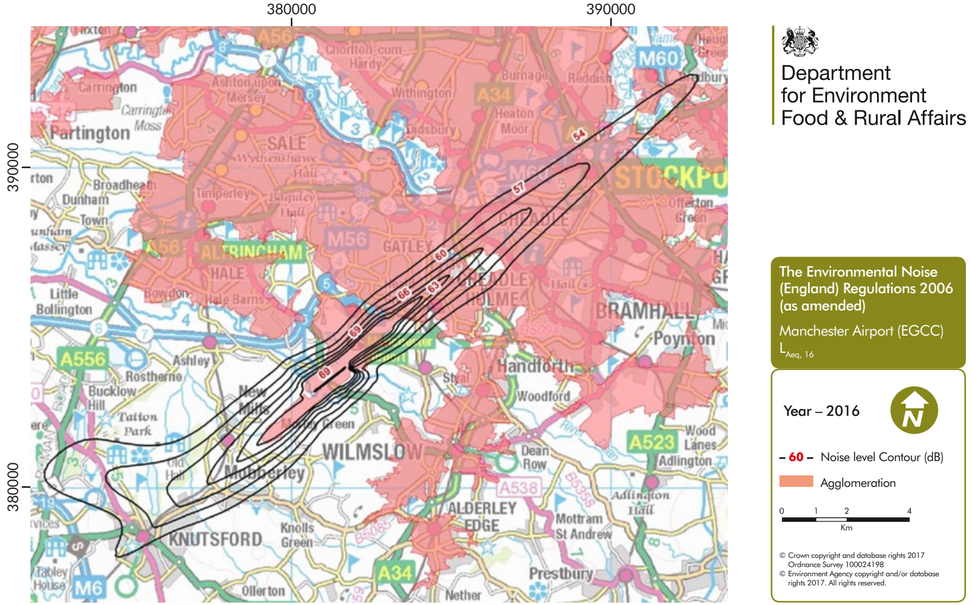
Agglomeration

0 1 2 4
Km

NIGHT TIME CONTOUR (L_{night})

NOISE LEVEL (DB)	2006 DATA			2011 DATA			2016 DATA			CHANGES FROM PREVIOUS YEARS	
	Night time (23:00 to 07:00) L_{night}										
	Area of Contour (km²)	Number of Homes	Number of People	Area of Contour (km²)	Number of Homes	Number of People	Area of Contour (km²)	Number of Homes	Number of People	Number of people in 2016 vs 2011	Number of people in 2016 vs 2006
48 or more	47.2	29700	65100	39.5	22100	48500	49.0	34200	74700	26200	9600
51 or more	27.2	14700	33500	20.9	9250	21300	27.0	15450	34800	13500	1300
54 or more	16	7200	17100	11.7	1950	4800	15.7	5950	14400	9600	-2700
57 or more	9.1	1500	3600	6.8	650	1500	8.7	1600	3700	2200	100
60 or more	5.3	650	1500	4	50	100	5.1	550	1300	1200	-200
63 or more	3.1	100	200	2.3	Fewer than 50	Fewer than 100	2.9	50	100		-100
66 or more	1.9	Fewer than 50	Fewer than 100	1.5	0	0	1.7	Fewer than 50	Fewer than 100	0	0

16-HOUR DAY CONTOUR (L_{Aeq})



Department for Environment Food & Rural Affairs

The Environmental Noise (England) Regulations 2006 (as amended)

Manchester Airport (EGCC)

$L_{Aeq,16}$

Year – 2016

– 60 – Noise level Contour (dB)

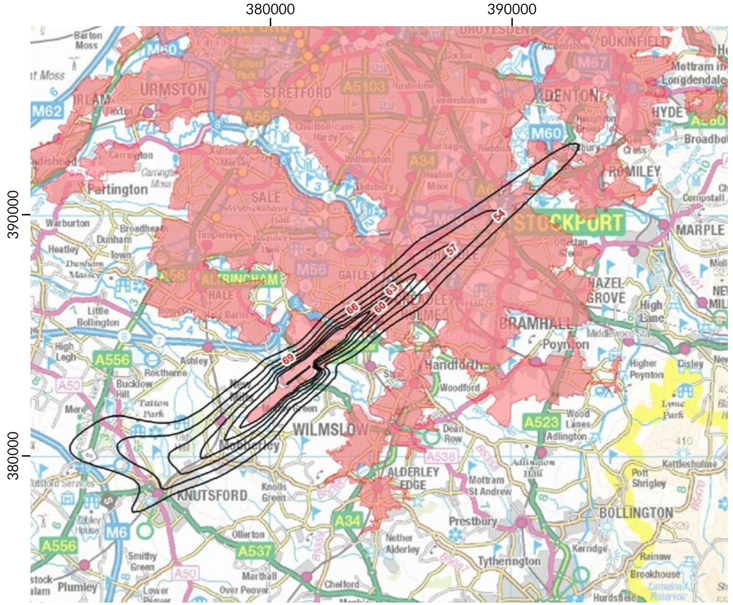
Agglomeration

0 1 2 4 Km

16-HOUR DAY CONTOUR (L_{Aeq})

