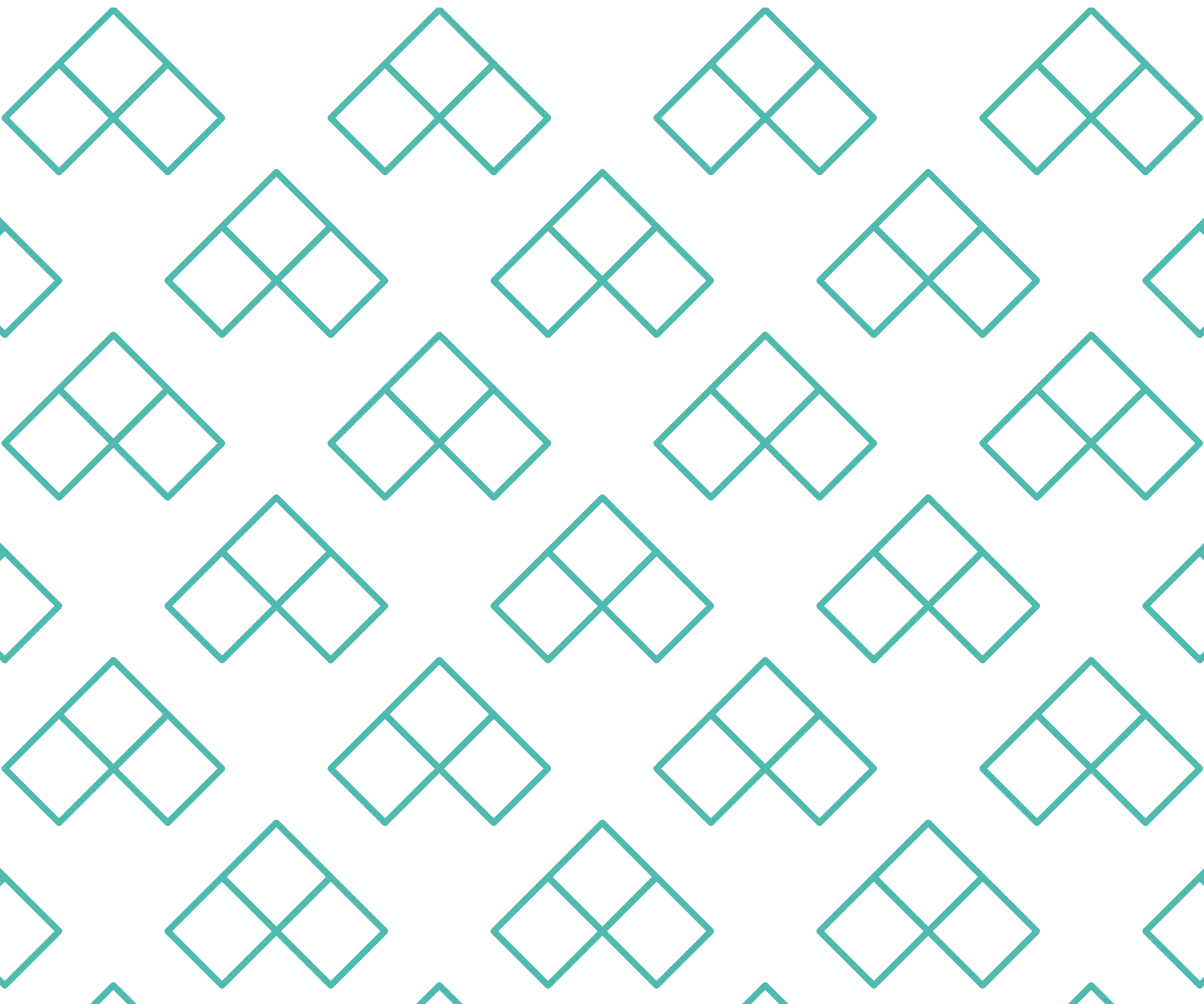


Noise Preferential Routes Review

LONDON LUTON AIRPORT

2025 CHANGE FEASIBILITY REPORT



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Introduction

London Luton Airport Operations Ltd (LLAOL) has a Noise Action Plan (2024 – 2028) as part of their commitment to minimising the impacts of aircraft noise for communities within surrounding areas of flight paths in and out of the London Luton Airport (LLA).

