



Noise Impact of Late Running Aircraft into the Night

Final Report

LONDON GATWICK NOISE MANAGEMENT BOARD | Programme Steering Group

January 2026

The information provided in these slides specifically refers to the London Gatwick NMB, and should strictly not be re-purposed, taken out of context, or misused.



LONDON GATWICK



Content

1. Introduction
2. Delays at London Gatwick
3. Factors that impact on-time performance
 - Airspace
 - Taxi & Turnaround
 - Terminal
4. Delay case studies
5. Delay mitigation
6. Improving on-time performance at London Gatwick
7. Summary & next steps

Introduction



Introduction

Key stakeholders

Preventing delay is critical to all stakeholders, and everyone has a role to play

Delays impact crew and resource allocation and can have a knock-on impact on other operators
Ground Handling Providers

Delays can lead to increased fuel burn and emissions from holding/taxiing
Airlines

Delays directly increase operating costs and reduce customer satisfaction
Airlines

Airports rely on smooth throughput and efficient use of infrastructure. Delays can harm reputation and increase congestion
Airports

“All the players in aviation, including airlines, airports, air navigation service providers (ATC), the military, national regulators, the European Commission (and its agencies) and EUROCONTROL work hard to make sure that long delays are avoided and that flights are safe, efficient, environmentally responsible and time.”



Unplanned delay can impact airspace capacity and efficiency
Air Traffic Control (ATC)

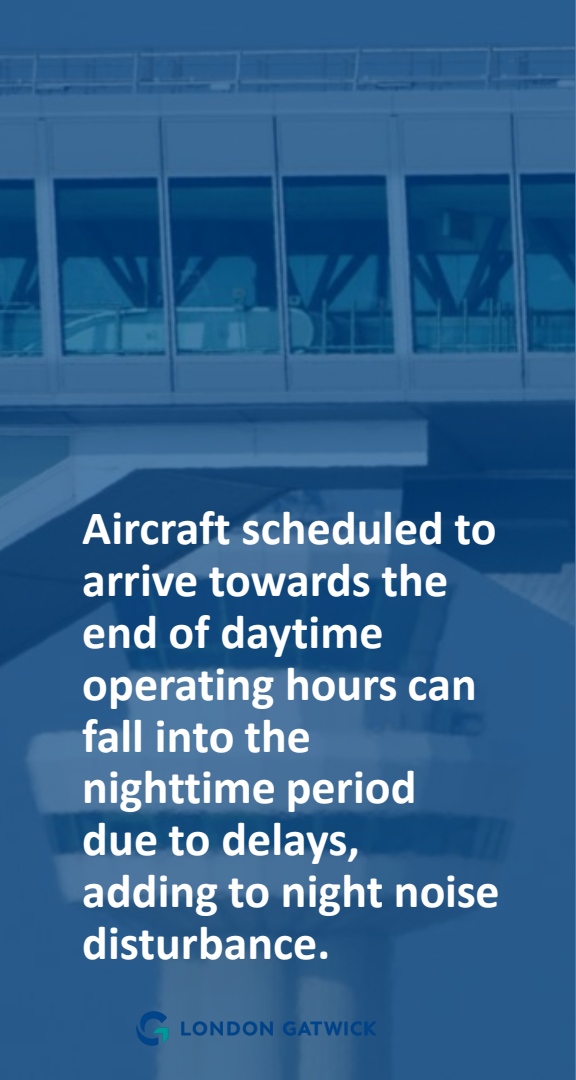
Delay can impact system efficiency and regulatory performance targets (e.g. EU SES performance scheme)
Air Navigation Service Providers (ANSPs)

Inconsistent and prolonged noise exposure (from holding aircraft), particularly in unsociable hours, can impact quality of life
Local Communities

Shipments of cargo can be delayed, damaging the local economy
Businesses and Cargo Companies

Delays can damage the economic competitiveness of the aviation sector and can hinder achievement of environmental and noise targets
Regulators and Governments

Delays cause missed connections, extra cost and frustration, and can give a negative impression of the system's reliability
Passengers



Aircraft scheduled to arrive towards the end of daytime operating hours can fall into the nighttime period due to delays, adding to night noise disturbance.

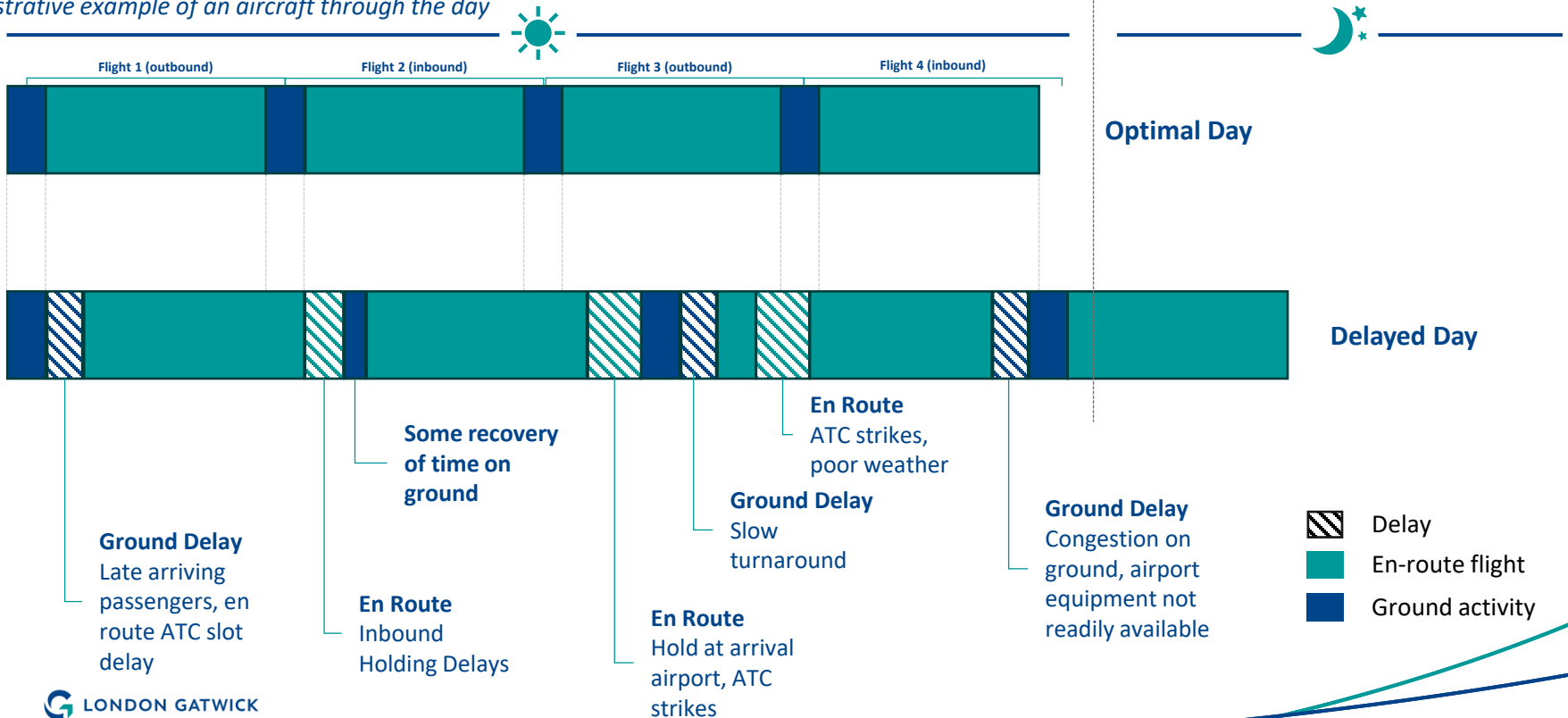
Project scope and objective

- Aircraft noise can be particularly disturbing at night and may interrupt sleep.
- Delays through the day can compound and lead to a daytime flight falling into the nighttime period.
- The purpose of this Noise Management Board initiative is to investigate factors behind delays and identify any actions that are being taken, or could be taken, to prevent aircraft being delayed into the night period.
- The ‘Noise Impact of Late Running Aircraft into the Night’ project aims to:
 - Understand late running aircraft trends
 - Identify causal factors of delay
 - Identify existing mitigations and initiatives in place to help reduce delay
 - Identify if more can be done at London Gatwick to help reduce late running aircraft into the night period
- To achieve this, the project draws on research, analysis and stakeholder discussions to understand the current environment and the factors that contribute to delay.