NOISE LEVEL (DB)	2006 DATA			2011 DATA			2016 DATA			CHANGES FROM PREVIOUS YEARS	
	16-hour day (07:00 to 23:00) L_{Aeq}										
	Area of Contour (km²)	Number of Homes	Number of People	Area of Contour (km²)	Number of Homes	Number of People	Area of Contour (km²)	Number of Homes	Number of People	Number of people in 2016 vs 2011	Number of people in 2016 vs 2006
54 or more	57.5	30700	67500	46.6	22250	48900	47.5	28550	62800	13900	-4700
57 or more	33.7	15550	35200	26.3	10700	24600	27.2	13700	31400	6800	-3800
60 or more	19.8	5650	13600	14.4	2600	6200	15.5	4050	9900	3700	-3700
63 or more	11.6	1600	3800	8.2	850	2000	8.9	1250	2900	900	-900
66 or more	6.9	650	1500	4.8	150	400	5.3	350	800	400	-700
69 or more	4.1	50	100	2.8	Fewer than 50	Fewer than 100	3.1	Fewer than 50	Fewer than 100	13900	0

DAYTIME (07:00 TO 19:00) CONTOUR (L_{day})



Department for Environment Food & Rural Affairs

The Environmental Noise (England) Regulations 2006 (as amended)

Manchester Airport (EGCC)

L_{day}

Year – 2016

– 60 – Noise level Contour (dB)

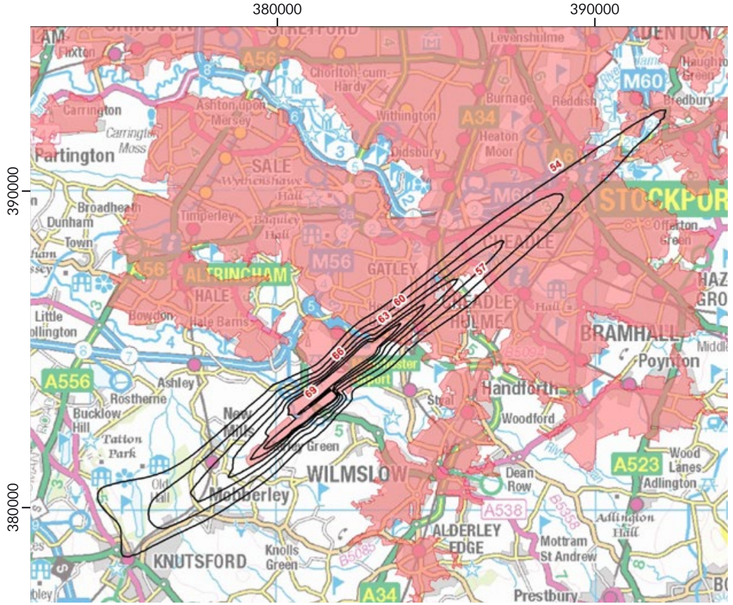
Agglomeration

0 1.25 2.5 5 Km

DAYTIME (07:00 TO 19:00) CONTOUR (L_{day})

NOISE LEVEL (DB)	2006 DATA			2011 DATA			2016 DATA			CHANGES FROM PREVIOUS YEARS	
	Daytime (07:00 to 19:00) L_{day}										
	Area of Contour (km²)	Number of Homes	Number of People	Area of Contour (km²)	Number of Homes	Number of People	Area of Contour (km²)	Number of Homes	Number of People	Number of people in 2016 vs 2011	Number of people in 2016 vs 2006
54 or more	61.9	32700	71900	50.7	24000	52500	51.5	30350	66800	14300	-5100
57 or more	36.4	16450	37200	28.6	11600	26500	29.6	14800	33900	7400	-3300
60 or more	21.4	6400	15400	15.7	2950	7100	16.9	4700	11400	4300	-4000
63 or more	12.7	1750	4200	8.9	950	2300	9.8	1450	3300	1000	-900
66 or more	7.5	700	1600	5.2	200	500	5.8	450	1000	500	-600
69 or more	4.5	100	200	3	Fewer than 50	Fewer than 100	3.4	Fewer than 50	Fewer than 100	0	-100

EVENING TIME CONTOUR ($L_{evening}$)



Department for Environment Food & Rural Affairs

The Environmental Noise (England) Regulations 2006 (as amended)

Manchester Airport (EGCC)

$L_{evening}$

Year – 2016

– 60 – Noise level Contour (dB)

Agglomeration

0 1 2 4 Km

EVENING TIME CONTOUR ($L_{evening}$)

NOISE LEVEL (DB)	2006 DATA			2011 DATA			2016 DATA			CHANGES FROM PREVIOUS YEARS	
	Evening (19:00 to 23:00) $L_{evening}$										
	Area of Contour (km²)	Number of Homes	Number of People	Area of Contour (km²)	Number of Homes	Number of People	Area of Contour (km²)	Number of Homes	Number of People	Number of people in 2016 vs 2011	Number of people in 2016 vs 2006
54 or more	43.1	24700	54400	33.7	17000	37700	34.2	21200	47000	9300	-7400
57 or more	24.7	12450	28400	18.8	6500	15400	19.2	10050	23600	8200	-4800
60 or more	14.1	3650	8900	10.5	1600	3800	10.5	2350	5600	1800	-3300
63 or more	8.1	1050	2600	6	500	1200	6	750	1800	600	-800
66 or more	4.7	400	900	3.4	50	100	3.5	150	300	200	-600
69 or more	2.9	Fewer than 50	Fewer than 100	2	Fewer than 50	Fewer than 100	2	Fewer than 50	Fewer than 100	0	0

APPENDIX D

PERFORMANCE AGAINST 2013-2018 NOISE ACTION PLAN

The table below details the airport performance against the 2013-2018 Noise Action Plan. Performance is rated green for complete, amber for some progress made and red for limited or no progress made.