Minimising noise is a priority for LLA, and the airport will continue to work with industry partners to mitigate proportionately. As part of this work, the 50 actions set out in the Noise Action Plan reflect the airports approach to noise management.

As part of this plan, LLA committed to exploring opportunities to increase the vectoring release altitude for each of the departing noise preferential routes (NPR's) and their impacts.

This document is the review of the vectoring release altitude on LLA's Noise Preferential Routes (NPR's). This is the altitude that an aircraft can be vectored off the routes by Air Traffic Control.

This review was to investigate increasing the vector release altitude to 4,000ft during the 24-hour period on all routes. This is currently set 4,000ft for the westerly Match departure route over 24-hours and for all other departure routes this is set at 3,000ft during the day (0700-2300), 4,000ft during the night (2300-0700). This document reviews the feasibility of the proposal.

Background

What is a SID?

A Standard Instrument Departure (SID) is a set of instructions designed in line with the International Civil Aviation Organisation (ICAO) PAN-OPS 8168 guidance material that are coded into aircraft flight management systems (FMS) for pilots to either use as guidance or allow the aircraft to fly themselves in auto-pilot.

There are many forms of technology that enable these designs to be used. This can come in the form of conventional navigation using ground based beacons which provide magnetic compass bearings and ranges to aid the turns or by satellite based navigation.

At the time of publishing (2026) LLA utilises SIDs based on both types of navigation types.