Introduction

Delays can compound through the day, and can lead to unplanned nighttime arrivals

Illustrative example of an aircraft through the day



Delays at London Gatwick



Observed trends at London Gatwick in 2024

Source data*:

- Nighttime arrivals (23:30-06:00)
- Jan-Dec 2024 (inclusive)
- Total number of nighttime arrivals in 2024: 12,564

Identified Trends



In the early hours of the night period (i.e. 23:30-00:00), the number of late runners is at its highest

- This can result from an accumulation of delay through the day, leading to aircraft arriving at the start of the night period.



Some aircraft arrive before their scheduled slot in the morning thus falling into the night period (i.e. 05:00-06:00)

- Aircraft arriving earlier than expected can cause a knock-on effect to scheduled slots. Long-haul flights tend to dominate this, and factors such as en route winds and time zone differences can play a part.
- In total, 34% (4,198 flights) of nighttime arrivals in 2024 were unplanned
 - 68% (1,845 flights) of these arrivals landed between 23:30-00:30
 - 25% (2,058 flights) of these arrivals landed between 00:31-04:59
 - 7% (295 flights) of these arrivals landed between 05:00-06:00

There is a cap on the number of flights that can operate during the night period at Gatwick (3,250 in Winter and 11,200 in Summer movements, meaning arrivals and departures). This is set by the Department for Transport.



The summer season typically had a greater number of unplanned flights through the night compared to the winter**

- The network is busier in the summer, which can cause a higher volume of flights to be delayed when issues occur.



There are more early arrivals (between 05:00 and 06:00) in the winter compared to the summer

- Time zone variations and varying winds across the Atlantic can drive early arrivals in the Winter.
 - 33% (3,327 flights) of nighttime arrivals were unplanned during the summer period
 - 72% (2,387 flights) of these arrivals landed between 23:30-00:30
 - 2% (79 flights) of these arrivals landed between 05:00-06:00
 - 36% (871 flights) of nighttime arrivals were unplanned during the winter period
 - 54% (471 flights) of these arrivals landed between 23:30-00:30
 - 25% (217 flights) of these arrivals landed between 05:00-06:00

*Data sourced from IDAHO has been used to calculate movement numbers for this report. Results may therefore differ from ANOMS sourced data used across some other London Gatwick noise data monitoring, due to the nature in which the information is captured and processed. This does not alter the validity of the data within this report or elsewhere.

**Note: Summer runs from the last Sunday in March to the last Saturday in October.

Winter runs from the last Sunday in October to the last Saturday in March.

Delays to London Gatwick Traffic in 2024

Causes of Delay

Weather Impacts

Weather was a major cause for delay across the European Network, including London Gatwick, in 2024. Variable winds across the Atlantic can drive early arrivals in the Winter.

Strikes and Outages

Strike action and IT outages accounted for a significant amount of delay in 2024. This typically causes delays that are out of London Gatwick's control and require airline and ATC coordination.

Origin regions and airports

There are hotspots for delays. This can cause aircraft to miss departure slots at the origin airport thus leading to delayed arrival at their destination. Busy European airports drive a lot of the delayed night arrivals. This is more significant during the summer period when the holiday period is at its peak.

Airspace Closures

Arrivals are impacted by airspace closures, capacity restraints and restrictions across the world. A vast amount of airspace is currently closed due to ongoing political crises.

Airline Impacts

Late running first wave aircraft can cause knock-on impacts, and tight scheduling can increase the risk of knock-on delay.

Delays to London Gatwick Traffic in 2024

Eurocontrol Data

Definition of On Time and Delayed

On-time performance is the measure of aircraft taking off on time. This is measured by the number of aircraft arriving (or departing) early or up to **15 minutes** late.

A **delayed** flight is a flight that arrives or departs over **15 minutes** from its scheduled time.

In 2024, weather was the main contributor to delays at London Gatwick. This effect was more noticeable in the winter months.

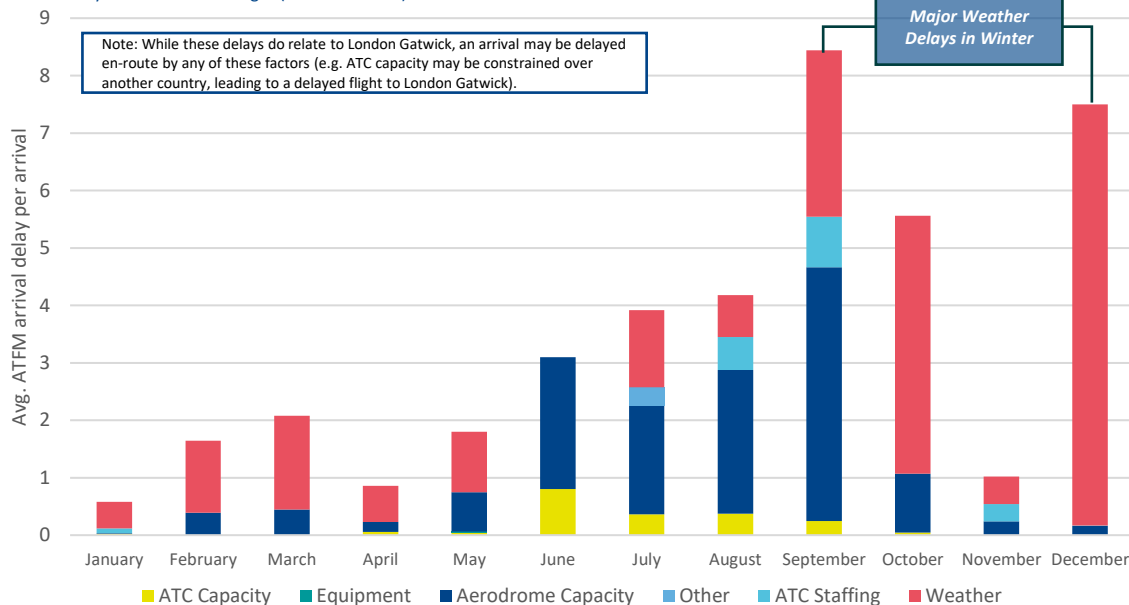
2025 has seen vast improvements to ATFM delay, with Weather and Aerodrome Capacity delays to London Gatwick being significantly reduced through the year.

Air Traffic Flow Management (ATFM)
ATFM delay measures the amount of capacity shortfall in an airspace due to high-demand and/or capacity reductions.

$$\text{ATFM Delay (mins) per flight} = \frac{\text{2024 Minutes of En-Route ATFM Delay}}{\text{Number of flights}}$$

ATFM Arrival Aerodrome Delays to London Gatwick (2024)

Air Traffic Flow Management (ATFM) delay is defined as the duration between the last Estimated Take-Off Time and the Calculated Take-Off Time allocated by the Network Manager (EUROCONTROL).



