
GATWICK AIRPORT AIRSPACE & NOISE PROGRESS REPORT 2019

Gatwick Airport

Airspace and Noise Management Board Public Meeting

3rd December 2019

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Foreword

2019 has been a year of significant development for advances in noise management and planning at Gatwick Airport. The UK's most advanced Noise and Track Keeping system has been deployed; a new Noise Action Plan has been agreed by Government; and, the Noise Management Board (NMB) has completed its first three-year term, having implemented most of the recommendations of the Independent Arrivals Review. The NMB's second term will begin in January 2020, based on the recommendations of a Committee of the Board that reviewed the NMB ToR as well as Purpose and Scope, providing a solid foundation for further collaborative noise reduction programmes.

Gatwick Airport Limited (GAL) introduced the UK's most advanced airport Noise and Track Keeping system in April. The new system represents a £1 million investment intended to significantly improve the monitoring of aircraft flights and associated noise as well as enabling unprecedented access to actual flight information for local communities. The flight tracking system, supported by a new fleet of noise monitors, presents near real-time flight tracking and noise data direct to the local community. This is complemented by the launch of a specially designed automated complaints phone line alongside a mobile app shortcut for the submission of aircraft noise complaints.

The Government has also adopted Gatwick Airport's Environmental Noise Directive (END) Noise Action Plan (NAP). Gatwick's first NAP was published in June 2010 covering the period 2010 – 2015. This provided a comprehensive oversight of the way in which noise around Gatwick is managed and the initiatives undertaken by the airport operator. The latest END NAP, for the period 2019 – 2024 is the third revision to the action plan, and the most comprehensive to date, building on the foundations laid by the previous versions. It has been revised in line with the latest guidance provided to airport operators by the Department for Environment, Food and Rural Affairs (Defra).

As regards balancing growth and noise, Gatwick has already developed an agreed Gatwick growth scenario and noise metric options to illustrate any noise impacts of these future growth scenarios. Delivery of the Noise and Growth portfolio of work was in May 2019, with noise contours in the second quarter of the year. Next steps include quantifying the benefits delivered by existing and planned noise management initiatives as an on-going element of the NMB Workplan.

The NMB is a unique body, bringing together representatives from all stakeholders in the management and mitigation of aircraft noise. It was established in 2016 based on the recommendations of the Independent Arrivals Review Report, issued in January 2016. Its main objective is to develop, agree, oversee and maintain a co-ordinated noise management vision and subsequent strategies for Gatwick Airport on behalf of stakeholder organisations. The main aim of this work is to reduce the impact of noise on the local community.

The NMB completed its first 3-year term in mid-2019. The second 3-year term will begin in 2020, with a revised structure and constitution reflecting the findings and recommendations of a comprehensive review and consultation conducted by the Board.

The new Noise Management Board will comprise of three groups: the NMB Executive Board (NEX); the NMB Community Forum (NCF); and, the NMB Delivery Group (NDG). Two new Independent Chairs have been selected to lead the NCF and the NEX which will be constituted in January.

The UK is planning for airspace modernisation in what is to be the largest reorganisation of Air Traffic Management since the 1960s. As a result of a review of how noise is managed by the airport, GAL has established the Airspace Office to manage airspace change, including the development of Gatwick's plans for the Future Airspace Strategy Implementation - South, as it affects the Gatwick area as well as noise management.

The combined progress achieved in 2019 and the frameworks now established, will enable Gatwick Airport and its noise management partners to build on the advances already made and progress delivery of further noise management initiatives and noise reduction strategies.

We are confident that these steps will support the fair and balanced approach to the management of aircraft noise at Gatwick, intended to improve the situation for the communities affected.

Bo Redeborn

Independent Chair

Noise Management Board

Andy Sinclair

Head of Airspace

Strategy & Engagement

Gatwick Airport Ltd.

1. Introduction

Gatwick Airport Ltd (GAL) is responsible for managing noise at and around the airport and is committed to its continued reduction. To achieve this, GAL manages a series of noise mitigation, reduction and, noise information management initiatives. This report describes the progress made by GAL and its partners on these initiatives during 2019. It includes activities related to the Airport's Noise Action Plan (NAP), the Noise Management Board (NMB) and the Noise and Track Keeping (NTK) System¹.

The report is set out as follows:

- **Section 2 – Noise Management Highlights 2019:** a summary of the areas of progress achieved by GAL and its partners across its noise management groups and activities. Key groups include the Noise and Track Monitoring Advisory Group – NaTMAG, and the Gatwick Airport Consultative Committee - GATCOM.
- **Section 3 – Noise Management Board:** an overview of the status and progress made by the NMB in 2019.
- **Section 4 – Noise Action Plan:** contextual information and an update on progress against the Environmental Noise Directive (END) Noise Action Plan.
- **Section 5 – Noise and Track Keeping System:** an overview of the new Noise and Track Keeping (NTK) System and associated activities.

Further details supporting the progress laid out in the report is provided in Annexes A - E.

Full details regarding the work of the airport with respect to aircraft noise management, noise reduction initiatives, future airspace change and noise reporting are available by viewing our noise webpages on the Gatwick Airport noise website at www.gatwickairport.com/noise.

¹ The NTK System is a new computer system that aims to significantly improve the monitoring of aircraft flights and associated noise, as well as sharing more information directly with local communities. It provides real-time flight tracking and noise data. Further information, including the flight tracker (WebTrak), can be found on Gatwick's website using the following link: <https://www.gatwickairport.com/business-community/aircraft-noise-airspace/>

2. Noise Management Projects 2019

The key areas of progress made by GAL across its noise management groups and activities in 2019 were:

- ✓ GAL announced the launch its new Noise and Track Keeping (NTK) system on 1st April 2019. The new system represents a £1 million investment that aims to significantly improve the monitoring of aircraft flights and associated noise as well as sharing more information directly with local communities. The new flight tracking system, supported by a new, and significantly expanded, fleet of noise monitors, presents real-time flight tracking and noise data direct to the local community. This is complemented by the launch of a specially designed automated complaints phone line alongside a mobile app shortcut for the submission of aircraft noise complaints – the first of its kind in the UK.
- ✓ A **new noise information website** was designed and deployed, informed by feedback provided by the Noise and Track Monitoring Advisory Group (NaTMAG), to better support the work of the Airspace Office to share information on Gatwick’s operations with local stakeholders. The website provides easier access to localised information on aircraft overflight and noise.
- ✓ The new **low noise arrival metric (LNAM)** was defined in 2019. In 2017, the NMB led the way in establishing a national cross-industry project in the UK to develop this metric. It aimed to complement the current CDA definition and the effectiveness of the CDA procedure in reducing noise, as well as providing an additional performance target for Gatwick which could also be used at other airports. The new metric will enable the measurement and benchmarking of arrivals against a viable optimum low noise approach. This Future Airspace Strategy (FAS) sponsored initiative has been progressed at the request of the NMB and via GAL by the CAA’s Environmental Research Consultancy Department and NATS throughout 2019. The expected delivery of the final report and recommendations is in early 2020. Validation of the metric using actual noise data and flight track trajectories is planned for 2020.
- ✓ Plans for a **Reduced Night Noise (RNN) trial** have continued to advance through 2019. This activity was initiated in 2017 and has the potential to verify whether meaningful noise reductions for communities can be achieved using Performance Based Navigation (PBN) technology during the night when noise sensitivity is high. In accordance with CAA’s new CAP1616 guidance, GAL submitted a Trial Submission Pack in late September 2019. The pack comprised details of the trial engagement, industry consultation, Instrument Flight Procedure (IFP) designs, environmental and safety assessments, trial procedures and activity timescales. This information is published on the [CAA Portal](#). GAL has since been informed by the CAA that, due to reprioritisation of their work by the new Department for Transport, a decision on the RNN Trial will be delayed. The CAA’s assessment and decision is an essential precursor to the trial and as a result, the trial will no longer start in March 2020 as originally planned. Gatwick is awaiting a clearer indication of likely timescales for assessment of the RNN trial by the CAA, however due to operational constraints in the Summer season (i.e. high traffic volumes), it’s likely that the trial will be delayed to Q3 2020, subject to the CAA’s assessment.