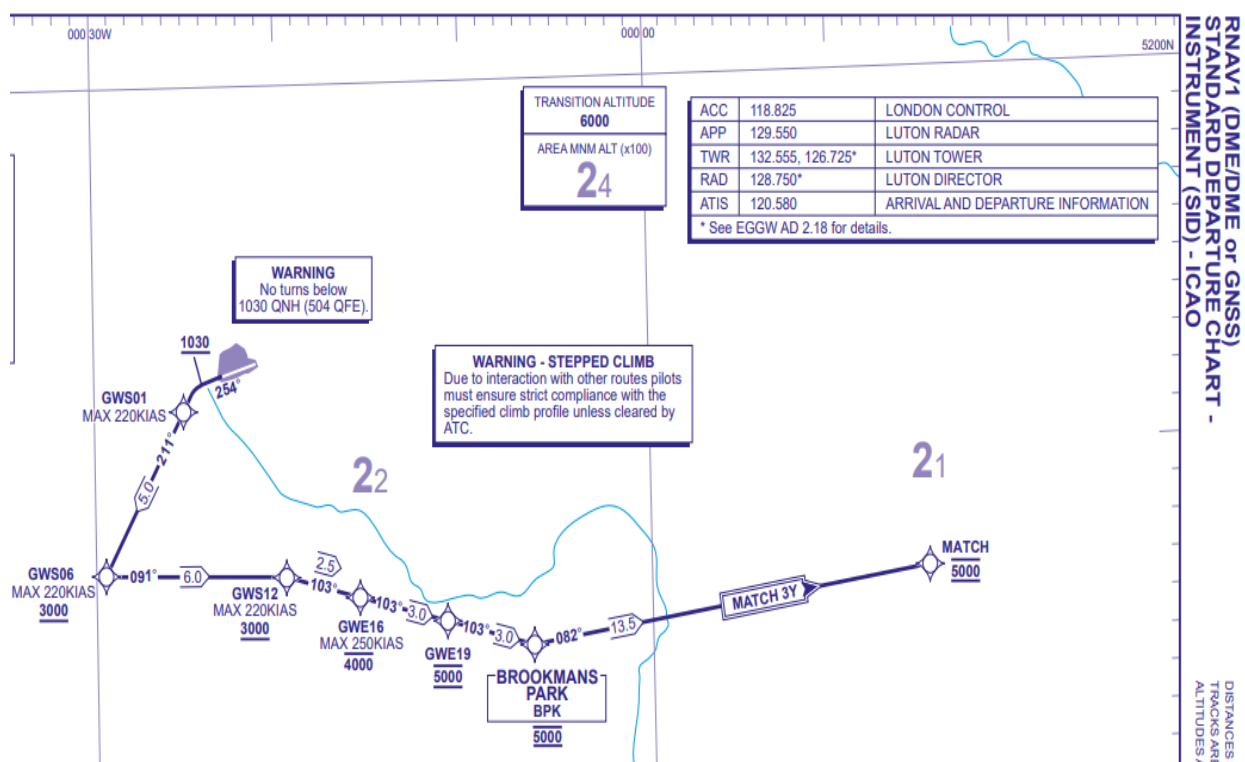


Figure 1: RNAV1 MATCH3Y SID Aeronautical Publication (Source: UK AIP)

Figure 1 above shows the LLA RNAV1 MATCH3Y SID which is a satellite based navigation route and enables aircraft to depart from LLA on Runway 25 and to eventually turn east for access to the upper airways heading to Northern Europe and Scandinavia.

The table below shows the departure routes from LLA on runway 25 and 07, including both conventional and RNAV1 (satellite) SID.

Runway	SID	Type of Navigation
25	MATCH 3B	Conventional
25	DETLING 8B	Conventional
25	MATCH 3Y	RNAV1 (satellite)
25	DETLING 3Y	RNAV1 (satellite)
25	RODNI 1B	Conventional
25	OLNEY 2B	Conventional
07	MATCH 2C	Conventional
07	DETLING 7C	Conventional
07	RODNI 1C	Conventional
07	OLNEY 2C	Conventional

Figure 2: LLA's SIDs available

Noise Preferential Routes (NPR)

NPR's originated in the 1960s for designated airports (Stansted, Heathrow and Gatwick) when the Department for Transport suggested departure routes that aircraft should try to follow in order to minimise the number of people overflown by departing aircraft from airports which it owned and operated.

In the early 1990s, a 1.5km swathe was added to either side of these NPRs to enable track keeping performance to be assessed. The government's lead, over the years a number of other airports have also established NPRs and monitored track-keeping performance.

Some airports in the UK voluntarily introduced additional methods of minimising noise. Other airports followed local planning authorities, LLA's current Section 106 details LLA's requirements to minimise noise and LLA has been reporting on NPRs since the early 1990s. Our NPR's are published to operators in the Aeronautical Information Publication (as exemplified above) and our SID's follow the same NPR routes.

Track Performance Monitoring

All propeller-driven aircraft with Maximum Take Off Weight (MTOW) over 5,700kg and all jet aircraft leaving London Luton Airport are required to follow specific NPRs (dependent on the SID). LLA's NPRs are a corridor three kilometres wide (2km for the RNAV1 (satellite) routes), within which aircraft are deemed to be flying on track.

Once an aircraft has cleared the designated NPR route Air Traffic Control (ATC) can instruct the pilots to fly a more direct heading towards their destination. This is known as vectoring.

The obligations of NPRs for conventional departure routes (SIDs) cease when a height of 3,000ft AMSL (between 07:00hrs to 23:00hrs local time) and 4,000ft AMSL (during night-time, 23:00 to 07:00 hours local time) has been reached. The obligations of the RNAV1 NPR ceases when a height of 4,000ft AMSL has been reached at all times, and once the aircraft has crossed the railway line between Harpenden / St Albans.

LLA are working hard to minimise the noise and environmental impact on neighbouring communities. In April 2015, London Luton Airport implemented a Track Violation Penalty Scheme resulting in fines for aircraft that leave the NPR before reaching the required altitude.

Using the current Aircraft Noise and Track Monitoring System the airport's Flight Operations Department evaluates and investigates aircraft tracks with required input from Air Traffic Control (ATC) and airlines. When the aircraft is clearly flying outside the corridor the aircraft is identified as causing a "possible" track violation.

As always, safety prevails and there may be cases which involve vectoring an aircraft sooner than at the NPR height restriction. When there is valid justification for a deviation from the track, the operator in question will be exempt from the fine. Valid justifications include:

- Safety or operational reasons i.e. ATC Vectoring
- Weather avoidance due to Cumulonimbus (CB) or Towering Cumulus (TCU) cloud activity (as instructed by ATC)
- Aircraft technical issues providing the engineers report
- Emergencies, providing "PANPAN" or "MAYDAY" has been reported to ATC

LLA reports the number of track violations, the operator, aircraft type and total fine for each track violation in both the Quarterly Monitoring Reports and Sustainability Reports. These reports are published on LLA's website as well as presented to the London Luton Airport Consultative Committee (LLACC) via the quarterly Noise and Track Sub-Committee (NTSC) meetings.