Source: EUROCONTROL airport arrival ATFM delays - (with post ops adjustments), Aviation Intelligence Portal

Factors that impact on-time performance



Factors that impact on-time performance

Delay can occur at different points during a flight's itinerary

Delay focus areas

Delay can manifest on a flight's itinerary for many reasons. Any single event can have a major knock-on and cumulative effect on subsequent flights, resulting in late running aircraft.

To help explain causes of delay at Gatwick (and other airports in general), we have split a flight's itinerary into four focus areas:

	What it is	Who is primarily responsible
Airspace	Delays linked to the operation of a flight into or out of the airport	ATC
Taxi	Delays linked to the movement of aircraft on the ground	Airport <i>(at London Gatwick, NATS/ATC control the aircraft whilst the Airport owns the infrastructure)</i>
Turnaround	Delays linked to the loading and unloading of an aircraft with passengers and cargo	Airline
Terminal	Delays linked to passengers and baggage moving through the airport to the aircraft	Airport

Note: Whilst delay can occur in the airport terminal thus impacting a passenger's experience, this has minimal impact on an aircraft's total delay. Terminal processes are decoupled from aircraft processes – see pages 25 and 26 for further detail.

Factors that impact on-time performance

Multiple stakeholders are involved across each step of the process

The process below excludes enroute airspace, focusing only on TMA airspace and airport ground processes.

Level of involvement has been rated as 'Not Applicable (NA)', 'medium' or 'high'.

	Airspace	Taxi	Turnaround				Taxi	Airspace
Stage of Operation	Approach / landing	Taxi-in	Arrival and disembark	Unload and clean	Refuel, Cater, maintain	Board and load	Pushback and taxi-out	Take-off/ departure
ATC	High	High	NA	NA	NA	NA	High	High
Airport (A-CDM)	High	High	NA	NA	NA	NA	High	High
Ground Handling Agent*	NA	NA	High	High	High	High	High	NA
Aircraft Services (catering, fuelling)	NA	NA	NA	High	High	NA	NA	NA
Aircraft Crew (pilots, cabin crew)	Medium	Medium	Medium	Medium	Medium	Medium	Medium	Medium
Maintenance/ Engineering	NA	NA	NA	High	High	NA	NA	NA
Passengers	NA	NA	High	NA	NA	High	NA	NA

* Ground Handling Agent's are employed by airports and/or airlines to provide services for flights. At London Gatwick, airlines contract their own Ground Handling Agents.

Airspace
Responsible: ATC

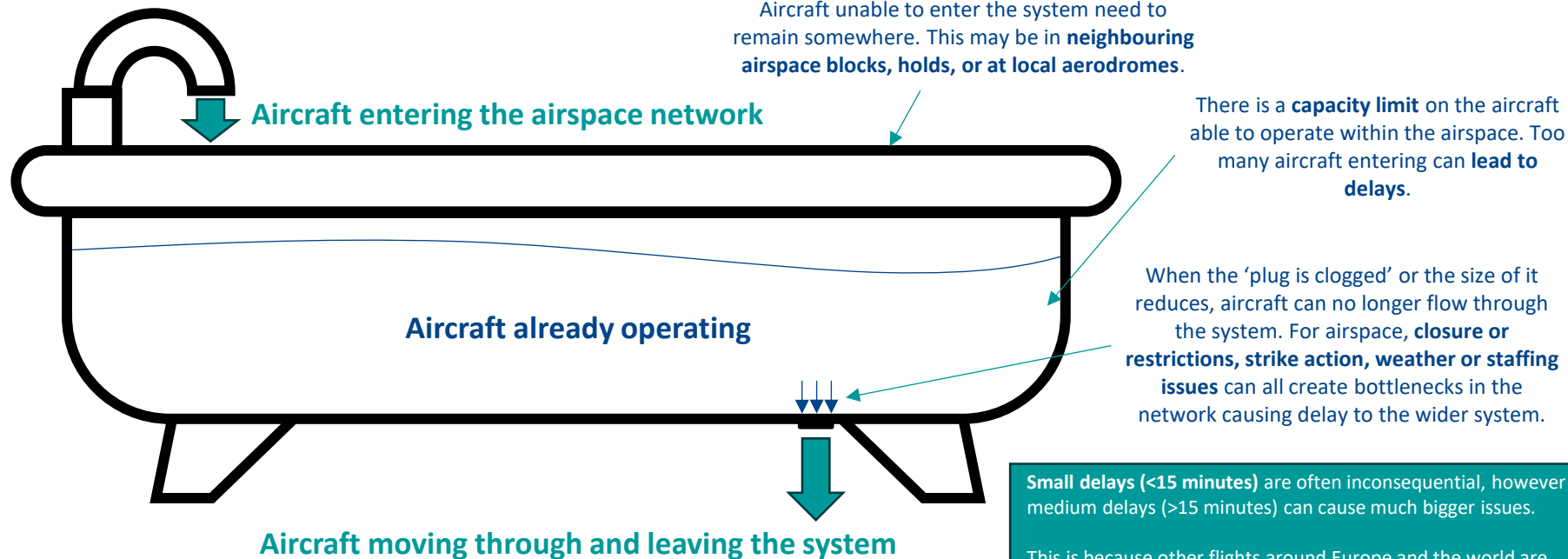


Factors that impact on-time performance

Balancing airspace capacity with demand

Airspace capacity varies with demand; the higher the demand (i.e. more aircraft in the sky), the less 'free airspace' capacity. Where airspace is restricted or closed, capacity reduces for the same demand load leading to delays and cancellations.

Bathtub Analogy



Small delays (<15 minutes) are often inconsequential, however medium delays (>15 minutes) can cause much bigger issues.

This is because other flights around Europe and the world are already allocated into a constrained network.

A delayed flight, at short notice, may struggle to be slotted into limited available airspace, especially where there are big peaks in demand.

Factors that impact on-time performance

En-route airspace constraints

What can cause delay within an airspace block?

An *airspace block* is a portion of an airspace used by ATC to provide navigation services in.

Sector capacity constraints

- There is a maximum number of aircraft that can be safely managed at once in a given airspace block. If **demand exceeds capacity**, flow restrictions or holding patterns may occur.
- Some airspace blocks are **more complex** (e.g. due to the number of routes and aircraft passing through) which can lead to reduced available capacity in these areas.

Weather

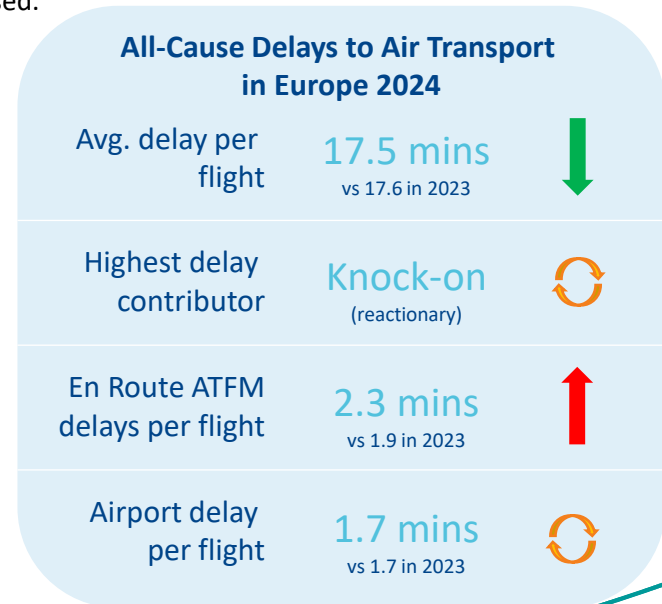
- Poor weather such as thunderstorms can force ATC to reroute aircraft, increasing flight time.