- ✓ A comprehensive **review of departure noise limits and associated fines** was completed. The review aimed to propose new noise limits and/or fine regimes to further incentivise aircraft to be flown more quietly, and to provide an additional financial incentive to airlines to make use of quieter aircraft types at Gatwick. The results of the review have been shared with the UK Department for Transport (DfT) to help inform future proposals to amend the current regime. The next steps following the conclusion of the Review will be taken forward in consultation with the NMB and DfT, who is currently drafting an Aviation Strategy which will include consideration of a review of noise limits.
- ✓ The **Airbus A320 family FOPP modification** initiative began in 2016 and has continued through 2019; 99% of flights by A320 family aircraft at Gatwick Airport are now operated by modified aircraft. Nevertheless, work continues at GAL to encourage airlines to modify their A320 fleet of aircraft types to fit a Fuel Over Pressure Protector (FOPP) deflector, to prevent the whining sound caused by airflow passing the unmodified wing cavities. The number of flights by unmodified aircraft increased from July 2019 due to unplanned temporary use of unmodified aircraft, required to cover the shortage of capacity arising from the 2019 grounding of the Boeing 737 MAX aircraft. Information on the number of flights made at Gatwick by unmodified A320 family aircraft can be found in **Annex A**.
- ✓ The **Airline Noise League Table** was developed in the 2017/18 NMB workplan and also relates to Action 5 in the Noise Action Plan (NAP). It has been running in “shadow mode” since March 2019; this is to provide quantitative data to permit validation of airline performance metrics which are used in the table. It is expected that the League Table will be launched in 2020.
- ✓ The various impacts of **Noise Abatement Departure Procedures (NADP)** have been studied for several years. In May 2019, the NMB concluded that it is unlikely there would be significant noise benefit from the standardisation of one or other NADP procedures at Gatwick. To70 provided analysis indicating a significant overall community noise benefit at Schiphol of using NADP2, which is also used by about 90% of departures at Gatwick. It also showed that the choice of NADP1 vs NADP2 redistributes noise with increases as well as decreases. The Workplan Implementation Steering Group (WISG) reviewed CAA research at Heathrow which demonstrated that noise decreases and increases were small, and that a decrease in Lmax occurred as a consequence of increase in height, at the expense of increased noise event duration. When taken account of by the SEL noise metric, this resulted in some people experiencing more noise and no people experiencing less noise. The NMB will be provided with a summary of the WISG’s findings in the new year.
- ✓ **Improving departure profiles** was previously included as Activity 19 of the NMB’s 2017/18 workplan. A detailed review of departure profiles has been undertaken by Trax² and reported to an NMB workshop held in July 2019. The review revealed that actual vertical climb profiles were, in most cases, significantly outperforming the designed climb profiles as a result of routine air traffic controller intervention. However, a small number of vertical profile design improvements could be implemented to slightly enhance climb performance although these would still require going through the airspace

² Trax are specialists contracted to GAL to conduct the design and implementation of Instrument Flight Procedures.

change process. More significant (lateral and vertical) changes to the Gatwick departure routes would be undertaken through GAL's work on airspace modernisation.

3. Noise Management Board

Introduction

The NMB is a unique body, bringing together representatives from all stakeholders in the management and mitigation of aircraft noise. It was established in 2016 based on the recommendations of the Independent Arrivals Review Report, issued in January 2016. Its main objective is to develop, agree, oversee and maintain a co-ordinated noise management vision and subsequent strategies for Gatwick Airport on behalf of stakeholder organisations. The main aim of this work is to reduce the impact of noise on the local community.

The NMB completed its first 3-year term in May 2019. The second 3-year term will begin in 2020.

NMB Organisation

In April 2018, the NMB Chairman proposed that a formal review of the NMB's Constitution should be undertaken to identify and agree any changes considered necessary for the NMB, in preparation for its second term. The NMB established a Review Committee, comprising five NMB members, to undertake a review considering the NMB purpose, objectives, governance, structure, membership, balance, legitimacy, outcomes, leadership and administration.

The Review Committee published its findings and recommendations in November 2018 and, at the request of the Board, then developed proposals for revised NMB governance. Preliminary draft Terms of Reference were presented by the Committee in March, seeking further NMB guidance. The Committee's finalised governance proposals were then provided to NMB members at the end of April, but the May meeting of the Board was not able to reach the required level of majority to permit the adoption of the Committee's recommendations. The NMB first term was closed, handing the decision on how to proceed for a second term to the NMB sponsor, GAL.

Following a period of further consultation and reflection, GAL adopted the Review Committee's finalised recommendations as the basis for launching the new NMB structure, using the proposed governance as the framework for the NMB.

The new Noise Management Board will comprise three groups: the NMB Executive Board (NEX); the NMB Community Forum (NCF); and, the NMB Delivery Group (NDG). Two new Independent Chairs have been selected to govern the NCF and the NEX. GAL would like to welcome the Chair designates; Warren Morgan (NCF) and, Jonathan Drew (NEX). The new Board will be constituted in 2020. Proposed 2020 meeting dates are provided in **Annex C**.

Since NMB/14 in May 2019, GAL requested that the WISG continue to progress the NMB Workplan activities, overseen by the interim NMB Chair and Secretary, while options for next steps for the NMB were considered.

NMB Activities 2019

The NMB First Term Report, presented at NMB/14 on 8th May 2019, provided a consolidated view of the progress of the NMB against its Workplan for the period June 2016 – May 2019. For a full list of the related meetings and workshops, see **Annex B**.

Since the end of the NMB first term report in May the WISG has, as requested by GAL, continued to progress NMB workplan activities. The WISG will become the NDG with effect from 1st January 2020.

This workplan, which currently consists of nine activities, categorised under three objectives, was developed using advice and guidance arising from multiple sources. These included papers from Community Noise Groups (CNGs), the outputs of several NMB meetings and workshops, and correspondence received from Councils and other individual community members.

Annex E presents the NMB 2019 Activity Report. Additional detail is provided on the period up to May 2019 in **Annex D**, which presents an extract from the NMB First Term Report.

Further Information

The NMB has a dedicated webpage containing details of upcoming meetings, current activities and key documents & minutes which can be found here: <https://www.gatwickairport.com/business-community/aircraft-noise-airspace/engagement/noise-management-board/>.

4. Noise Action Plan

Introduction

Under the Environmental Noise (England) Regulations 2006, GAL is required to produce a Noise Action Plan (NAP) which provides a comprehensive and effective driver for aircraft noise management and mitigation around Gatwick Airport.

GAL's first Environmental Noise Directive (END) NAP was published in June 2010 and covered the period 2010 – 2015, providing a comprehensive oversight of the way in which the noise climate around Gatwick is managed and the initiatives being taken forward by the airport operator. The 2019 – 2024 END NAP is the third revision to the action plan, building on the foundations laid by the previous versions. It has been revised in line with the latest guidance provided to airport operators by the Department for Environment, Food and Rural Affairs (Defra) and was formally adopted by the Parliamentary Under Secretary of State for the Environment on 11 February 2019, as required by the Environmental Noise Directive and the Environmental Noise (England) Regulations 2006 (as amended).

The 2019 – 2024 END NAP can be viewed here: <https://www.gatwickairport.com/globalassets/business--community/new-sub-category-landing-pages/aircraft-noise--airspace/fpt-reports/gal-end-noise-action-plan-2019-2024-lr.pdf>.

Progress Against the NAP in 2019

GAL monitors progress against the NAP by publishing quarterly and annual performance reports to the Gatwick Airport Consultative Committee (GATCOM) and the Noise and Track Monitoring Advisory Group (NaTMAG) as well as publishing an annual report online. Further details on the issues discussed in this report are outlined in GAL's FPT reports and the minutes of NaTMAG meetings which can be viewed here: <https://www.gatwickairport.com/business-community/aircraft-noise-airspace/noise-reports/>.