The Flight Operations team strive for continuous improvement in airline track performance and has positive engagement bi-annually with our airline partners in the Flight Operations Committee (FLOPC) to discuss any trends discovered. Work with airline partners is continuous to reduce track deviations where possible.

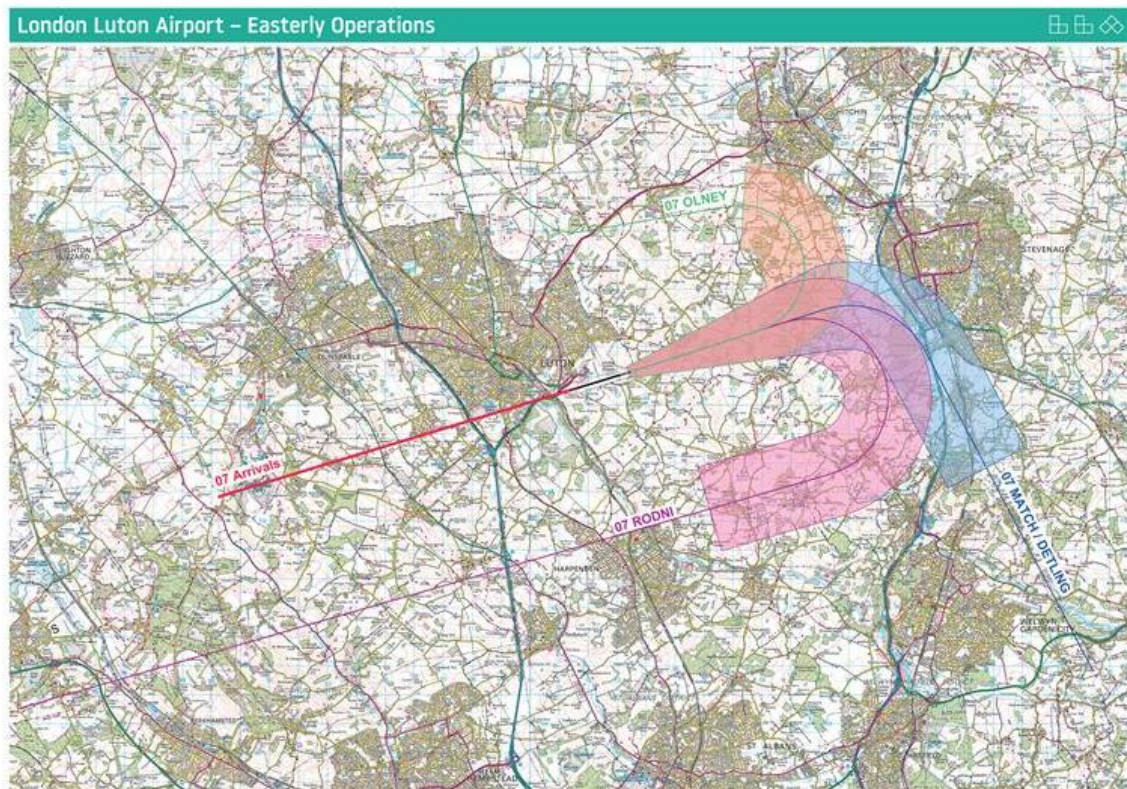


Figure 3: LLA 3 NPR's for aircraft departing Runway 07

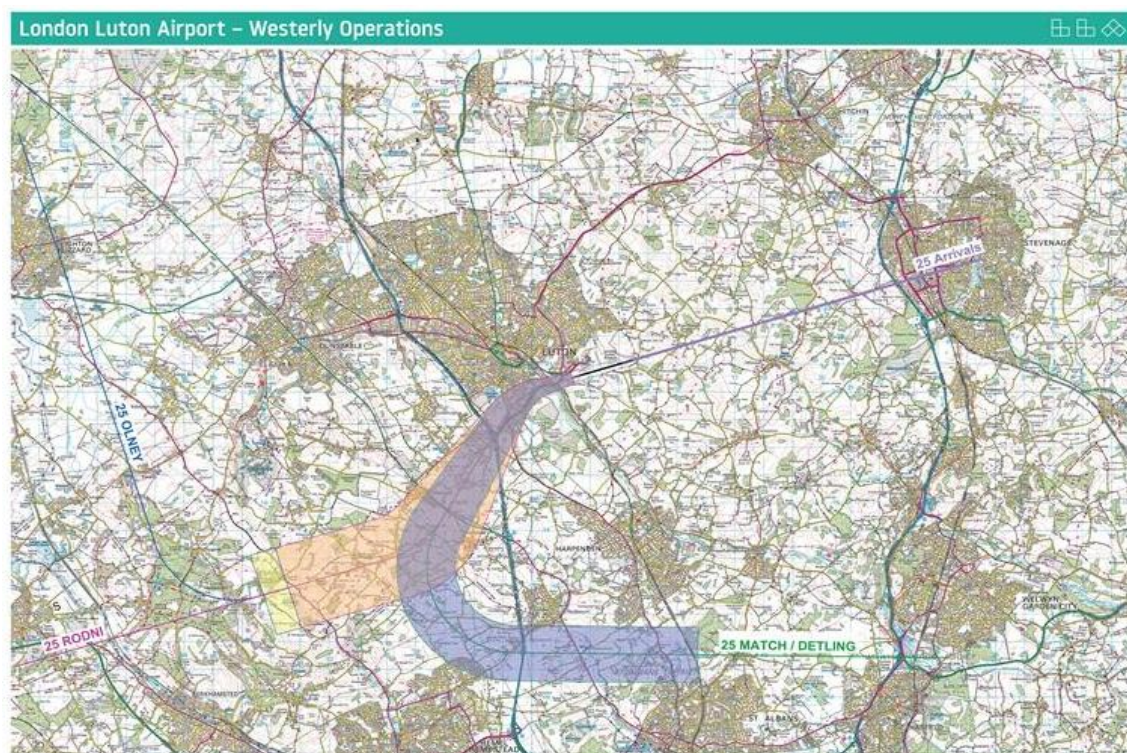


Figure 4: LLA 3 NPR's for aircraft departing Runway 25

Track Violation Fines

Over time, LLA have utilised financial penalties to improve track performance, but by increasing the severity of these penalties, LLA hope to improve overall track performance via a deterrence.

All fines are provided to LLA's Community Trust Fund to help local organisations better their services for local communities.

How these fines have progressed is shown below:

Year	Between 0700-2259L	Between 2300-0659L
April 2016	£750	£1,000
April 2018	£1,000	£2,000
January 2026	£1,250	£2,250

Figure 5: Fine Progression Per Violation (Source, LLA Noise Management Plan 2025)

Feasibility and Complexities

London Airspace Density

LLAs airspace is part of the London airspace network. The airspace here is the busiest in the UK and makes up 60% of UK traffic that is handled by NATS. They handle on average 7,000- 8,000+ of flights per day. The number of flights in the small area highlights the complexity of the network and challenges it can bring.

RODNI 1B / 1C NPR Complexities

LLA aim for aircraft to depart and climb as quickly as possible to minimise noise and emissions. Aircraft that are higher in altitude will have a lower noise impact on the ground and is always strived for by airlines and ATC.

LLA's Aeronautical Information Publication for RODNI 1B / 1C, have restrictions on the maximum altitudes for aircraft. The reason for this is because of the complexity of the network that our airspace is part of and is a requirement for safety.

These restrictions are in place to avoid the Bovingdon Stack if the aircraft was to carry on flying the SID rather than Air Traffic Controllers vectoring / climbing them to their next reporting point more efficiently.