PERFORMANCE RATING KEY

- Target has been met
- Progress made but target not fully met
- Limited progress made

ARRIVING AIRCRAFT

CONTROL	PROGRESS	PERFORMANCE RATING
Low power/low drag Aircraft approaching the airport are expected to keep noise disturbance to a minimum by using a low power/low drag procedure.	The airport publishes this procedure through the UK AIP, detailed procedures for inbound aircraft at Manchester Airport and continues to work with operators to encourage its use. New work is currently underway through our involvement with Sustainable Aviation, to explore opportunities to minimise noise on arrival called 'Low Noise Arrivals'. The work, expected to be completed by early 2019, includes looking at the final approach when landing gear and flaps are deployed by pilots. A further review of this control is proposed for 2019, when the Sustainable Aviation 'Low Noise Arrivals' work is complete.	
Continuous descent approach All aircraft approaching the airport between 22:00 and 06:00, are expected to use continuous descent procedures. In line with commitments made in the Sustainable Aviation Noise Road Map, we will work with our service partners to improve CDA at Manchester.	The UK AIP currently requires aircraft, approaching Manchester Airport, to use continuous descent approach procedures between 22:00 and 06:00. In 2011/12, CDA performance between 22:00 and 06:00 was 73%. By 2016/17, CDA performance during this 8-hour period had reached 89%. We propose to extend the requirement for continuous descent approach procedures to be used to 24-hour. Our new target will be to achieve better than 90% 24-hour CDA use during the lifetime of this Noise Action Plan. In 2017/18, this was 83%.	
ILS approach Aircraft using the instrument landing system must not descend below 2000 feet before joining the glide path.	This is a published requirement in the UK AIP. We will maintain this commitment throughout the duration of this Noise Action Plan. We also propose to introduce periodic exception reporting, to monitor and if necessary improve compliance.	
Visual approaches	This is a published requirement in the UK AIP. Propeller aircraft whose maximum take-off weight is greater than 5,700kg, must not join the final approach at a distance of less than three nautical miles from the landing point or at a height of less than 1000 feet.	
Reverse-thrust braking To keep noise disturbance to a minimum in areas next to the airport, pilots should avoid using reverse thrust after landing.	This is a published requirement in the UK AIP. We will maintain this commitment throughout the duration of this Noise Action Plan.	

ON THE GROUND

CONTROL	PROGRESS	PERFORMANCE RATING
Reduced-engine taxiing By 2014 we will develop a framework for more consistent use of reduced-engine taxiing.	The development of a Manchester specific framework, has proven impractical due to the wide range of local circumstances and operating requirements that exist. These include the layout of our taxiways and runways, short taxi-times and engine manufacturers requirement for pilots to run all an aircraft's engines for a minimum time, before take-off and after landing. As a result of these and other variables contributing to possible take-up at Manchester, our commitment to develop a reduced-engine taxiing "framework" has been modified.	
APU use By 2015 we will introduce restrictions on the non-essential use of auxiliary power units.	This commitment has been updated to include the introduction of a requirement to use Fixed Electrical Ground Power, wherever it is available.	
Engine testing at night The number of engine tests carried out at night will be limited to 20 in any year.	Engine testing is not allowed outside the engine test bay between 22:00 and 06:00 on weekdays, and between 22:00 and 07:30 on Saturdays and Sundays. In 2017 there were just four engine tests at night.	

DEPARTING AIRCRAFT

CONTROL	PROGRESS	PERFORMANCE RATING
'Off-track' departures We have an annual limit of no more than 5% off-track departures.	Track keeping remains consistently better than target. In 2016/17 4% of departures flew 'off-track'. However, recent performance has shown a slight downward trend, from previous years. We will work with our stakeholder groups to identify the causes of this worsening performance and reverse the trend.	
'Off-track' surcharge We have a system of financial penalties for flights where airlines persistently fail to keep on the PNRs. We introduced those penalties after the Civil Aviation Act 2006 was published.	The details of our 'off-track' surcharge are set out in the Manchester Airport Schedule of Charges and Terms & Conditions of Use – 1 April 2018 to 31 March 2019. We are pleased to be able to report that, to date, we have not had to charge any penalties. If we do have to charge any penalties in the future, we will donate the proceeds to the Manchester Airport Community Trust Fund.	