In the 2019-2024 END NAP, there are 58 NAP Actions in total. The Quarterly Performance Report published in October 2019 and presented to the November 2019 meeting of NaTMAG reported the following:

- Zero (0) NAP Actions identified as RED - Not on track.
- One (1) NAP Action identified as AMBER – Neither on track nor not on track
 - Action Plan Action 21 (selected for implementation during 2019): *In conjunction with our partners and the Noise Management Board, we will adopt a preferred Noise Abatement Departure Procedure (NADP).*
- The remaining 57 NAP Actions were assessed as being 'GREEN' – on track

It should be noted that the NMB Workplan aims to support the achievement of the activities laid out within Gatwick's END NAP. There is therefore cross-over in the activities reported against the NAP and the NMB progress report.

5. Noise and Track Keeping System

The New NTK System

GAL launched a new Noise and Track Keeping (NTK) system on 1st April 2019. The new computer system – provided by EMS Bruel and Kjør – represents a £1 million investment from GAL that aims to significantly improve the monitoring of aircraft flights and associated noise, as well as sharing more information directly with local communities. It provides real-time flight tracking and noise data.

The new flight tracking system is supported by a new fleet of noise monitors to monitor noise at more locations than before. It is supported by a specially designed automated complaints phone line and a mobile app shortcut for the submission of aircraft noise complaints – the first of its kind in the UK.

The system was developed in consultation with NaTMAG. Following its release, the newly constituted Airspace Office continued to work with NaTMAG to develop a new noise information website, providing easier access to localised information on aircraft overflight and noise.

Second Phase

In April 2019 after significant investment and several months of intensive work with the new system provider, EMS Bruel & Kjør, Gatwick Airport introduced a new NTK system, ANOMS, as well as an upgraded fleet of fixed and mobile aircraft noise monitoring terminals and associated public flight tracking functionality. Since that time, the airport has been working in conjunction with NaTMAG to deliver the second phase of the NTK system which was launched on 17th September 2019.

This second phase provides a dedicated airspace and noise information portal which includes information on the operation of the airport and the airspace surrounding it in the form of videos and information packs. Performance dashboards focusing on operations, noise and complaints allow for trends to be analysed whilst flight track mapping shows the variation in how aircraft operate to and from Gatwick Airport. Gatwick Airport has also sited an additional 13 noise monitors in the local area, bringing the total to 23; data from all these monitors is available to the public via this new portal. New format Aircraft Noise reports are also in development with delivery of the first such report expected in 2020.

NTK Systems in the END NAP

Implementation of the new NTK system, along with the wider program to improve the Flight Performance Team (resulting in the implementation of the Airspace Office), either partially or directly delivers the following actions noted in the Environmental Noise Directive Noise Action Plan (END NAP) 2019 to 2014:

Action 32: We will ensure that our Noise and Track Keeping (NTK) systems are suitable, relevant and reliable, providing updates as appropriate.

Action 33: We will continue to provide public access to flight track information and noise related data via the Gatwick Airport noise website and the online flight tracking facility, available both on desktop and mobile devices.

Action 34: We will continue to provide an airspace analysis service and implement service improvements where identified. The team will continue to provide accurate and timely data to aid strategy development and noise complaint handling.

Action 35: We will improve the availability of, and access to, airspace and noise related data.

Action 36: We will explore the feasibility of introducing an information service for local communities. This could include updates on airport operations, e.g. scheduled northern runway operations, change in runway direction, meteorological information, scheduled number of aircraft movements during the day and night periods, reported thunderstorm activity etc.

Action 37: We will continue to provide a Community Noise Monitoring Scheme, operated under the supervision of the Noise and Track Monitoring Advisory Group and the Gatwick Noise Monitoring Group.

Action 37a: We will seek to expand the Community Noise Monitoring Scheme with additional noise monitoring terminals and update the reporting process to include holistic noise reports for the area around Gatwick Airport.

Action 42: We will continue to offer various methods for complaints about aircraft noise events.

Action 43: In order to achieve community confidence in the Complaints Handling Policy and provide transparency of information, we will, where appropriate update our procedures relating to the receipt, processing and reporting of aircraft noise complaints.

Action 49: In conjunction with the Gatwick Noise Monitoring Group we will commission noise studies to gain an insight into the noise climate in a particular area and holistically across the Gatwick area. We will publish these reports on our website.

Next Steps

As part of the ethos of collaboration and continuous improvement, Gatwick Airport intends for the functionality provided by the NTK system to constantly evolve in order to remain fit for purpose. A further workshop session took place on 6th November 2019 prior to the full NaTMAG meeting on 7th November 2019 which reviewed the NTK re-development project to date and discussed, among other matters, what went well with the introduction of the NTK system, what could have been done better, and what else should a future 'third phase' of the NTK evolution include. The outcomes of this workshop are currently being evaluated and updates will be provided to NaTMAG and GATCOM in 2020.

Important Links

The new flight tracker can be found here: <https://webtrak.emsbk.com/lgw2>.

Noise complaints and enquires can be submitted through the following methods:

- Online web-form: <https://viewpoint-eu.emsbk.com/lgw3>
- Automated phone line by calling: 01293 311 568
- Via a mobile app short cut, you can save this to you device by:

- Apple: tap the box with the vertical arrow and add to home screen
- Android: Tap the three menu dots and select save to homepage

Annex A. Airbus A320 Series FOPP Modification

This annex documents the number of flights made by unmodified aircraft to and from Gatwick Airport from Jan – Oct 2019 inclusive.

Month	Un-modified FOPP flights
Jan-19	183
Feb-19	176
Mar-19	143
Apr-19	122
May-19	103
Jun-19	128
Jul-19	206
Aug-19	340
Sep-19	244
Oct-19	216
Nov-19	78

Note: the increase from July is due to the temporary use of unmodified lease aircraft following the worldwide grounding of the Boeing 737 MAX aircraft, which would otherwise have been used by some Gatwick operators.

Annex B. First Term NMB Meetings and Workshops

The table below illustrates the extensive list of NMB engagements including all of the NMB meetings and workshops undertaken throughout the first term of the NMB. Note that this list excludes industry initiative related workshops, meetings of the Workplan Implementation Steering Group (WISG) which ordinarily take place monthly, and meetings of the NMB Review Sub-Committee.

NMB Meeting/Workshop	Date
NMB/1	21 June 2016
NMB/2	7 September 2016
NMB/3	15 November 2016
Gatwick Airspace and NMB Public Meeting (NMB/4)	31 January 2017
NMB/5	5 April 2017
NMB Workshop: Continuous Descent Operations	2 May 2017
NMB Workshop: Departures	1 June 2017
NMB/6	14 June 2017
NMB/7	6 September 2017
NMB/8	15 November 2017
Gatwick Airspace and NMB Public Meeting	7 December 2017
NMB/9	11 January 2018
NMB Workshop: Reduced Night Noise	14 March 2018
NMB/10	11 April 2018
NMB Workshop: Departures	23 May 2018
NMB/11	27 June 2018
NMB Workshop: 2019/2020 Workplan	22 August 2018
NMB/12	26 September 2018
NMB Ad-Hoc Meeting: NMB Review	28 November 2018
Gatwick Airspace and NMB Public Meeting	5 December 2018
NMB/13	9 January 2019
NMB Ad-Hoc Meeting: NMB TORs	13 March 2019
NMB/14	8 May 2019
NMB Update Meeting	24 July 2019

Annex C. Second Term NMB Meetings

The table below sets out the planned dates for meetings of the NMB Community Forum (NCF) and the NMB Executive Board (NEX) for 2020.

NMB Meeting/Workshop	Date
NMB Induction Day	30 Jan 2020
NCF Meeting 1	26 Feb 2020
NEX Meeting 1	18 Mar 2020
NCF Meeting 2	20 May 2020
NEX Meeting 2	24 Jun 2020
NCF Meeting 3	23 Sep 2020
NEX Meeting 3	18 Nov 2020
Gatwick Airspace and NMB Public Meeting	03 Dec 2020

Annex D. NMB First Term Report (Jun 2016 – May 2019)

The report below summarises the status of actions within the consolidated 2017/2018 NMB workplan at the end of the First Term of the NMB. The report is an extract from the NMB First Term Report issued on 01 May 2019 (NMB-14 IP10).