The Bovingdon Stack is a holding pattern used by Air Traffic Controllers in the London area to manage the flow of inbound traffic into various London Airports (not including LLA). It is named after the Bovingdon VOR (VHF Omnidirectional range) beacon used for navigation. The base level of this of this stack ranges from 7000ft – 16,000ft AMSL but with aircraft departing the stack and descending down to other airports from 6000ft AMSL. This is why our aircraft that continue to follow the SID up to 5000ft and do not get further climb instructions as 1000ft separation is the minimum amount of co-ordinated separation between two air traffic controllers in the UK. Furthermore, Aircraft must have at least 5 miles lateral separation from any other aircraft or 3 miles if on the same frequency or under co-ordination between two controllers.

In figure 5 below, the purple shaded area represents an estimated location of the Bovingdon stack (estimated and not to scale). The base level of Bovingdon has a lower limit of 7000ft AMSL with aircraft arriving at other London airports being released to 6000ft.

Bovingdon Example Runway 25

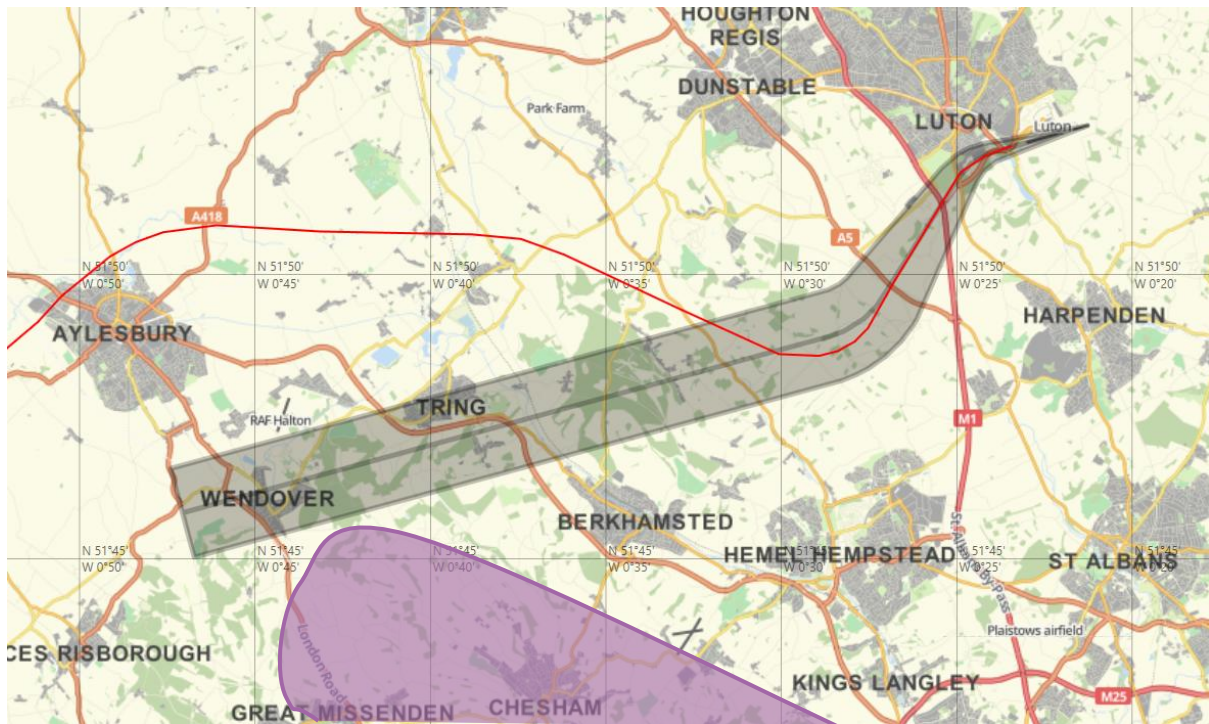


Figure 5: Example of Runway 25 RODNI 1B SID avoiding Bovingdon Restriction (Source: LLA, 2025)

Figure 5 demonstrates an aircraft (red line) departing Runway 25 on the RODNI 1B SID. Rather than carrying on travelling the SID, the air traffic controller has decided to vector them north west to enable the continuous climb around Bovingdon (estimated location and not to scale). Raising the NPR altitude would require the aircraft to continue along the NPR and hold at a lower altitude to maintain safe separation from the Bovingdon Stack. This lower hold of altitude would result in less continuous climb and greater impact on communities below by continuing for longer rather than being vectored early, avoiding restrictions and continuing climb.