DEPARTING AIRCRAFT continued

CONTROL	PROGRESS	PERFORMANCE RATING
Non-standard departures We have an annual limit of no more than 5% non-standard departures	In 2016/17 there were less than 1% non-standard departures.	
Preferred runway direction Where conditions allow, we prefer aircraft to take-off in a westerly direction.	This is a published requirement in the UK AIP. We will maintain this commitment throughout the duration of this Noise Action Plan. In 2016/17 75% aircraft took off in a westerly direction.	
Using only one runway The airport will do its best to keep the use of both runways at the same time to a minimum.	Each year we review opportunities to use just Runway 1, within operational and safety requirements. Following the most recent review, by July 2018, runway 2 will be closed between 21:00 and 06:00, Monday to Friday. At weekends, as well as closing runway 2 at night, we will also close it between 16:00 and 22:00 on Saturday and between 09:30 and 13:00 and 21:00 to 22:00 on Sunday.	
Departure noise surcharge The penalty for going over the daytime maximum noise level of 90dB(A) is currently £750 plus £150 for each decibel above that level.	In 2017 there was just one daytime noise infringement. A review of the daytime departure noise surcharge will be completed within 12 months of the new Noise Action Plan being adopted.	
24-hour noisiest 10% The average level of noise of the 10% noisiest departures will remain lower than that in 2001.	The average level of noise of the 10% noisiest departures has remained lower than the 2001 baseline – 84.6dB(A), throughout our Noise Action Plan. In 2016, the level was 81.7dB(A).	
Daytime noisiest 100 The average level of noise for the 100 noisiest departures between 07:00 and 123:00 will remain lower than that in 2001.	The average level of noise of the 100 noisiest departures between 07:00 and 23:00, has remained lower than the 2001 baseline – 92.9dB(A), throughout our Noise Action Plan. In Summer 2016, the level was 86.7dB(A), in Winter 85.2dB(A).	
Noise related runway charge Guided by the CAA's report, we will consider introducing noise-related charges.	We will continue to develop our charging systems so that they respond to changes in the mix of aircraft operating at the airport and continue to encourage the operation of quieter types of aircraft. We will review our noise related runway charge during the course of our new Noise Action Plan.	
Continuous climb operation	The airport is achieving good levels of continuous climb performance by departing aircraft. Performance is now monitored by our noise monitoring system and a new report has been produced. Early results show that over 90% of aircraft achieve a continuous climb operation (CCO). We will continue to monitor and report our performance and explore opportunities that broader airspace modernisation may provide to improve it further.	

NIGHT NOISE

CONTROL	PROGRESS	PERFORMANCE RATING
Night noise policy We will review our night noise policy every five years to make sure it continues to be relevant. The next review will take place in 2016.	We last consulted on night noise whilst drafting our 2012, night noise policy. In agreement with our Consultative Committee we subsequently extended the five-year policy by one year, to end in summer 2018. This allowed subsequent review cycles to be aligned with those of this and future Noise Action Plans. A revised five-year night noise policy will commence Winter 2018. The new policy will be consolidated within the revised Noise Action Plan.	
Night-time noise contour area The area of the night-time 60dB L_{Aeq} noise contour will remain smaller than that in 2001.	Over the lifetime of our Noise Action Plan, the size of the night-time 60dB L_{Aeq} noise contour has remained consistently smaller than that in 2001 (7.8 square kilometres). By 2016 the area within the contour was 6.8 square kilometres.	
Night period noisiest 100 The average level of noise for the 100 noisiest departures between 23:00 and 07:00 will remain lower than that in 2001.	In Summer 2001, the average level of noise of the noisiest 100 departures was 84.6dB(A). The average noise level in Winter was 85.8dB(A). In Summer and Winter 2016 the levels were 81.7dB(A) and 80.8dB(A), respectively.	
Night-time noisiest 100 The average level of noise of the noisiest 100 departures between 23.30 and 06:00 will remain lower than that in 2001.	In Summer 2016 the average level of noise of the noisiest 100 departures was 79.9dB(A). This compares with the 2001 limit 86.2dB(A).	
Night noise surcharge The noise level at which we apply a surcharge will continue to be lower during the night period (23:00 to 07:00).	As part of the most recent review of our night noise policy we introduced the concept of 'core' night period (23:30 to 06:00) and 'shoulder' night period (23:00 to 23:30 and 06:00 to 07:00). The maximum permitted noise levels for both core night and shoulder night periods are significantly lower than those in place during the daytime. The penalty for going over the core night period's noise level of 81dB(A) is £750 plus £150 for each decibel above that level. The penalty for going over the shoulder night-period's noise level of 82dB(A) is £750 plus £150 for each decibel above that level.	
Seasonal QC point noise budget	Our seasonal QC point noise budgets are 7,000 points in the Summer and 3,000 points in the Winter. Although usage is increasing, during Summer and Winter 2016/2017, actual QC points flown was 4454 points and 1582 points, respectively.	

NIGHT NOISE continued

CONTROL	PROGRESS	PERFORMANCE RATING
Ban on QC16 and QC8	This is a published requirement in the UK AIP. Our current night noise policy does not permit the operation of QC8 or QC16 aircraft up to the end of the 2018 summer season. Our revised five-year night noise policy will maintain this commitment.	
Ban on scheduling the take-off of aircraft with a quota count of QC4	This is a published requirement in the UK AIP. Our current night noise policy states that between 23:30 and 06:00 QC4 aircraft will not be scheduled to depart.	
Seasonal limit on night flights	Our seasonal movement limits are 10150 in the Summer and 3895 in the Winter. In 2017/2018 the actual number of flights flown between 23:30 and 06:00 was 8630 in the Summer and 1582 in the Winter	
Night flight limit No more than 7% of total flights can be scheduled to take off or land between 23:30 and 06:00.	In 2016/17, 5.4% flights where scheduled to operate between 23:30 and 06:00. We will maintain this commitment throughout the duration of this Noise Action Plan.	
Visual approaches at night	This is a published requirement in the UK AIP. Between the hours of 23:00 and 07:00, visual approaches will not be permitted. Aircraft shall be positioned, by radar, to join the final approach at a distance of not less than 7 nm from touchdown.	
Non-standard departures at night	This is a published requirement in the UK AIP. Non-standard departures will not normally be issued between 23:00 and 07:00.	
Night-time contour area	We will report annually the area of the 60dB L_{Aeq}, 57dB L_{Aeq} and 48dB L_{Aeq}. 2016 Area (km²) / Population / 2006 Area (km²) / Population 60dB L_{Aeq}: 6.8 / 2,400 / 7.0 / 2,350 57dB L_{Aeq}: 12.1 / 9,000 / 12.1 / 7,450 48dB L_{Aeq}: 70.2 / 117,800 / 63.6 / 96,000	