Activity 1: Ongoing monitoring and reporting	<i>Due: Ongoing</i>
<p>Task: Regular reporting to the NMB (and ultimately via NATMAG) on several metrics including, but not limited to, the following:</p> <ul style="list-style-type: none"> • Imm-01 A320 Series FOPP modification • Imm-10 ILS joining point distribution • Imm-12 Night KPI • FED analysis using the community defined gates • Progress reports on ongoing implementation tasks <p>Responsibility: GAL</p> <p>Progress: Reporting is an ongoing activity.</p> <p>In January 2018, a new noise charge was introduced at Gatwick for any FOPP-unmodified A320 family aircraft arriving at the airport. Statistics for the number of unmodified aircraft since January 2018 can be found in Annex B. Statistics for the number of unmodified aircraft are now reported through the Noise and Track Monitoring Advisory Group (NaTMAG) at Gatwick.</p> <p>Imm-10 and Imm-12 are now reported by The Flight Performance Team (FPT) (the Airspace Team) at Gatwick within their Quarterly reports.</p> <p>Analysis of the community defined gates has been halted because delivery of the requested traffic distribution simultaneously across multiple community defined gates with current vectoring procedures is not possible. There is no mechanism identified to deliver Fair and Equitable Distribution (FED) in the short-term with current vectoring procedures. Controlled distribution of traffic across multiple points will only be possible in a future RNAV environment.</p> <p>Activity Milestones:</p> <ol style="list-style-type: none"> 1. Report to NMB/14 - May 2019 2. Report to future NCF and NEX 3. Report to future NCF and NEX 	
Activity 2: Review of metrics for NMB activities	<i>Due: Ongoing</i>
<p>Task: Review current metrics in use at Gatwick and within the wider industry, to identify metrics and reporting structures to measure the impact of the NMB workplan and growth of the airport.</p> <p>Responsibility: GAL</p> <p>Progress: GAL have completed and shared the following; 1) a detailed review of Government policy on aviation noise; 2) commissioned an Ambient Noise study to understand the impact and consequence of ambient noise and; 3) an 'Assessing Noise Performance' paper, which sets out how, through working closely with community groups, a number of noise metrics have been identified in order to better assess, monitor and report noise impacts.</p> <p>Therefore, with effect from 2019, GAL will also report, in addition to the annual primary noise metrics, secondary</p>	

noise metrics, i.e. Number Above noise exposure contours to assess frequency of noise impact:

- Summer 16-hour day N65, at levels 20, 50, 100, 200 and 500 events; and
- Summer 8-hour night N60, at levels 10, 20, 50 and 100 events.

Use of the N65 day and N60 night metrics allows a balanced and more comprehensive view of the impacts local residents are likely to experience from aircraft noise. These measures may better reflect the perception of the change in noise created through the growth of air traffic movements at the airport and are likely to be more easily understood.

As in previous years, the Civil Aviation Authority’s (CAA) Environmental Research and Consultancy Department (ERCD) will be commissioned to calculate noise contours (including primary and secondary metrics) and the annual noise exposure report. The aim is that all noise impact contours would be produced by the ERCD by end Q2 each year for the previous year.

Performance will be measured against a goal based upon forecast noise impact modelling, akin to that currently set out as part of the Gatwick Airport draft Masterplan document in the current scenario based upon a single runway operation.

Performance against achieving the goal set, based on the forecast noise exposures, will be provided to GAL as part of the annual noise exposure contours reported in the FPT (the Airspace Team) Annual Report and presented to NaTMAG, GATCOM and the NMB.

This activity has been adopted in the 2019/2020 workplan as work continues to identify a basis on which the balance of growth and noise can be uniformly and consistently monitored, managed and reported.

Activity Milestones:

1. Develop an agreed Gatwick growth scenario – November 2018
2. Develop noise metric options to illustrate any noise impacts of future growth scenarios – January 2019
3. Delivery of Noise and Growth portfolio of work – May 2019
4. Delivery of noise contours – Q2 2019
5. Quantify the benefits delivered by existing and planned noise management initiatives – TBC through NMB Workplan

Activity 3: Determine target distribution for FED

Due: On hold

Task: Data analysis, discussion and agreement of FED distribution targets between industry and Community Noise Groups (CNG).

Responsibility: GAL

Progress: Community defined FED distribution targets were agreed by the NMB in September 2017 and were incorporated into subsequent FED monitoring reports. However, in Q3 2018 analysis of the community defined gates was halted because delivery of the requested traffic distribution simultaneously across multiple gates with current vectoring procedures is not possible (as outlined in the Report of the Arrivals Review and later confirmed by NATS). There is no mechanism identified to deliver FED in the short-term with current vectoring procedures. It is expected that the NMB will work on the identification and development of an operations concept for FED, which is expected to require use of P-RNAV approach procedures, in 2019.

This activity has been adopted in the new workplan; to define the noise requirements to deliver FED in an RNAV environment.

Activity Milestones:

1. No milestones attached.

Activity 4: Publish a noise league table

Due: Q4 2019

Task: Development and publication of a league table to track airline noise performance.

Responsibility: GAL

Progress: A review has been conducted of best practice from other airports around the world that currently operate noise, airline, or 'Fly Quiet' league tables. International best practice was compared between other airports and high-level options were presented to GAL for consideration and refinement.

A voluntary Working Group, consisting of airline and GAL representatives, has met several times during the year to support development of the league table. In collaboration with airlines, GAL have identified several operational and strategic metrics which will be monitored and reported against. A number of workshops have been held to review and refine the proposed metrics and to develop the league table model.

Further refinement and validation took place in Q1 2019, and integration of the model with GAL's new NTK system is planned for Q2 2019. Once integrated, it is expected that the model will run in shadow mode for 3 months using live data to test that the expected results are being produced and to refine further if required. The expected launch date is planned for Q4 2019.

This activity will complete before the end of the year and as such it has not been adopted in the new workplan. Work will continue through 2019.

Activity Milestones:

1. Agreement on KPIs and reporting process between GAL and airlines – Q2 2019
2. League table model validation and completion – Q3 2019
3. First report – Q4 2019

Activity 5 Research into aircraft height perception

Complete

Task: Commission independent academic research to identify if there is a correlation between aircraft size, noise level and height perception. This is Imm-15 from the Arrivals Review.

Responsibility: GAL

Progress: The University of Sussex were commissioned to undertake this study. Field work took place through August and September 2017 with mobile noise monitors placed at Crowborough, Cowden, Penshurst and Tunbridge Wells. The study used a postal survey, street interviews and field visits to gather data.

The preliminary findings of the report were presented at NMB/9 in January 2018, and the full report was published online following final presentation of the report findings on 14 March. This activity is now complete.

The final report can be found here: <https://www.gatwickairport.com/business-community/aircraft-noise-airspace/airspace/height-perception-study/>.

Activity Milestones:

1. Publication of final report – Complete, Q1 2018
2. Follow up presentation for NMB members – Complete, Q1 2018

Activity 6 Develop requirements for future London airspace changes

Due: 2019

Task: Develop requirements for input into future airspace change as part of the Future Airspace Strategy Implementation (South) Programme. This will include consideration of the following Independent Arrivals Review recommendations as part of a full options appraisal:

- Aspire-21, the implementation of carefully designed routes from the holding fixes to the ILS joining point to provide the opportunity to reduce noise, disturb fewer people and deliver fair and equitable dispersal of noise.
- Aspire-22, the moving of the Gatwick holding areas to a higher altitude or relocation over water.

In addition, Activities 16 to 19 may also have an input to Future Airspace Strategy Implementation (South) (FASI(S)) and the outcomes of these activities will be provided to the NATS airspace modernisation team.