Network effects

- Airspace blocks adjacent to those with closures can become more congested as aircraft are re-routed through these instead.
- Staffing shortages (through employment or strike action) can reduce sector and therefore network capacity and create knock-on delays across the system.

European Trends in 2024

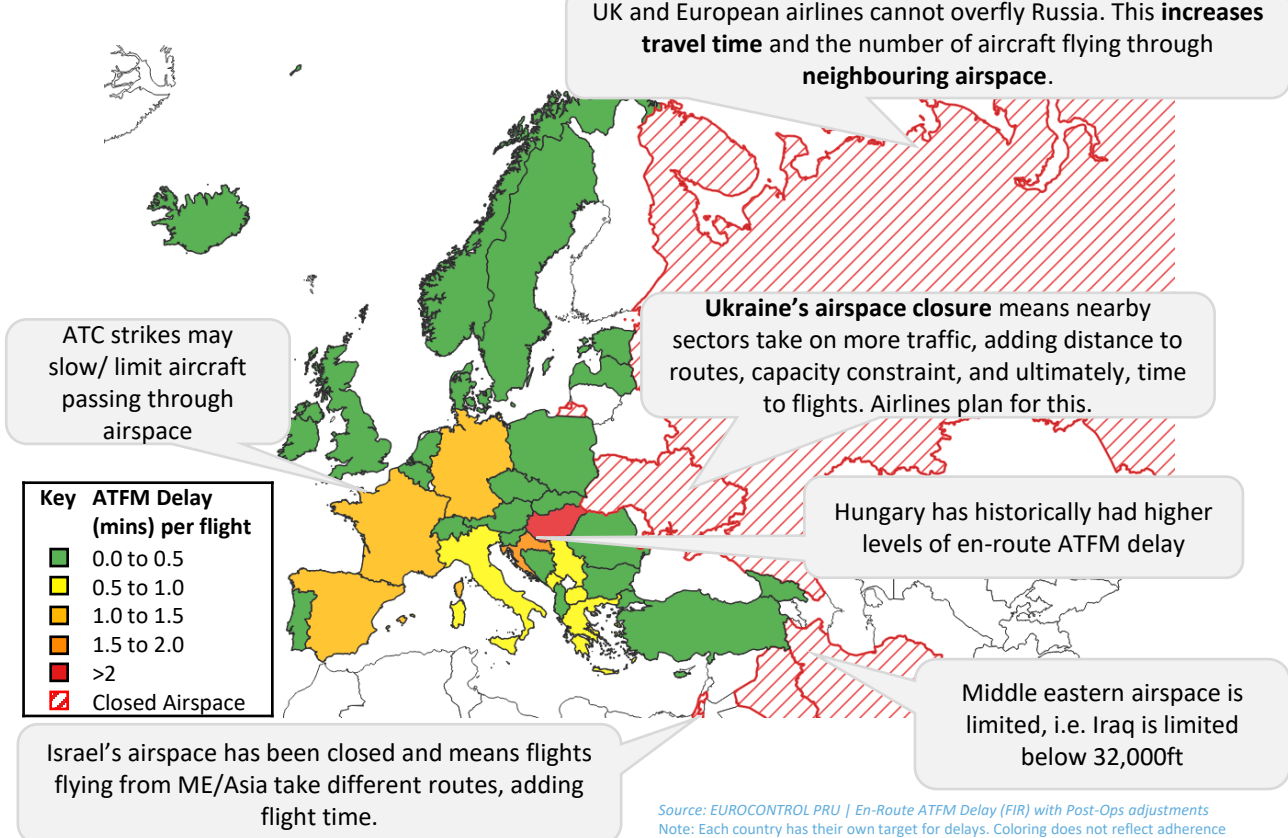
Factors outside of London Gatwick's control, and airports in general, are often the root cause of delays leading to late running aircraft. Weather was a significant cause of delay in Europe in 2024, and while the average delay per flight marginally fell, the average en-route ATFM delay increased.



Factors that impact on-time performance

European airspace constraints

En-route ATFM delays in Europe are driven by closed airspace, rerouting, strikes, and capacity hotspots.



Air Traffic Flow Management (ATFM)

ATFM delay measures the amount of capacity shortfall in an airspace due to high-demand and/or capacity reductions.

$$\text{ATFM Delay (mins) per flight} = \frac{\text{2024 Minutes of En - Route ATFM Delay}}{\text{Number of flights}}$$

What does this show?

ATFM delay measures the amount of capacity shortfall in an airspace due to high-demand and/or capacity reductions. This means aircraft passing through the airspace can be delayed, resulting in late arrival at their destination. These delays can compound throughout the day.

A vast amount of airspace is currently closed due to ongoing geopolitical crises.

Hotspot tourist destinations (Spain and Greece) experience high en-route ATFM delays. Popular destinations such as France and Germany also face delays.

ATC strike action impacts traffic flow, thus causing delay.

Source: EUROCONTROL PRU | En-Route ATFM Delay (FIR) with Post-Ops adjustments
Note: Each country has their own target for delays. Coloring does not reflect adherence to each state's EN Route ATFM delay targets

Factors that impact on-time performance

Flight radar examples



Factors that impact on-time performance

Industry influence on airspace delay

Airspace design can help to improve flight efficiency and avoid delays

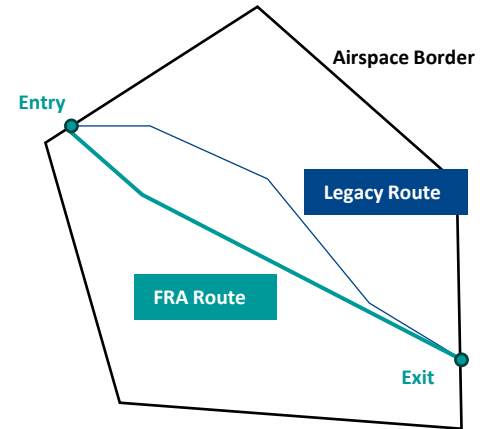
- En-route airspace at higher levels can help to improve flight trajectories and the route they navigate through the sky.
 - Changes to French airspace, for example, may help to increase the number of points aircraft can enter the UK from, reducing the number of bottlenecks.
- Countries can work collaboratively to improve airspace efficiency for example by allowing 'Free Route Airspace' (FRA).
 - This lets the airline/operator decide the best route to fly between an entry and exit route at higher altitudes.
 - This means aircraft can fly the shortest route, rather than the instructed route, saving time, fuel and reducing carbon emissions.
- Some countries share parts of their airspace in groups called Functional Airspace Blocks, helping airlines to fly the most efficient routes.

However, delays are difficult to fully prevent due to external factors.

Unknown delay can be difficult to manage

- Unknown delay caused by weather, staffing, strikes and cyber attacks often result in major network disruption, and there is little ATC can do to influence this.
- Airlines and airports have limited influence on delays that originate from en-route airspace.
- The UK's geographical proximity to France places a disproportionate reliance upon French ATC services, which has encountered significant issues in recent years.

Example of Free Route Airspace



Taxi & Turnaround

Responsible: Airport & Airlines



Factors that impact on-time performance

Taxi & turnaround delay

As the day progresses, small taxi and turnaround inefficiencies can compound into significant delay. There is limited recovery time built into the process, exacerbating the issue.

By the end of the day, even minor mismatches in crew, ground handling resources, aircraft, or stand availability can lead to widespread departure and arrival delay.