MITIGATION AND COMPENSATION SCHEMES

CONTROL	PROGRESS	PERFORMANCE RATING
Sound insulation grant scheme We will continue to run a scheme that helps people with the cost of insulating their homes against the effects of aircraft noise.	Our SIGS scheme was last reviewed in 2017, introducing the option for householders to select their own supplier. We will continue to review the scheme every 5 years, to make sure that it remains appropriate and relevant. The next review will take place in 2022.	
Noise sensitive buildings We will consider offering sound insulation to noise-sensitive buildings within the 63 L_{Aeq} noise contour.	Several grants have already been made, including those to St Ann's Hospice, Knutsford Methodist Church (community rooms), Knutsford Sure Start Centre, and Prospect Vale School.	
Home relocation assistance scheme We will continue to help homeowners in the noisiest areas to move to a quieter area.	Since the scheme was introduced, of the 189 eligible properties, we have helped 12 home owners with re-location, at a total cost of £58,000.	
Property purchase We will continue to consider offering to buy properties suffering from the highest noise levels and a large increase in noise.	There are currently no properties eligible for the purchase scheme.	
Vortex damage repair scheme We will continue to provide a vortex-damage repair scheme to repair roofs that have been damaged by vortexes caused by aircraft.	The Building Research Establishment have identified that there are just under 1,700 properties at an elevated risk of receiving vortex damage. Since the 1990s we have been providing a roof covering, with a greater resistance to aircraft vortices, to those properties that have been damaged. Nearly 600 properties have now been re-roofed. As a result of this proactive approach far fewer properties now suffer from damage from aircraft vortices.	
Community trust fund We will continue to donate all the money we raise as a result of our environmental penalties to the Manchester Airport Community Trust Fund.	Money raised as a result of our environmental penalties continues to be donated to the Community Trust Fund. In addition, the airport donates £100,000 to the fund each year. The donations we have made so far amount to approximately £2.8 million.	

MONITORING AND REPORTING

CONTROL	PROGRESS	PERFORMANCE RATING
Guaranteed access We will continue to give the Manchester Airport Consultative Committee and Environmental Health Officers Consultative Group access to our monitoring systems.	This commitment has been maintained throughout our Noise Action Plan.	
Develop our monitoring system We will make sure that our monitoring systems are suitable, relevant and effective.	In our last Noise Action Plan, we said that we would upgrade MANTIS, our monitoring system, to allow us to be more effective in sharing noise-related information. We also committed to installing three new permanent noise monitors at locations agreed with the Consultative Committee and the Environmental Health Officers Consultative Group. MANTIS was upgraded and expanded in 2014, with three new noise monitors in Bowdon, Heald Green and Wythenshawe being added. Aircraft noise and track information is now available on line through our 'Webtrak' facility. 'Webtrak' also allows people to identify the cause of and register noise complaints.	
Daytime noise contours Each year we will report on the area and population contained within our daytime 60 L_{Aeq} aircraft noise contour. The area of the daytime 60 L_{Aeq} noise contour will remain smaller than that in 2001.	In 2001, the area of the daytime 60dB L_{Aeq} noise contour was 25.6 square kilometres. There were 25,050 people living within the contour. By 2016, the area had reduced to 18.2 square kilometres and the population to 12,600. In the same year, the area covered by the 57dB L_{Aeq} contour was 32 square kilometres, with a population of 34,100.	
Night-time noise contours Each year we will report on the area and population contained within our night-time 60 L_{Aeq} aircraft noise contour. The area of the night-time 60dB L_{Aeq} noise contour will remain smaller than that in 2001	In 2001, the area of the night-time 60dB L_{Aeq} noise contour was 7.8 square kilometres. There was a population of 3,250 within the contour. In 2016 the area was 6.8 square kilometres and the population 2,400. In the same year, the area covered by the 57 L_{Aeq} contour was 12.1 square kilometres, with a population of 9,000.	