Responsibility: GAL

Progress:

The Government co-sponsored programme of airspace modernisation will provide the primary vehicle through which significant airspace and procedural redesign can be accomplished. The delivery programme, FASI(South), will follow the CAP1616 process and we envisage will require 3-4 years to develop, engage and ultimately consult on a future airspace design; the CAA and possibly the Secretary of State for Transport will be the final arbiters on a future airspace design. The airspace change process requires appropriate stakeholder engagement through which perspectives are gleaned on design principles, their relative importance and the application of design options. The NMB members are recognised as stakeholders and will be engaged at appropriate occasions to collect perspectives and ideas.

GAL submitted its Statement of Need to the CAA in Sept 2018 to initiate the redesign of its departure and arrival procedures as part of FASI-South; the CAA accepted this without amendment in Jan 2019. The next step in the CAP1616 process is the development of design principles through engagement with a wide range of organisations and groups; these design principles will assist with the selection of options to examine in more detail. It is our intent to submit these to the CAA in mid-June for their assessment. The airspace change reference is ACP-2018-60, and can be accessed via this link:

<https://airspacechange.caa.co.uk/PublicProposalArea?pID=54>

Activity Milestones:

1. Gatwick FASI(S) Statement of Need – Submitted to CAA Sept 2018
2. NMB FASI-South Workshop –Deferred by NMB to 2019 – Q3 TBC)

Activity 7 Scoping and feasibility assessment of NATS FED initiatives

Due: Complete

Task: The feasibility assessment to determine the likely benefits and drawbacks of four NATS-led FED options for introduction in the near/medium term. The task will recommend which activity/activities can be taken forward for implementation.

The options identified for detailed consideration were:

1. Use of airspace blocks to provide dispersal
2. Lowering the level of the stacks to reduce track distance
3. Limiting the departure point from the hold
4. Review impact on the swathe through the application of increased holding

Responsibility: NATS

Progress: NATS have conducted expert engagement and operational workshops to review the feasibility of each of the four initiatives along with the likely benefits and impacts. The first three options were discounted for technical, operational or safety reasons. Evaluation and analysis of option #4 is complete and NATS concluded that increased holding had negative implications on the outer holds, leading to greater use of the outer holds and thus reduced CDA performance and runway capacity, without enabling any significant advancement of FED.

This activity is therefore complete as there is no mechanism to deliver FED with current vectoring procedures. The focus is moving towards mechanisms to deliver FED in a future RNAV environment. This activity has been adopted in the new workplan; to define the noise requirements to deliver FED in an RNAV environment.

Activity Milestones:

1. Completion of feasibility, benefit and impact analysis - Complete, September 2017

Activity 8 Scoping and feasibility assessment of follow on FED initiatives

Due: On hold

Task: The feasibility assessment of additional FED initiatives. This task follows on from Activity 7, and seeks to investigate the following additional proposals which could assist with the delivery of FED:

- Varying the ILS joining point for predictable periods

- Use of a reduced ILS joining point
- Reinstating the straight in approach for runway 26

It is proposed that this activity is undertaken when the concept of operations for FED is developed.

Responsibility: NATS / GAL

All of the three items proposed would require an airspace change process (ACP) to be followed as defined in the CAA’s CAP 1616 document. Given the progress of airspace change for the FASI(S) – see Activity 6 – it is appropriate to incorporate these proposals into that ACP rather than pursue them as stand-alone items. The activity will therefore currently not be progressed.

Activity Milestones:

1. Milestones will be developed once this task has been fully scoped.

Activity 9 Development of a low noise approach KPI [Previously: Review and update the CDO definition]

Due: First phase June 2019

Task: GAL will investigate the development of a low noise approach metric to improve upon the current CDO definition.

Responsibility: GAL

Note: This is not Gatwick specific and there is an understanding and recognition that this activity can only be delivered through a Gatwick proposed and Sustainable Aviation (SA) led initiative with extensive support from the CAA and NATS to ensure effective engagement at both UK and European levels. This activity evolved from the Independent Arrivals Review recommendation ‘Imm-08 CDA taxonomy’.

Progress: In 2017, the NMB led the way in establishing a national cross-industry project in the UK to develop a new low noise approach metric to complement the current CDA definition and provide an additional performance target for Gatwick and all airports. This metric will enable the measurement and benchmarking of arrivals against a pragmatic optimum low noise approach.

The activity includes the following tasks:

- The conduct of noise analysis to identify the optimised low noise approach for a variety of aircraft types in the current and future airline fleets;
- Identification of an optimum low noise approach profile envelope based upon noise analysis i.e. upper and lower approach profiles;
- Testing of the new KPI against historic radar data for participating UK airports;
- Recommendations on how to implement the new KPI and introduce low noise approach as a new definition.

Work is ongoing, with SA overseeing the study. The Future Airspace Strategy (FAS) sponsored work is being conducted by CAA (ERCD), with NATS supporting and project management provided by Helios for GAL.

End-to-end analysis is complete for the Airbus A320, Airbus A380, and the Boeing 787-8. Analysis is ongoing by ERCD for the Q400, however due to resource constraints, planned timescales have slipped. NATS have commenced testing of the new KPI for the 3 completed aircraft, whilst the CAA are carrying out their analysis on the final aircraft in parallel. This phase of the study is expected to end at a revised date of Q2 2019. Validation of this metric has been included in the 2019/2020 workplan as a follow-on activity.

Activity Milestones:

1. Conclusion of noise modelling – September 2018 (delayed to April 2019)
2. Completion of test and evaluation of new KPI – November 2018 (delayed to May 2019)
3. Publication of final report – January 2019 (delayed to Q2 2019)
4. Validation of metric – to be captured through the 2019/20 workplan

Activity 10 Review speed limitations on approach	Complete
<p>Task: Review current speed limitations on approach and determine if these need to be altered to support optimum continuous descent operations and low power low drag on current and new aircraft types.</p> <p>Responsibility: GAL</p> <p>Progress: GAL have surveyed airlines at Gatwick to gather the views of senior pilots on the current approach speed restrictions and if these could be altered to deliver noise improvements for arrivals.</p> <p>The survey conclusions were discussed in the FLOPSC workshops in October and November 2017. Of those who responded to the survey, there was broad support for the current restrictions, as NATS provides a degree of flexibility which allows aircrews to fly in the optimum, low noise, configuration. Despite this, there was interest in a revised final approach speed of 170kt to 5NM because it can delay the deployment of the landing gear on certain types such as the B738 and the A321. This speed restriction was trialled in 2007 at Gatwick Airport and is still available to aircraft upon pilot request.</p> <p>As NATS will, where possible, accommodate speed requests from aircrews to allow approaches in an optimal configuration, there was no benefit to change the current approach speed regime. The conclusion of the workshop has closed this activity and the outcome was reported to the NMB in November 2017.</p> <p>This activity is now complete.</p> <p>Activity Milestones:</p> <ol style="list-style-type: none"> 1. Submission of findings to NMB – Complete, November 2017 	
Activity 11 Review noise abatement information provided to airlines by commercial flight plan service providers	Complete
<p>Task: Conduct a gap analysis on the information provided to airlines by commercial flight plan service providers compared with the regulated information contained in the UK AIP and make recommendations to improve the availability and the level detail provided.</p> <p>Responsibility: GAL</p> <p>Progress: GAL expanded the scope of this study to consider both the information provided by commercial providers (based overseas) along with Gatwick’s entry in the UK Aeronautical Information Publication (AIP).</p> <p>A survey was conducted of airlines at Gatwick to understand which commercial flight plan service providers are used, and GAL engaged with these providers to gather the required information.</p> <p>The study noted that the provision of CDO information on a specific approach chart within the Gatwick AIP could be improved by providing additional information for airlines. The referenced charts have now been updated, but further work is required to introduce this to all of the relevant charts. This will be explored over the next year.</p> <p>The review of commercial flight information identified a number of improvements to the level and clarity of information provided. The commercial operators committed to update their information and make the new versions available to flight crews. The information has subsequently been updated and circulated.</p> <p>This activity is now complete.</p> <p>Activity Milestones:</p> <ol style="list-style-type: none"> 1. Collection of information from commercial providers – Complete, October 2017 2. Completion of gap analysis and identification of improvements – Complete, November 2017 3. Submission of findings to NMB – Complete, January 2018 	
Activity 12 Improve collaboration between airlines to align CDO standard operating procedures and noise training	Complete
<p>Task: Creation of an airline engagement and continuous improvement forum and engagement process</p>	

covering CDO.