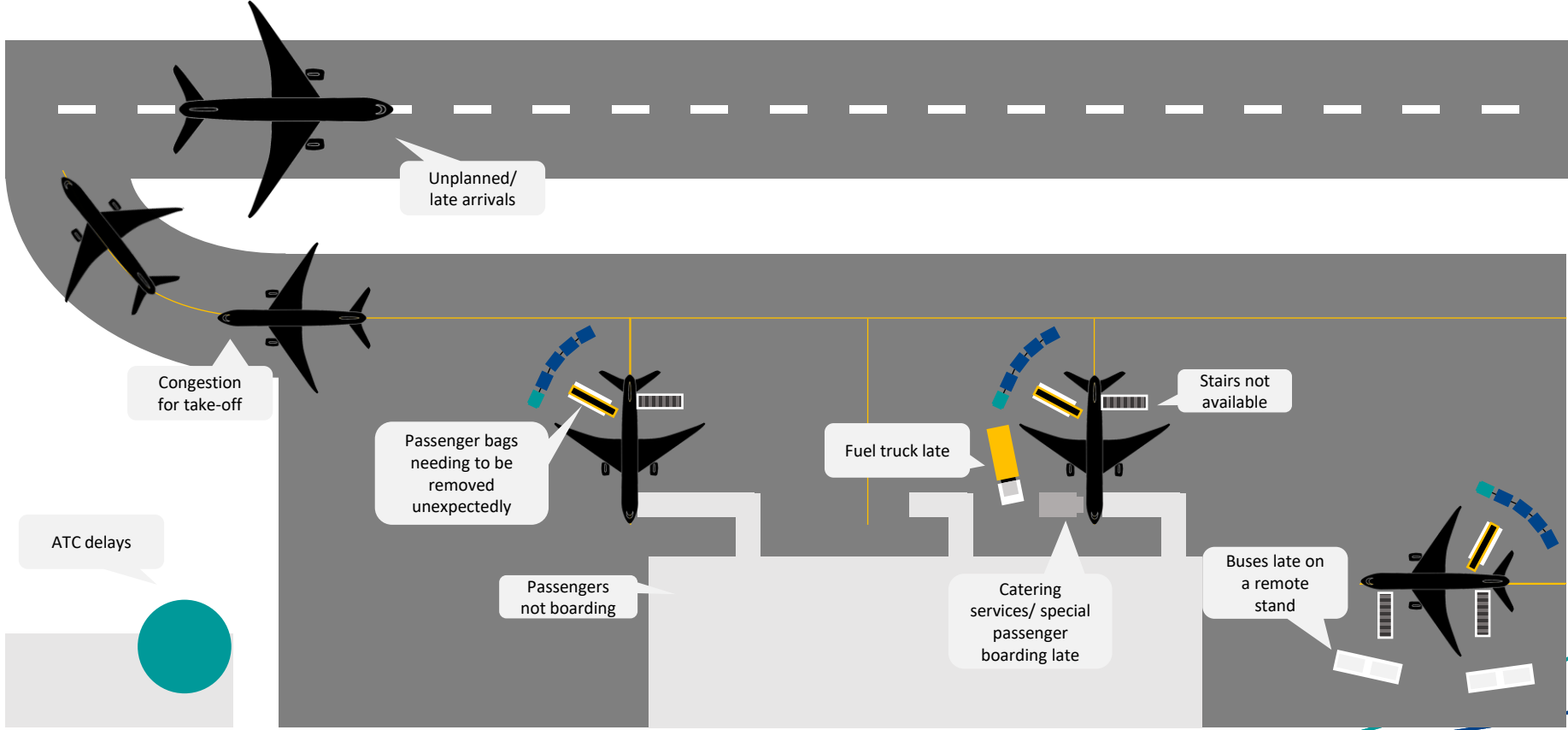
What causes delay at an airport?

Arrival → Taxi-in → Turnaround → Pushback → Taxi-out → Take-off

Phase	Common Delay Drivers
Taxi-in	Stand occupied by late departing aircraft, ramp congestion, low-visibility procedures.
Turnaround	Late inbound aircraft, misaligned ground-handling schedules, crew changeovers, refuelling or loading delays.
Pushback	No clearance due to stand/taxiway congestion, towing delays, ground staff rotation gaps.
Taxi-out	Queues for runway, single-runway constraints, other aircraft limiting throughput.
Take-off	Flow-rate restrictions from ATC, missed slots, arrivals approaching or on the runway.

Factors that impact on-time performance

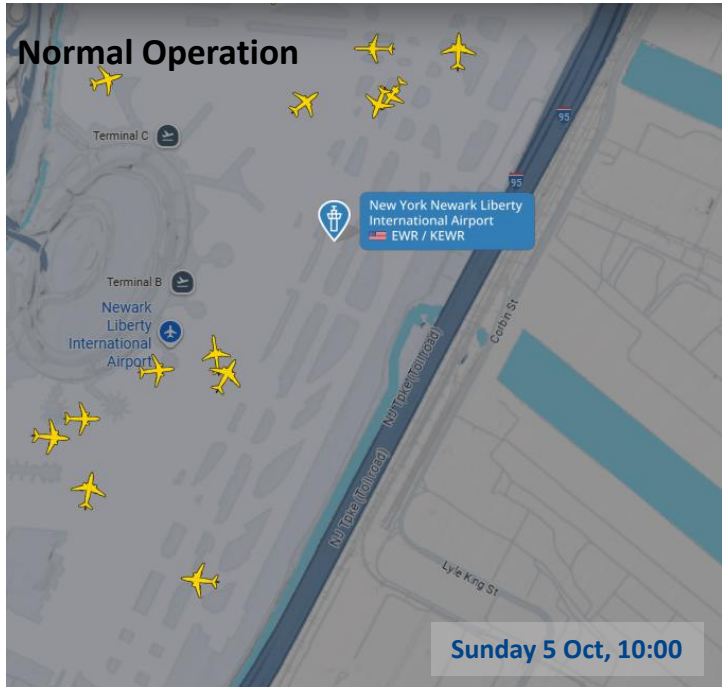
Singular events at an airport can lead to knock-on delays for a flight



Factors that impact on-time performance

The taxiing operation is dependent on ATC capability to provide services

Example: A recent Government shutdown in the USA led to an ATC shortage. This caused major delays to aircraft taxiing to runways at US airports (and subsequently their take-off). Delays like this can cause a knock-on impact on aircraft arriving in the UK, leading to nighttime arrivals.



USA air traffic control (the FAA) released a Notice to Airmen (NOTAM) announcing delays averaging 165mins at Newark Airport and increasing, citing staffing as the main driver for this on 9 Nov.

Staff shortages can have impacts beyond the airport/country the issues are centred at.

Factors that impact on-time performance

Industry influence on taxi and turnaround delay

For an aircraft to be on-time, industry stakeholders must work together to ensure safe and efficient arrival, turnaround and departure

Taxi – Air Traffic Control

- Both Air Traffic Control and the airport are responsible for the throughput of aircraft on the Taxi.
- Air Traffic Control (ATC – at London Gatwick is NATS) manage the movement of aircraft on the ground.
- They issue instructions for the pilot to follow a route to and from the runway and stand.
- They manage the sequence of aircraft on the ground, to minimise congestion and maintain flow.
- They help airlines achieve their planned departure time thus minimising delay.

Taxi – Airport

- The airport is responsible for managing and monitoring the infrastructure needed for the taxi operation, i.e. taxiway and signage.
- Apron Control will assign aircraft gates/stands for airlines to park at, and will communicate this to ATC.
- The airport will monitor the runway and taxiway conditions for any issues and will; report this back to ATC (who will inform airlines on arrival/departure).
- Airports will monitor the target departure and off-stand time, and will provide other stakeholders this information through ACDM (Airport Collaborative Decision Making).