MONITORING AND REPORTING

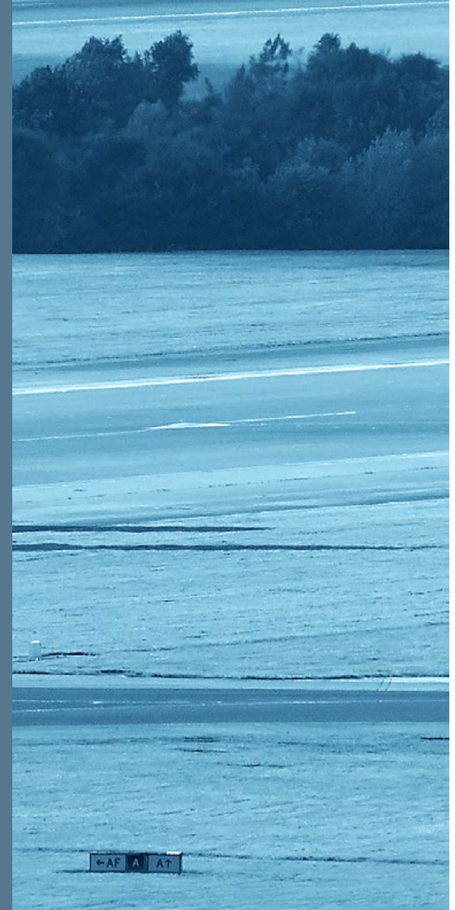
CONTROL	PROGRESS	PERFORMANCE RATING
Extra metrics We will start to publish extra noise indicators including 'number above' contours and 'flight-path' maps	We have produced departure route information packs which explain how we operate and provide information about the number of aircraft currently flying from Manchester Airport and the routes that they fly. These are available here: **www.manchesterairport.co.uk/community/living-near-the-airport/runway-data-sheet/**	
Noise complaints We will continue to regularly report on the complaints we receive and how effectively we respond to them.	We regularly report details of the complaints that we receive and how well we have performed in responding to them, both to our Consultative Committee and to our Environmental Health Officers Consultative Group. In 2016 (the year that the information used to produce the Noise Maps was collected) a total of 864 complaints were received from 393 people. On average these were responded to within 24-hours of being received.	
Average noise levels Each month we will report the average noise levels on take-off , giving figures for 24-hours, daytime only and night-time only.	Monthly average noise level trends are presented to our Consultative Committee at each quarterly meeting.	
Performance in following preferred noise routes We will continue to routinely report on the level of take-offs keeping to our preferred noise routes.	Monthly departure 'track keeping' performance is reported to our Consultative Committee at each quarterly meeting.	

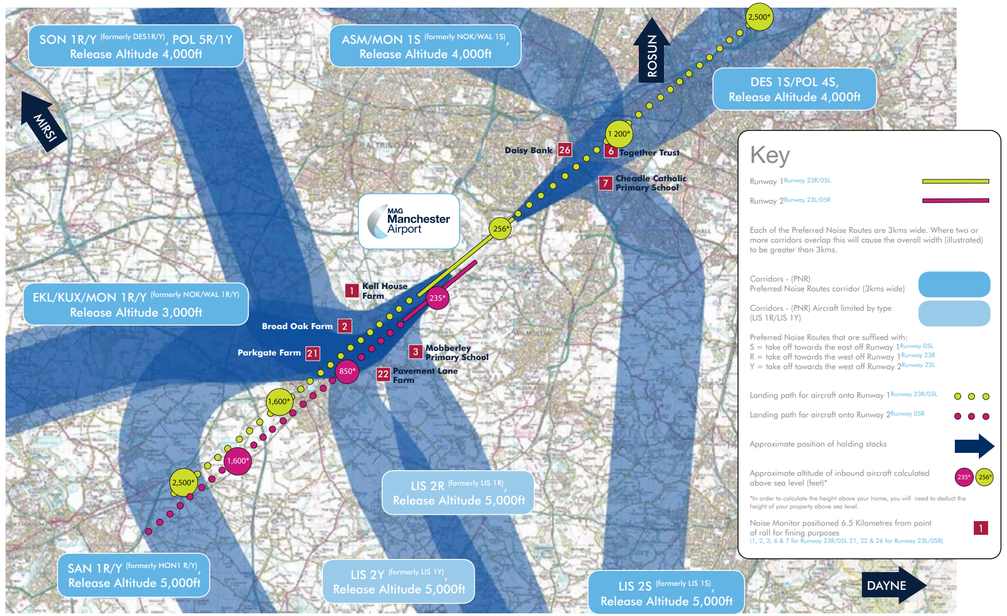
EFFECTIVE COMMUNICATION

CONTROL	PROGRESS	PERFORMANCE RATING
Community Relations Team We will keep in touch with local people so that we can act on their comments and continue to respond to community concerns.	The activities of our Community Relations Team continue to evolve and grow. We have a three-year Community Strategy that sets out the targets we have set ourselves. We recently consulted on our new Community Strategy 2018 to 2021 and this will be published later in 2018. You can find details of this and other aspects of our work in the community here **www.manchesterairport.co.uk/community/working-in-our-community/**	
Outreach centres We will continue to run our community outreach centres in communities around the airport.	A weekly Outreach Surgery is held in Knutsford library every Tuesday, with additional monthly sessions in the evening. During 2017 we also held 20 mobile outreach sessions across Cheshire and Greater Manchester. Details of our 2018 series of Outreach events can be found here **www.manchesterairport.co.uk/community/living-near-the-airport/community-outreach-events**	
Community representatives We will report details of our progress against the targets we have set ourselves. We will do this through regular meetings with local community representatives.	In 2017 we met with 52 Councillors representing the Parish, Town, Borough and City Councils that surround our site.	
Complaints and enquiries We will continue to offer a range of ways for people to make enquiries or complaints about aircraft noise.	Complaints and enquiries can be made either by Freephone, email or via our website. Most recently, the ability to investigate and register a noise complaint via 'Webtrak' was added in 2014.	
Responding to complaints We respond to 95% of noise complaints within five working days.	In 2017 we responded to all complaints about aircraft noise within the timescale we have set ourselves. Most complaints received a response in less than one working day.	
Environmental Health Officers Consultative Group We will continue to work with local authorities, through the Environmental Health Officers Consultative Group, to develop and report policies.	The Environmental Health Officers Consultative Group continues to grow and develop, with regular attendees representing ten of our local authorities. The Group meets three times a year. Recent agenda items have included changes to our runway operating times, consultation on airspace policy and local land use planning and development.	