Responsibility: GAL

Progress: The FLOPSC workshops in October and November 2017 concluded that the best option to share information was through an operator briefing pack which was previously produced by the tower ATC provider (NATS / ANS). The pack would contain information on the specific procedures including those covering noise abatement procedures at Gatwick and will be circulated to current and future operators to advise on noise abatement and operational procedures.

Helios have completed the operator briefing pack and the supporting document control sheet. The briefing pack was reviewed by industry experts and was presented to FLOPSC at the end of May 2018. This pack has been circulated to current and new operators at GAL, to be used as ongoing guidance for operations at Gatwick Airport. It is available on the public website.

This activity is now complete, however it is annually reviewed and updated.

Activity Milestones:

1. Identification of a suitable engagement process – Complete, November 2017
2. Completion of first draft of new operator pack – Complete, May 2018
3. Circulation of finalised pack to airlines – Complete, June 2018

Activity 13 Reduced Night Noise (RNN) Trial	Due: June 2020
<p>Task: To trial carefully designed RNAV routes in the night period to determine whether RNAV arrivals reduce noise.</p> <p>Responsibility: GAL</p> <p>Progress: An industry workshop took place in July 2017 to review the existing night time operations, discuss opportunities for improvement, and identify and agree objectives for the Reduced Night Noise initiatives. The workshop outcomes were reported to the NMB in September 2017.</p> <p>Several meetings have taken place throughout 2017/2018 to mature the concept and commence trial scoping, including considerable data analysis. Industry, community and technical workshops have also been held to help refine the requirements for the trial and the concept of operations.</p> <p>At NMB/11 in June 2018, industry and elected NMB members agreed their support for the RNN trial, subject to some additional clarifications requested by CNGs. An ad-hoc meeting was held in July to resolve these questions, which resulted in a number of additional actions. These have been addressed. GAL, supported by NaTMAG and the NMB workplan implementation steering group, concluded that further delaying the trial would compromise a valuable opportunity to gather actual noise data and to validate the benefits and drawbacks of the use of RNAV approach procedures. GAL indicated that because of the expected benefits, it was minded to proceed with the RNN trial.</p> <p>In September and December 2018, GAL submitted a Statement of Need and Trial Plan respectively to the CAA to ensure that the CAA requirements could be met on schedule. Trial planning and preparation was based on the requirements of CAP1616; the revised CAA Airspace Change Process, effective January 2018. In March 2019, GAL attended a CAA Assessment Meeting, where the trial proposal was presented and discussed in detail. The CAA have since provided further guidance on the requirements for airspace trials, and GAL has commenced consultation with industry through an Airline Survey and a Technical Workshop.</p> <p>The expected start date of the trial is January 2020. This activity has been included in the new workplan as planning, implementation and review of the trial results are expected to take place through 2019/2020.</p> <p>Activity Milestones:</p> <ol style="list-style-type: none"> 1. Submit Statement of Need – September 2018 (complete) 2. Submit Trial Plan – December 2018 (complete) 3. CAA Assessment Meeting – March 2019 (complete) 4. Completion of draft route design – June 2019 5. Safety Assessment – TBC 6. Trial commencement – January 2020 7. Trial completion – June 2020 	

Activity 14 Standardise Noise Abatement Departure Procedures (NADP)	Due: On hold
<p>Task: Conduct analysis on the Noise Abatement Departure Procedures (NADP) currently used by airlines operating at Gatwick and seek to identify an optimal procedure to become a recommended practice.</p> <p>Responsibility: GAL</p> <p>Progress: NADP is an aircraft noise management procedure which is used between 800ft and 3,000ft. The procedure changes the location of noise benefit to either be close to the runway (NADP 1), or at an increased distance from the airport (NADP 2).</p>	

An ANMAC report (CAP 1691), published in July 2018, provides detailed analysis for both NADP 1 and NADP 2 comparing a number of different aircraft types. The following conclusions were drawn from the CAA’s review of NADP:

1. The noise benefit of one NADP procedure over the other is barely noticeable to the human ear, typically between 1 and 3dB. A reduction in noise over 3dB is rarely observed.
2. When L_{max} is reduced, SEL increases. This means that one metric is worse while another one is better between different NADP procedures. It is not possible to improve both at the same time.
3. No single NADP procedure will reduce departure noise in all locations; a change of NADP simply moves noise from one location to another.

The NMB concluded it would be unlikely that there would be significant noise benefit from the standardisation of NADP procedures at Gatwick. Work continues to validate this conclusion. NADP will be considered as appropriate in any future departures work.

Activity Milestones:

1. Completion of DfT ANMAC research (A320) – Completed July 2018
2. Update of study findings to NMB – September 2018

Activity 15 Review departure routes to minimise impact

Due: September 2018

Task: Assess current Standard Instrument Departure (SID) routes to identify current issues and develop options for optimised/multiple SID routes within current NPRs.

Responsibility: GAL

Progress: On behalf of GAL, Trax has completed an Operational and Environmental Impact Assessment (EIA) of the Route 3 proposed amendment, working closely with Heathrow Airport as several of their SIDs conflict with Route 3. The results of the assessment, as discussed at NMB/11, means that Activity 19 has been paused in relation to Route 3. See Activity 19 update.

No further work will be undertaken specifically in relation to the Route 4 SIDs under the auspices of this activity. A separate Route 4 Airspace Change Process (ACP) has been developed following the Court decision to quash the CAA’s Route 4 Post Implementation Review.

Note: Route design changes to any SIDs would be considered an airspace change. This activity does not include the ACP which would follow as an additional work program. Any additional work program would be based upon, and guided by, the findings of future feasibility, benefit and impact analysis.

Note: The study will be conducted in sequence following Activity 19 (the review of constraints placed upon Gatwick departures by routes to/from other airports) which has identified a need to consider changes to arrivals and departure routes to other London airports to enable SID design optimisation.

A Departures Workshop is planned for June 2019 to discuss progress and next steps.

Activity Milestones:

1. Completion of feasibility and options study on Route 3 and 4 – Delayed from December 2017 due to additional work necessary under Activity 19 – Completed January 2018
2. Presentation of findings to NMB – Complete January 2018
3. NMB Departures Workshop – May 2018 (this included discussion on work to review additional departure routes)
4. Completion of Route 3 Environmental Impact Assessment – July 2018
5. Assessment of impact assessment and benefits to inform Go/No Decision – September 2018
6. Report to NMB – January 2019