Turnaround – Airlines

- The airline (captain) is responsible for overseeing the turnaround process, which is conducted by Ground Handling Agents.
- Flight crews complete technical and safety checks during the turnaround to ensure the aircraft is safe and fit for any follow-on leg. Issues identified at this stage could cause a delay or cancellation.
- The airline is accountable for on-time performance of the turnaround and can influence efficiency through effective planning.
- Airlines have written processes and standards that must be met.

Terminal

Responsible: Airport



Passenger and system delays in the airport

Where do delays occur in the airport?



Passenger processing bottlenecks

- Check-in and bag drop queues
- Security screening delays
- Border control/ immigration queues



Baggage system and load process delays

- Baggage handling system issues
- Security



Airport Resource and Infrastructure

- Staff strikes or shortages in key areas such as passport control and security
- Availability of equipment (e.g. buggies) and infrastructure, (e.g. lifts, escalators, inter-terminal trains)



IT, systems and coordination issues

- Radio failures between airport areas
- Check-in/gate systems failure
- Cyberattacks on airport infrastructure

What knock-on effect can happen?



Can lead to aircraft being held for passengers, cascading delays to pushback.



Can lead to late loading of baggage onto the aircraft, cascading delays to pushback.



Can lead to delays in key areas such as security and border control, slowing passenger flow through the airport.



Can lead to delayed processing of passengers and baggage through the system, resulting in delayed flights.

Whilst delay can occur in the airport terminal, the frequency of occurrence is low given the protocols and back-ups in place to quickly and effectively resolve the issue.

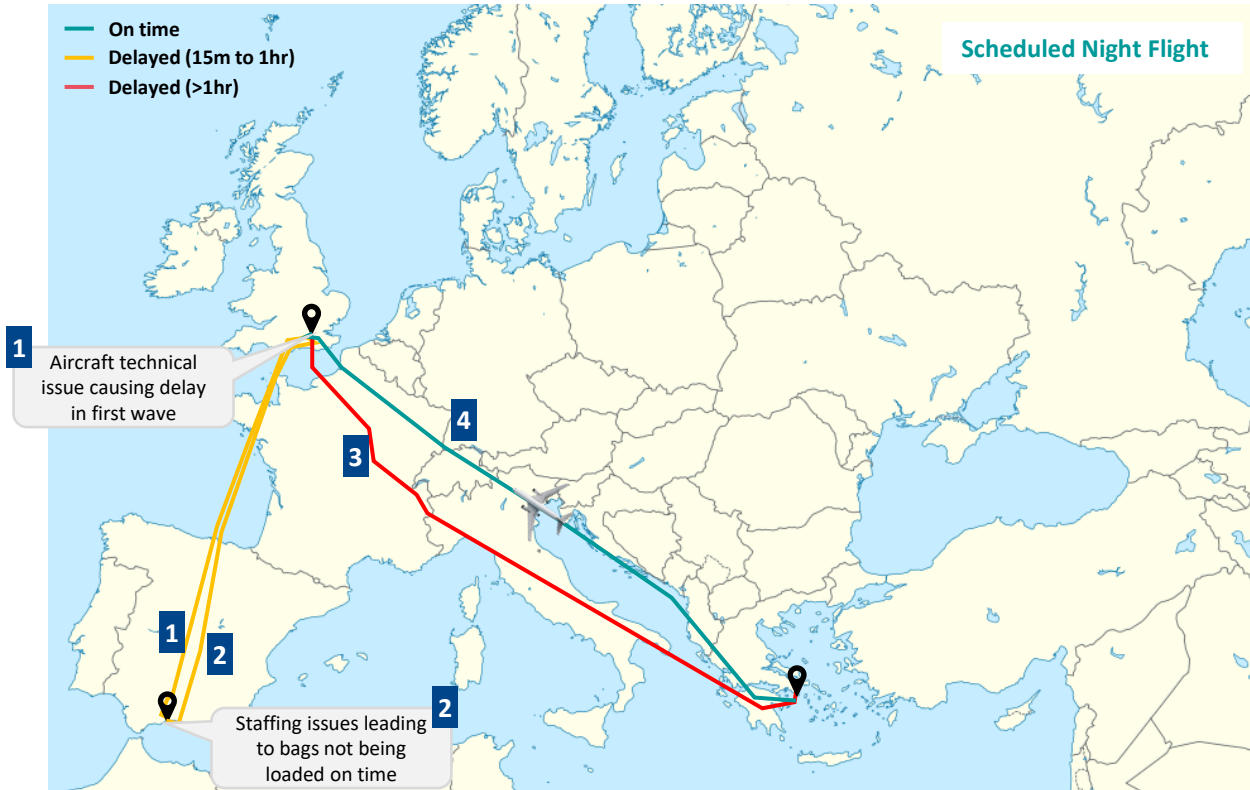
Terminal processes tend to be decoupled from aircraft processes. At London Gatwick, the Captain of the aircraft is responsible for deciding on whether to wait for late passengers and/or baggage. Their decision is influenced by the knock-on impact of any delay, and what this might mean for subsequent scheduled flights.

Terminal delay has minimal impact on an aircraft's total delay.

Delay case studies



Some flights can recover delay throughout the day, even when quite significant delays occur



1 LGW to APG | Gatwick to Malaga

The aircraft is scheduled to leave Gatwick for Malaga at 05:35, but leaves at 06:35. It arrives at 10:06 local time, 31 minutes later than scheduled (09:35 local)

----- Planned Turnaround Time: 1:10hr | Actual: 1:30hr -----

2 AGP to LGW | Malaga to Gatwick

The aircraft leaves Malaga 51 minutes late at 11:36 local time and arrives at Gatwick 26 minutes late. It has recovered some delay but is still behind schedule.