APPENDIX E

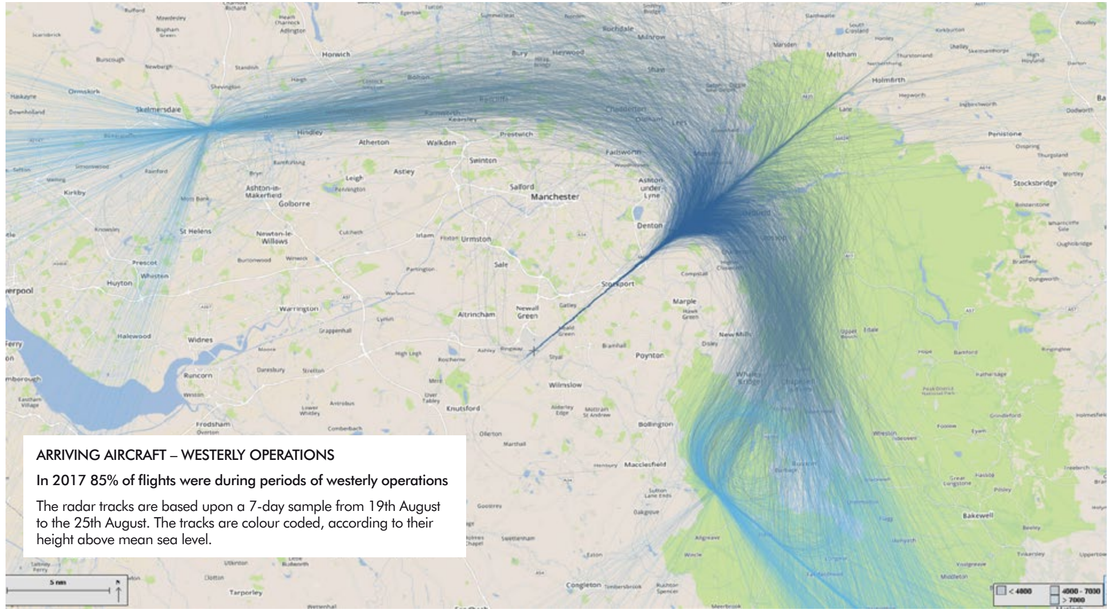
PREFERRED NOISE ROUTES





APPENDIX F

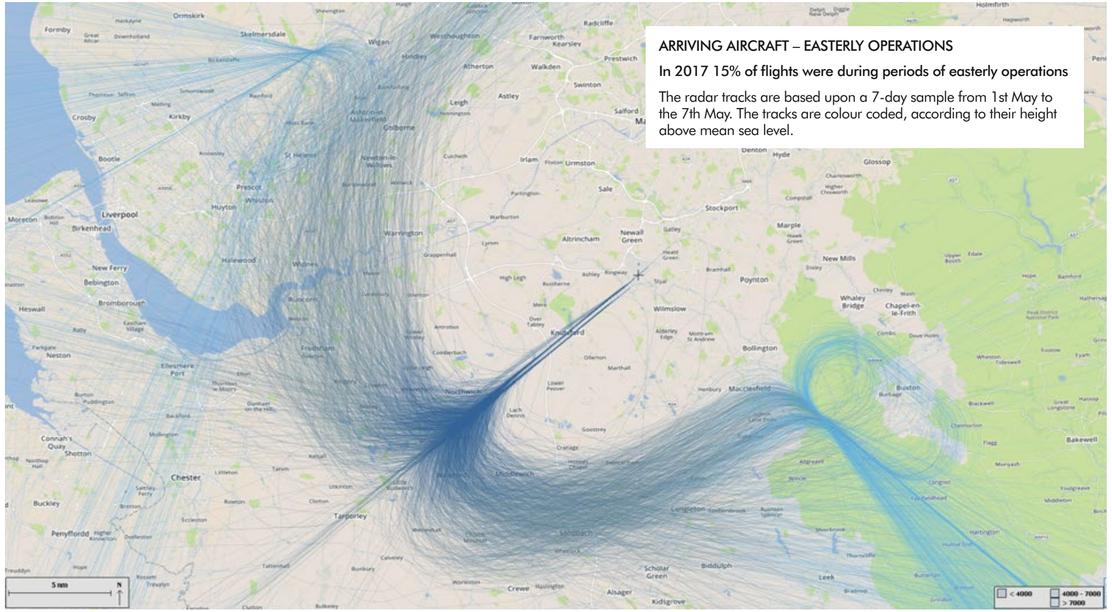
ARRIVAL AND DEPARTURE MAPS (2017)