Activity 16 Review departure vectoring practices	<i>Due: TBC</i>
<p>Task: Review of current departure vectoring practices with the aim to inform works to potentially increase or decrease the minimum vectoring height on specific SIDs.</p> <p>Responsibility: GAL/NATS</p> <p>Note: Activity 19 includes a review of the interactions between the Gatwick departure routes and the routes to other airports. This task will need to be completed prior to the commencement of Activity 16.</p> <p>Progress: The NMB departures workshop, which took place in June 2017, provided initial inputs to this task which has allowed for the task to be scoped and planned. No further activity has taken place on this task as priority has been assigned to Activity 19, which is an important pre-cursor to this activity.</p> <p>This workstream is subject to the ongoing Route 4 ACP undertakings and Route 3 works.</p> <p>Activity Milestones:</p> <ol style="list-style-type: none"> 1. Completion of feasibility and options study – TBC* 2. Presentation of findings to NMB – TBC* <p>* Milestone dates will be assigned once this task has been fully scoped.</p>	
Activity 17 Review of departures at night	<i>Due: TBC</i>
<p>Task: Review of current night time departures and identify opportunities for improvements.</p> <p>Responsibility: GAL</p> <p>Note: Both Activity 19, a review of the interactions between the Gatwick departure routes and the routes to other airports, and Activity 20, a review of airport scheduling practices will need to be completed prior to the commencement of Activity 17.</p> <p>Progress: The NMB departures workshop, which took place in June 2017 has provided initial inputs to the Gatwick Scheduling team for consideration. This activity is frozen as priority has been assigned to Activity 15 and 19.</p> <p>Activity Milestones:</p> <ol style="list-style-type: none"> 1. Completion of feasibility and options study – TBC* 2. Presentation of findings to NMB – TBC* <p>* Milestone dates will be assigned reflecting actual timelines of Activities 19 and 20. .</p>	
Activity 18 Conduct a feasibility analysis of SID rotation	<i>Due: TBC</i>
<p>Task: Conduct a feasibility assessment on the use of Standard Instrument Departure (SID) route rotation to provide departures FED.</p> <p>Responsibility: GAL</p> <p>Note: Activity 19 includes a review of the interactions between the Gatwick departure routes and the routes to other airports. This task will need to be completed prior to all other departures related activities.</p> <p>Progress: GAL has conducted some initial work (with airlines, NATS and ANS) around the feasibility of SID rotation and to understand how the airport can influence SID usage. This activity is frozen as priority has been assigned to preceding Activity 15 and 19.</p> <p>Activity Milestones:</p> <ol style="list-style-type: none"> 1. Completion of feasibility and options study – TBC* 2. Presentation of findings to NMB – TBC* <p>* Milestone dates will be assigned contingent on Activity 19.</p>	

<p>Activity 19 Review of constraints placed upon Gatwick departures by routes to/from other airports</p>	<p><i>Due: 2019</i></p>
<p>Task: Conduct a review of arrivals/departures routes to/from other London airports to identify restrictions and develop options to allow Gatwick departures to climb in a more consistent and low noise configuration.</p> <p>Responsibility: GAL</p> <p>Progress: The study identified which routes impact Gatwick Routes 3 and 4, how often the routes are used and their specific limitations on the operation.</p> <p>The Route 3 Operational and Environmental Impact Assessment supported an earlier study that identified the need for changes to Heathrow operational practices and departure routes to enable the removal of the initial climb restriction on Route 3 reported at NMB/11. While the report was positive, Heathrow was 18 months into a 2-year steeper departures trial of its Detling departure route and was not in a position to introduce changes to the conflicting departure routes until the outcomes of the steeper departure gradient trial were known. This would mean pausing the work on Route 3 pending the outcome of this work.</p> <p>Next steps need to be further considered in this context, however, there is a review into improving profiles on all other Gatwick SIDs. The review objective is to establish why each SID climb profile is designed in its current form and identify where improvements could be made and/or what would need to happen to enable those changes. The review could also include analysis to show how each SID is actually flown.</p> <p>Note: No further work will be undertaken specifically in relation to the Route 4 SIDs under the auspices of this activity. A separate Route 4 ACP will be developed following the Court decision to quash the CAA's Route 4 Post Implementation Review.</p> <p>A Departures Workshop is planned for June 2019 to discuss progress and next steps.</p> <p>Activity Milestones:</p> <ol style="list-style-type: none"> 1. Feasibility and options study for Route 3 and 4 – Complete, October 2017 2. Route 3 and 4 Continuous Climb benefits assessment – Complete, December 2017 (Additional Activity) 3. Presentation of study findings to NMB – Complete, January 2018 4. Feasibility and options study results validation by NATS – Complete, March 2018 5. Discussion of next steps at NMB Departures Workshop – May 2018 6. Route 3 Operational and Environmental Impact Assessment – Complete July 2018 7. Development of departures activities for the 2018/19 work plan – July 2018 8. Review of lateral and vertical performance on Routes 1, 7, 8 and 9 – Q2 2019 9. Review of lateral and vertical performance on Routes 5 and 6 – Q2 2019 10. Review of lateral and vertical performance on Route 2 – Q2 2019 <p>Note: This task will be completed prior to all other departures related activities as any proposed changes resulting from this task will impact all other departures workstreams.</p>	

Activity 20 Review Gatwick airlines' scheduling practices	<i>Due: TBC</i>
<p>Task: Review current scheduling practices and identify areas for potential improvements to assist with the delivery of FED.</p> <p>Note: This includes options to optimise the arrivals/departure waves, reduce delays and minimise unscheduled operations in the night period.</p> <p>Responsibility: GAL</p> <p>Progress: The NMB FED and departures workshops, which took place in April and June 2017 both identified potential benefits of improving scheduling practices. Cross-industry work, supported by GAL, as part of an Industry Resilience Group (IRG) is being progressed as a UK wide initiative, as part of a programme for improving aviation resilience.</p> <p>Activity Milestones:</p> <p>TBC</p>	

Annex E. NMB 2019 Activity Report (Jun – Dec 2019)

Objective: Reduce Noise
Activity 1 Review and validate the Low Noise Arrival (LNA) Metric
<p>Task</p> <p>Validate that the LNA metric is a good tool to monitor, report and incentivise improved arrivals noise and, if validated, implement for real-time monitoring.</p> <p>The work on the LNA metric is focussed on the definition of the LNA metric and producing the report by the CAA that sets out the rationale and evidence for it. Next steps for the project will include operational validation of the metric and then implementation.</p> <p>Phase of flight: Arrivals</p> <p>Outcome: Validation of the proposed LNA metric with the aim of its permanent implementation in the live environment.</p> <p>Planned Activities:</p> <ul style="list-style-type: none"> • Develop LNA metric based on analysis of aircraft performance. • Document the metric in a report setting out the rationale and evidence for it. • Conduct a trial to validate the LNA metric at Gatwick using measured noise data and actual arrivals. • Based on validation results, implement the metric for real-time monitoring. <p>Progress</p> <p>The study has been delayed due to resource constraints at the CAA. Delivery of the final report is expected in January 2020. Helios are in the process of scoping out the validation study on behalf of Gatwick Airport, which is planned to commence in 2020. The updates below summarise activity progress with regards to development of the LNA Metric through 2019:</p> <ul style="list-style-type: none"> • A Technical Workshop was held on 11th June to discuss study progress and results of the LNA Metric analysis. CAA ERCD presented three categories of descent performance based on noise data for different aircraft types, and NATS demonstrated their dashboard to illustrate arrival performance at multiple airports based on the criteria defined by the CAA. • Following the workshop, both the metric criteria and dashboard were further refined, and development of the final report commenced. The report is expected to be finalised in January 2020. • The LNA Metric will be validated in 2020 using actual noise data and track trajectories.
Activity 2 Reduced Night Noise (RNN) Trial
<p>Task: Plan and operate the RNN trial.</p> <p>Phase of flight: Arrivals</p> <p>Outcome: Demonstration of a reduction in the number of people disturbed by night arrivals that are flying excessively noisy profiles and/or flying unnecessarily low.</p> <p>Planned Activities:</p> <ul style="list-style-type: none"> • Plan and run the RNN trial as described in the trial plan.

Progress:

- Formal industry consultation, required under CAP 1616, commenced in late May for 4 weeks, and concluded at the end of June. Feedback was reviewed and addressed and is included in the Trial Submission Pack.
- Noise modelling was completed in late September to support the environmental assessment in line with CAP 1616 requirements. This included modelling of 60dB L_{MAX} footprints and noise analysis from data collected by NMTs around Gatwick airport.
- IFP Design and simulator validation was concluded in October 2019 and submitted to the CAA for IFP Approval.
- Nine sites for noise monitors were selected to the East and West of the airport. All monitors have been deployed and thresholds are currently being defined to ensure that data capture is maximised.
- The Trial Submission Pack was submitted on 27th September and can be found on the [CAA Portal](#). The pack contains details of the trial engagement, industry consultation, IFP designs, environmental and safety assessments, trial procedures and activity timescales.
- Since submitting the Trial Pack, the CAA have informed GAL that the trial is likely to be delayed due to reprioritisation of ongoing Airspace Change Proposals (ACPs). This will delay the start of the trial from the proposed March 2020 start date.
- Funding for the trial has been secured through FAS; Sustainable Aviation (SA) is the trial sponsor.