----- Planned Turnaround Time: 1:15hr | Actual: 2:20hr -----

3 LGW to ATH | Gatwick to Athens

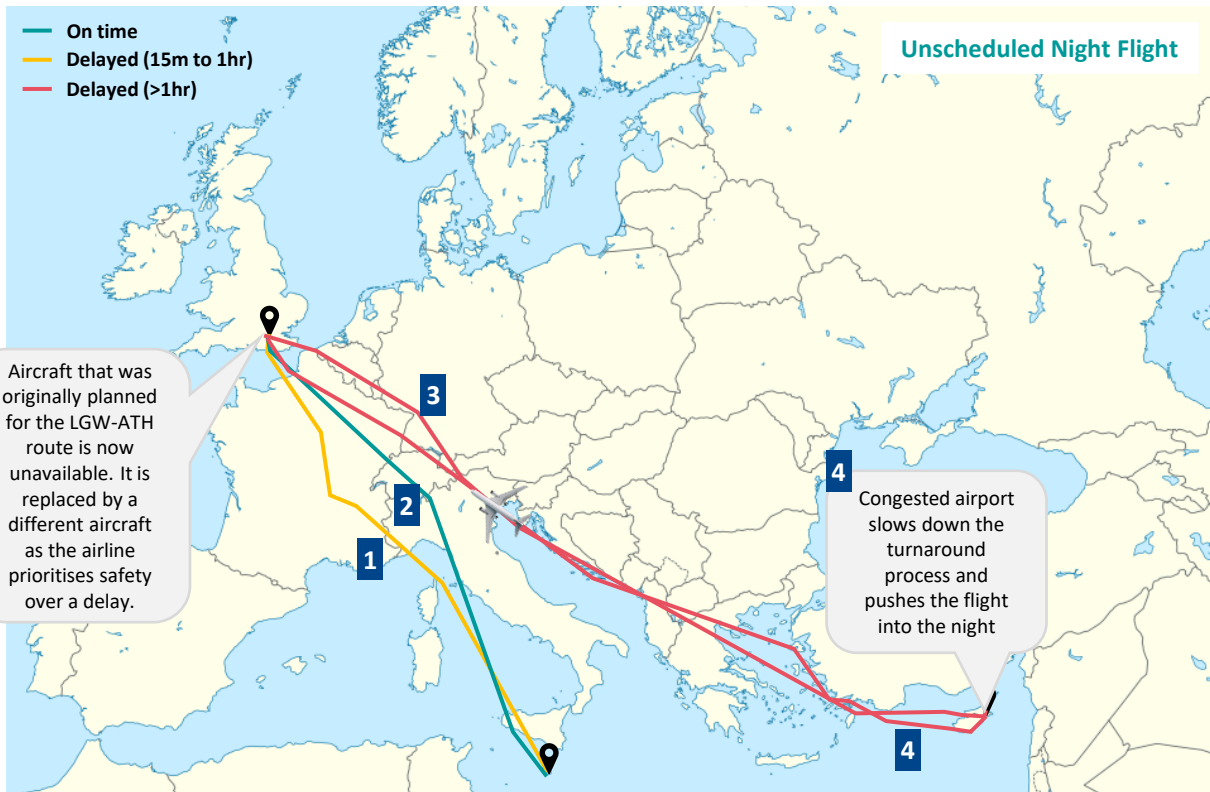
The aircraft leaves Gatwick 1.5 hours late (15:25 instead of 13:55). It lands at 21:32 local time, 1hr 47 minutes later than scheduled (19:45).

----- Planned Turnaround Time: 2:55hr | Actual: 1:21hr -----

4 ATH to LGW | Athens to Gatwick

The aircraft leaves Athens on-time (22:53 – scheduled 22:40) thanks to a longer planned turnaround time. Delay is recovered and the flight lands at Gatwick early at 00:08 local (scheduled 00:35).

Technical issues can lead to significantly delayed flights



1 LGW to MLA | Gatwick to Malta

The aircraft leaves Gatwick slightly late, (06:42 instead of 06:25), but arrives in Malta 27 mins early (10:18 local time)

----- Planned Turnaround Time: 0:50hr | Actual: 1:28hr -----

2 MLA to LGW | Malta to Gatwick

The aircraft leaves Malta on-time (11:46 local instead of 11:35), and arrives slightly early into Gatwick (14:42 instead of 13:50).

----- Planned Turnaround Time: 0:50hr | Actual: 2:17hr -----

3 LGW to ATH | Gatwick to Athens

The aircraft leaves Gatwick well over 3 hours late. The aircraft for this flight is changed due to a technical issue. The flight arrives in Athens 3 hours 56 minutes late at 22:01 local time.

----- Planned Turnaround Time: 0:50hr | Actual: 1:34hr -----

4 ATH to LGW | Athens to Gatwick

The aircraft now leaves Athens after picking up more delay and arrives back to Gatwick at 02:01, despite being planned to arrive at 20:45. This is now an unplanned night arrival.

Delay mitigation



Steps to reduce the problem

How are delays mitigated?

Different delays can be managed in different ways. Ultimately, building resilience into the system is key to reducing the probability of delays. Any type of delay can lead to an unplanned night flight.

Type of delay

Description

Mitigation

1 **Reactionary (knock-on)**
When an aircraft, crew, or baggage arrives late, the next flight also departs late.

Airlines often build in small buffers between flights, prioritise getting the first flights of the day away on time, and use more flexible turnaround planning.

2 **Airline processes**
Activities handled by the airline include boarding, baggage loading/unloading, fuelling, catering, technical checks, and crew readiness.

Industry practice includes streamlining boarding, using digital systems to track baggage, planning for spare crew, and proactive maintenance.

3 **Airport processes**
Local airport operations, such as stand or gate availability, runway/taxiway works, or snow/ice clearing.

Use of ACDM (Airport Collaborative Decision-Making) so all partners share the same information, planning stand use in advance, and preparing winter operations plans.

4 **Air Traffic Flow Management (ATFM)**
When the European network slows flights down for safety or capacity reasons, multiple planes may want to land at the same airport at the same time.

EUROCONTROL and air navigation services (NATS) coordinate slots, sometimes delaying take-off to reduce holding in the air. Tools such as XMAN (Extended Arrival Management) help manage flows earlier.

5 **Weather**
Fog, storms, high winds or snow/ice can all reduce the safe capacity of airports and airspace.

Improved forecasting, seasonal plans for snow/ice clearance, and new landing procedures (e.g. Advanced Mixed Mode at London Gatwick) help to keep flights moving safely.

Night-time Risk Pathway

If morning flights leave late, each subsequent flight risks being delayed. By evening, this delay can compound causing aircraft to land in the night period.

A slow turnaround during the day reduces the buffer time before the next flight. If the buffer is used up and delay is incurred, aircraft could land during the night period.

If these issues delay aircraft earlier in the day, it can have a domino effect, resulting in arrivals continuing into the night.

Delays in the late afternoon or evening may impact aircraft scheduled to arrive in the day/shoulder period, causing them to land in the night period.

If poor weather hits during the day, delays can accumulate leading to late arrivals in the evening.

Steps to reduce the problem

How are delays mitigated? (cont.)

Type of delay

Description

Mitigation

Nighttime Risk Pathway

6 Airspace restrictions

Sometimes areas of airspace are closed (e.g. for military training or geopolitical reasons), which forces planes to take longer routes.

Civil and military authorities coordinate to release airspace, when possible (called “Flexible Use of Airspace”), and aircraft can be tactically re-routed. Functional Airspace Blocks (FABs) work together to help aircraft fly efficiently.

Longer routes flown in the day could result in an unscheduled night arrival, especially if external events cause issues.

7 Technical or system outages

Failures in air traffic control systems, airport systems, or power supply can reduce capacity. These are rare but can be serious.

Backup systems, contingency procedures, and coordination by the EUROCONTROL Network Manager limits the disruption when this occurs.

If outages happen in the day, flights may bunch up and subsequently arrive during the night period.

8 Industrial action

Strikes by air traffic controllers or ground staff that reduce the ability to handle flights.

Advanced planning, schedule adjustment, and coordination across countries to spread out demand.

Strike disruption often displaces flights, causing major delays and an increase in night flights.

9 Security processes

Delays at security or immigration/border control, usually smaller in scale than other causes.

Extra staffing at peak times and joint planning between agencies.

While less common, long delays can extend aircraft turnaround, contributing to knock-on effects later in the day. It remains the choice of the airline/captain as to whether to delay a flight to wait for passengers or not.

Improving on-time performance at London Gatwick



Initiatives at London Gatwick targeting delay

On-time performance has improved substantially during 2025 when compared to 2024

Initiatives Delivered in 2025 by London Gatwick

- Full implementation of A-CDM, effective from 23 June 2025 (see page 35).
- Deployment of Time-Based Separation has improved the reliability of runway performance and reduced London Gatwick Arrival 'regulation' since 6 March 2025.
 - Regulation is where a flight is held to ensure that later in the route there is sufficient capacity, or space, for the aircraft to be handled by air traffic control – this is an air traffic control measure and a deliberate 'delay'.
- Introduction of tool support to enable Reduced Departure Separation when two departures are initially on the same route as each other, preventing aircraft having to wait longer on the ground.
- Strengthening of Tower Resource Resilience has reduced arrival 'regulation'.
- Collaborative work with easyJet to improve turnaround performance.
- Targeted Airline engagement on First Wave performance.