ARRIVING AIRCRAFT – WESTERLY OPERATIONS

In 2017 85% of flights were during periods of westerly operations

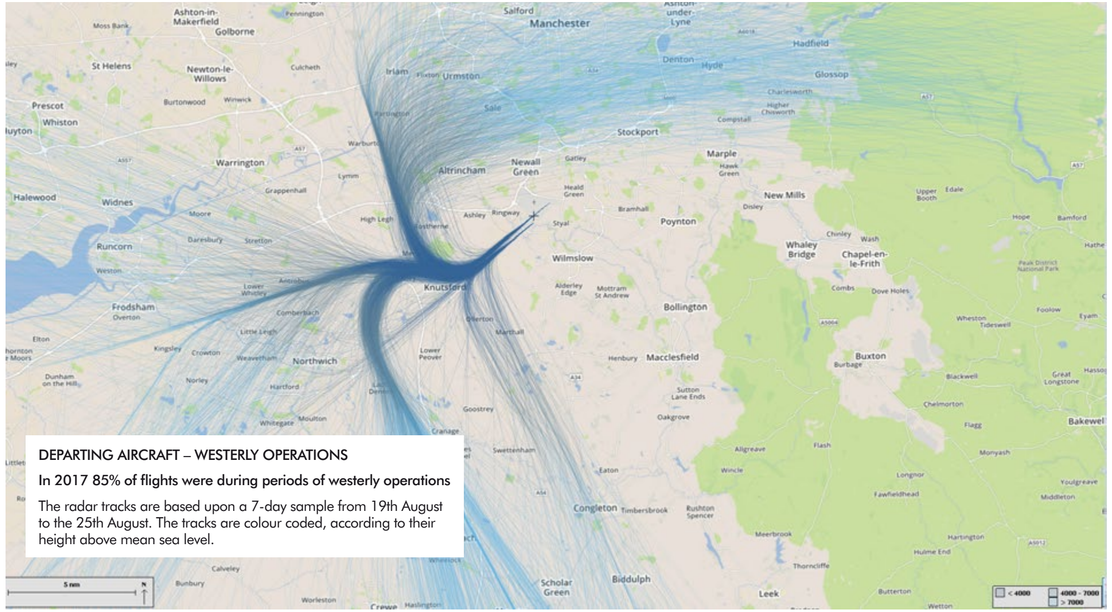
The radar tracks are based upon a 7-day sample from 19th August to the 25th August. The tracks are colour coded, according to their height above mean sea level.



ARRIVING AIRCRAFT – EASTERLY OPERATIONS

In 2017 15% of flights were during periods of easterly operations

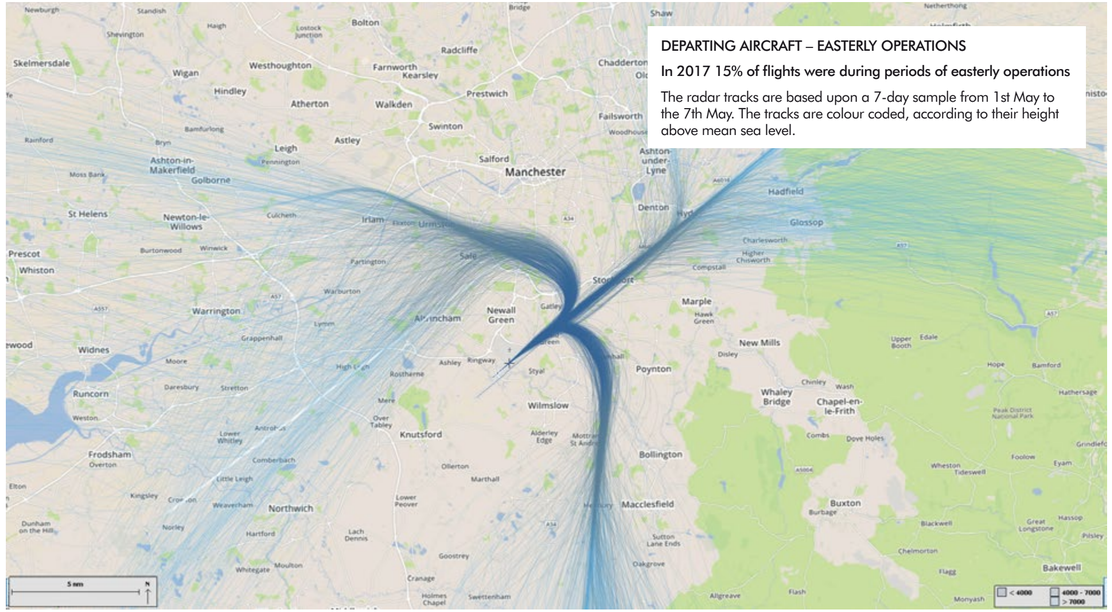
The radar tracks are based upon a 7-day sample from 1st May to the 7th May. The tracks are colour coded, according to their height above mean sea level.



DEPARTING AIRCRAFT – WESTERLY OPERATIONS

In 2017 85% of flights were during periods of westerly operations

The radar tracks are based upon a 7-day sample from 19th August to the 25th August. The tracks are colour coded, according to their height above mean sea level.



DEPARTING AIRCRAFT – EASTERLY OPERATIONS

In 2017 15% of flights were during periods of easterly operations

The radar tracks are based upon a 7-day sample from 1st May to the 7th May. The tracks are colour coded, according to their height above mean sea level.

APPENDIX G

SUMMARY OF CONSULTATION FEEDBACK

To be completed after the consultation is complete.

APPENDIX H

CURRENT EXPENDITURE ON NOISE MANAGEMENT

FINANCIAL INFORMATION

The Government recognises that a balance needs to be struck between local disturbance, the limits of social acceptability and economic benefit and has therefore provided guidance as to financial information that we should include in our Noise Action Plan. Any new noise control measure considered for inclusion in the plan must '…take account of the cost of implementation and the likely benefit expected to be accrued. No new noise control measures have been included within this revision of the plan.

APPENDIX I

LIST OF RESPONDENTS

To be completed after the consultation is complete.

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