Activity 3: Incentivise the use of quieter aircraft

Task: Review departure noise limits at which fines are levied, propose new, stricter noise limits and, if appropriate, implement them.

Phase of flight: Departures

Outcome: New departure noise limits.

Planned Activities:

- Review the noise limits and the fine regime and propose new stricter limits based on analysis of historical data.
- Consult with the DfT on the process to change noise limits.
- If appropriate, implement the changes requested by the DfT.

Progress:

- A comprehensive review of departure noise limits and associated fines was completed, with the aim of proposing new noise limits and/or a fine regime. The findings of this study were presented to GAL in June.
- GAL presented the results to the DfT who is currently considering what, if any, changes to make. DfT will need to consult with airlines and other stakeholders before making any changes. This activity is shared with and reported through NaTMAG in line with the Noise Action Plan.

Objective: Reduce the Impact of Noise

Activity 4 Define FED in an RNAV environment

Task: Define the noise requirements to deliver Fair and Equitable Distribution (FED) in an RNAV environment.

Phase of flight: Arrivals and departures

Outcome: Identification of the requirements to allow operations to deliver FED in an environment using RNAV (PBN) technology, and the operational concepts to deliver it.

Planned Activities:

- Capture the requirements and expectations of the NMB regarding FED in an RNAV environment.
- Collate and analyse the requirements.
- Investigate operational concepts, i.e. point merge, arrival/departure route rotation, etc.
- Produce a concept of operations for achieving FED requirements in an RNAV environment.

Progress:

- *Since FED is defined by community groups, this activity has been put on hold until community representation is available through the re-formed NMB.*

Activity 5 Improve departure continuous climb

Task: Analyse departure profiles on each route and identify if and where aircraft are being held in level flight or with reduced climb rates at 4,000ft. Engage with NATS and other airports to explore potential options for alleviating these constraints.

Phase of flight: Departures

Outcome: Increase in the number of aircraft operating a continuous climb.

Planned Activities:

- Review and analyse departure profiles on each departure route (SID).
- Identify the number and frequency of aircraft that are held in level flight or with reduced climb rates.
- Investigate with NATS and other airports the reasons for this and to understand if, and how, the constraints can be alleviated.
- Implement changes as appropriate.

Progress:

- Trax presented the Departures Review summary and conclusions at the GAL update meeting on 24th July. The review revealed that actual vertical climb profiles were, in most cases, significantly outperforming the designed climb profiles as a result of routine air traffic controller intervention. However, a small number of vertical profile design improvements could be implemented to slightly enhance climb performance although these would still require going through the airspace change process.
- Trax met with GAL on 26 September to discuss the activities to be undertake on CCO in the short-term. Outputs from this meeting will feed into a rescoping of the activity in the work plan.

- Options for potential improvements to the vertical profile of departing aircraft, including some of the outputs from the Departures Review, would be fundamental to, and embedded in, GAL's work on airspace modernisation.

Activity 6 Review of Land Use Planning (LUP)

Task: To develop a process that enables the NMB to inform local planning authorities, developers and potential purchasers of the aircraft noise environment in different areas.

Phase of flight: Arrivals and departures

Outcome: A greater awareness of residents of newly developed property of the aviation noise profile for the location before they occupy. To strengthen the possibility for planning authorities to inhibit residential development for noise reasons, in areas subject to aircraft noise.

Planned Activities:

- Co-ordinate with local planning authorities to inform them of the noise environment in different areas.
- Produce an information guide that can be distributed to people considering moving to the relevant areas.

Progress:

- A workshop with local authorities is planned to review the actions proposed from the NMB Land Use Planning Workshop held in November 2016 to scope out and identify the next steps for improving LUP.

Objective: Strategic Activities

Activity 7 Balance growth and noise

Task: Implement the growth and noise protocol.

Phase of flight: Arrivals and departures

Outcome: To provide a basis on which the balance of growth and noise can be uniformly and consistently monitored, managed and reported.

Planned Activities:

- Activities will depend on the protocol defined in the growth and noise papers.

Progress:

- This activity is ongoing and the 2019 supplementary noise contours have been commissioned alongside GAL annual contours. It is anticipated that the Summer 2019 noise contours (including supplementary metrics), although already commissioned, will be delayed until Q3 2020.
- Further engagement with industry stakeholders will be necessary to agree and establish the appropriate processes to generate and monitor the relevant metrics.
- The process for assessing noise performance, once agreed, will be incorporated as a fundamental component of the Airspace Office reporting regime overseen by NaTMAG.
- Modifications to the Noise Action Plan, to reflect the '5-yearly' goals, will need to be included when developed.

Activity 8 Facilitate NMB engagement with Future Airspace Strategy Implementation (South)

Task: Provide guidance to the NMB on the airspace change process and the requirements of CAP1616, and support NMB members' engagement with the process.

Phase of flight: Arrivals and departures

Outcome: NMB engagement in the Future Airspace Strategy Implementation (South) (FASI(S)) planning for Gatwick.

Planned Activities:

- Educate the NMB on the airspace change process and requirements of CAP1616 through the NMB and associated NMB workshops.
- Bilateral discussion between Gatwick and the NMB to share updates on FASI(S) and to capture community feedback.

Progress:

- FASI(S) updates are ongoing through the ACP CAP1616 process.
- *Note that this activity has been integrated with activity 4. It is on hold until community representation is available through the re-formed NMB.*

Activity 9 Strengthen community engagement

Task: Disseminate more widely the noise management information and briefings provided to the NMB to inform and educate more residents. Noise study literature shows that improving communication to the wider community has considerable potential to reduce the noise impact of the airport. Better dissemination of information will allow more people affected by noise to understand the airport’s operations and what it is doing to minimise noise.

Phase of flight: Arrivals and Departures

Outcome: Greater community awareness of noise information.

Planned Activities:

- Gather feedback from the NMB regarding current processes for disseminating noise management information, and ideas for disseminating information more widely.
- Develop a strategy to disseminate information more widely through the NMB and also through Gatwick Airport.

Progress:

- GAL has invested significant resources into the website to strengthen community engagement. The NMB webpage was reviewed again in October. Updates based on the recommendations from this review are planned to be implemented before the end of the year.
- A separate Communications Working Group is proposed as part of the second term NMB structure to help strengthen NMB engagement. In particular, the Working Group will provide further specification of which information should be shared, in what format it should be made available to improve consistency with national criteria (as evolving through ICCAN) and improve transparency and clarity.

Annex F. Acronyms

ANMAC	Aircraft Noise Monitoring Advisory Committee
ANS	Air Navigation Solutions
CAA	Civil Aviation Authority
CDO/CDA	Continuous Descent Operations/Approach
CNG	Community Noise Groups (on the NMB)
dBA	'A' weighted decibel
DfT	Department for Transport
END	Environmental Noise Directive
FAS	Future Airspace Strategy
FASI-S	Future Airspace Strategy Implementation-South
FED	Fair and Equitable Distribution
FLOPSC	Flight Operations Performance Safety Committee
FOPP	Fuel Over Pressure Protector
FPT	Flight Performance Team
GAL	Gatwick Airport Ltd
GATCOM	Gatwick Airport Consultative Committee
ILS	Instrument Landing System
IFP	Instrument Flight Procedure
LNA	Low Noise Arrival
LMax	A measurement of peak noise level
LTMA	London Terminal Manoeuvring Area
NADP	Noise Abatement Departure Procedure
NAP	Noise Action Plan
NaTMAG	Noise and Track Monitoring Advisory Group
NATS	Formerly National Air Traffic Services
NERL	NATS En-Route plc
NMB	Noise Management Board
NPR	Noise Preferential Route
LAMP	London Airspace Modernisation Programme
RNAV	Area Navigation
RNN	Reduced Night Noise
SA	Sustainable Aviation
SEL	Single Event Level
SID	Standard Instrument Departure