Engagement

LLA have engaged with NATS London radar to receive input from an operational perspective.

A change to 4000ft for the NPR on the SIDS during daytime would reduce flexibility for our ATCOs when managing Luton departures against other London TMA traffic. This could result in reduced continuous climb performance and more aircraft levelling off, impacting our sustainability performance. This would be due to controllers having a reduced ability to vector aircraft away from conflicting traffic.

Engagement with airlines has highlighted that to reach 4,000ft whilst remaining within the NPR may be challenging. The departure routes are difficult for aircraft to navigate and in particular runway 07 OLNEY route aircraft would be required to complete a more northerly track, resulting in a sharper turn. A potential concentration of flights could be resulted and change of tracks over the ground, reinforcing the need for an airspace change proposal to be required.

Other airspace projects

If LLA were to raise the NPR base levels it may lead to a change in tracks over the ground. Therefore, this would require an airspace change proposal in line with CAP1617 – Planned and Permanent Redistribution of Air Traffic (PPR). The timelines for this would likely see the change implemented in 2028 / 2029 and would likely cause regulatory concerns with RNAV Substitution implementation outlined below. This additional airspace change proposal may cause additional delays to these other ongoing projects. Along with the introduction of UKADS and upcoming changes to airspace network, by the predicted timeline the implementation of this proposal may not see completion due to wider airspace change and negate its need.

DVOR Rationalisation (RNAV Substitution)

LLA is currently undertaking a project to reduce their dependency on ground-based navigation as per direction from the National Air Traffic Management Advisory Committee (NATMAC). This strategy was announced in 2008 and airports across the UK have been working towards this from 2021 when the CAA released a policy enabling airports to do so. This is a short term effort to ensure operational safety and proficiency until future airspace change brings new changes.

This process will see LLA substitute its current ground-based conventional departure routes to satellite RNAV1 departure procedures. LLA are complying with all safety requirements and ensuring that this does not change how aircraft depart the aerodrome.

Details of this will be published on the CAA Airspace Portal, but will not be publicly consulted (as it is not anticipated to be a change in tracks over the ground). Details of this can be found here: [CAA Airspace Change Portal](#).

UKADS

LLA continues to focus on the objectives in the Airspace Modernisation Strategy (CAP1711) and is working with industry partners to deliver modernised airspace in the London Terminal Manoeuvring Area (LTMA).

The Future Airspace Strategy Implementation- South (FASI-S) programme will be replaced by the UK Airspace Design service (UKADS) which is a singular organisation that will lead all airspace changes within the LTMA. This service will be operated by NATS (En route) PLC (NERL) and would be responsible for delivering all FASI-S airspace changes. The aim of this service is to deliver airspace change resulting in a change of the LTMA network and reducing conflicts in the airspace. This would allow numerous benefits including a reduction of carbon emissions, improved efficiency and resilience, improved safety and integration of new technology such as drones.

Conclusion

LLA committed to exploring the potential of increasing the vertical altitude bases of its NPRs as part of the 2024 - 2028 Noise Action Plan, but after considering various factors, LLA does not believe it is feasible within the current airspace setup. LLA has also engaged with NATS and airlines in order to understand any operational concerns with this proposal and is detailed in this report.

LLA's current track violation procedure continues to encourage compliance for our departure aircraft. In 2026, LLA raised fines for track violations in line with our commitment to work on reducing the number of these as well as our continued engagement with airlines through committees such as FLOPC.

LLA's specific reasons for this decision, including impact to performance and safety, are:

- Less flexibility available for air traffic controllers to give further climbs due to current design of the LTMA and challenges for airlines. Continuous climb allows aircraft to avoid level flight and climb quicker for longer. This operation can be seen for the benefits of noise, emissions and fuel burn.
- Maintaining deconfliction with other aircraft and routes remains the responsibility of ATC. The importance of this highlights the safety and operational challenges that this proposal could bring to air navigation.
- Potential impact to current airspace change proposals and any future proposals under UKADS who will provide wider joint airspace changes therefore negating the need for this proposal in the future.