Planned Initiatives for 2026

- Iterative calibration and improvement of Time-Based Separation to optimise runway performance.
- Continued refinement and integration of A-CDM processes, particularly for thunderstorms.
- Continuing collaborative work with the airlines and ground handler communities to improve first wave and turnaround performance.
- Launch of a SMART Stand pilot to reduce dependencies during the arrivals process (see page 36).
- Opening of Taxiway Echo - the extension of the Echo Romeo rapid exit taxiway - which will help improve runway performance.

Initiatives to improve on-time performance at London Gatwick

ATC Measures for Arrivals



Time-Based Separation



- NATS now separate aircraft by time instead of distance, which improves landing rate predictability.
- This can cut the amount of time aircraft spend holding in the air. A stable landing rate aids on-time departure, which subsequently prevents delay across the system.
- London Gatwick is the world's first airport to implement this on a mixed-mode (arrival and departure) runway.

Layout improvements for landing aircraft



Rapid Exit Taxiway



- Previously, some aircraft would narrowly miss the first taxiway to exit the runway (i.e. due to weather), leading to the aircraft travelling slowly along the runway to the next exit taxiway. This could take up to 20 seconds.
- London Gatwick opened a new Rapid Exit Taxiway in 2024, located closer to the first exit, to help aircraft leave the runway more efficiently thus increasing resilience, reducing delays, and limiting carbon and noise emissions.

Collaboration with other airports



A-CDM



- Airport Collaborative Decision-Making aids collaboration between airport teams by sharing real-time information, helping to understand when flights are arriving and departing.
- It reduces delay by ensuring aircraft, crews, and ground services are ready at the right time.
- If a problem occurs, A-CDM allows quicker, better-informed decisions and improved coordination to keep flights running on time.

Monitoring the turnaround: Smart Stand trials at London Gatwick

London Gatwick is trialling new Smart Stand technology, which could revolutionise the way aircraft turnarounds are managed.

- The Smart Stand technology allows aircraft turnarounds to be managed from a central control room, including safe entry onto stand, jet bridge operations, door control and event monitoring.
- By enabling more efficient turnaround times, the Smart Stand is designed to enhance safety procedures, improve stand utilisation, maintain punctuality, and improve passenger experience.
- The trial will run until Summer 2026.
- By allowing jet bridge operators to manage aircraft turnarounds remotely, the Smart Stand has the potential to **enable reliable, fast turnarounds** and help maintain punctuality.

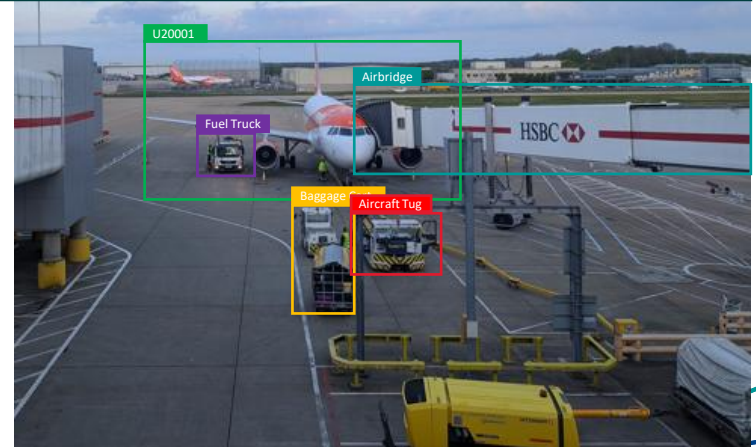
What could this mean for delays?

- Faster and more optimised turnarounds, which increases the potential for delays to be avoided or recovered.
- Improved punctuality and on-time performance.

Other systems are in development using Artificial Intelligence to monitor the turnaround.

- Airports **across the world** are beginning to implement AI into their monitoring systems to identify areas of inefficiency and delay.
- An example is shown below. Coordinators can monitor the status of an aircraft turnaround remotely and can identify where delays are occurring through analytics.

Example of what this system might look like



Summary & next steps



Key findings and further work

Area	Key findings	What is being done	Can further work be explored?
Airspace	<ul style="list-style-type: none"> There are multiple factors that impact can impact airspace capacity and thus flight efficiency, i.e. restricted or closed airspace, weather, strike action, cyber attacks, and ATC resource. Known factors such as restricted or closed airspace can be managed effectively. ATC has limited influence over unknown factors such as weather and cyber attacks. Airlines and airports have limited influence on delays that originate from en-route airspace. 	<ul style="list-style-type: none"> Concepts such as Functional Airspace Blocks (FABs) have been established to enable more direct routes between neighbouring countries, thus reducing delays. Airlines plan for disruption and optimise their schedules as far as reasonably possible to avoid delay. 	<p>There is limited opportunity for the NMB to influence known factors (European airspace restriction and capacity constraints).</p> <p>There is limited opportunity for the NMB to influence unknown factors (weather, strike action, cyber attacks, and ATC resource).</p> <p>Airspace issues are typically multinational and complex and are managed at the European Network Manager level.</p>
Taxi	<ul style="list-style-type: none"> Availability of infrastructure (i.e. taxiways) is key for successful throughput of aircraft on the taxiway. ATC and the airport are largely responsible for the throughput of aircraft during the taxiing operation, with the pilots following instructions given by ATC. Delays or congestion at the airport could be a result of staff shortages or demand spikes from external influences, rather than deficiencies in the taxi performance of aircraft. 	<ul style="list-style-type: none"> Surface improvements such as the Rapid Exit Taxiway allow aircraft to move on the ground more efficiently, creating less bottlenecks for delays. Work addressing the resilience of the taxi operation is ongoing and is being addressed by surface teams at London Gatwick. 	<p>London Gatwick's airport operations teams are doing work in this area to improve efficiencies. The NMB should consider inviting a representative from the operations team to a future NMB meeting/briefing, to present ongoing airport initiatives in this area.</p>

Summary & Next Steps

Key findings and further work

Area	Key findings	What is being done	Can further work be explored?
Turnaround	<ul style="list-style-type: none">Many stakeholders are involved in the turnaround process, and each activity requires coordination to prevent delays. There are often multiple external factors at play, not all of which are within the airport's control.Different airlines work with different organisations supporting this activity. It is the airline's responsibility to oversee and coordinate this process. In busy/congested airports, the turnaround can be delayed due to resource availability and aircraft needs.Turnaround inefficiencies can cause delay to the taxi. For example, reduced stand availability for incoming aircraft and/or a late pushback can lead to queuing aircraft, resulting in disruption.	<ul style="list-style-type: none">Efforts are being made to optimise the monitoring activities within the process, such as the Smart Stand trial at London Gatwick.A-CDM can be used to improve coordination and decision-making through sharing of key event data i.e. TOBT (target off-block/stand time)Other airports are investigating the use of AI to help with delay prediction. This could inform both the airport and ATC of potential delays and issues ahead of their occurrence.	<p>First wave performance is key to successful on-time performance throughout the rest of the day; a delay in the morning can have significant impact later in the day.</p> <p>Through this study we have engaged with the airport operations team, who have highlighted ongoing initiatives at the airport to improve on-time performance. The NMB should consider inviting a representative from the operations team to a future NMB meeting/briefing, to present ongoing airport initiatives in this area.</p>
Terminal	<ul style="list-style-type: none">Delays inside the terminal tend to be driven by system outages or resource issues in key areas such as security and border control, slowing passenger flow through the airport.Terminal processes are decoupled from aircraft processes.Terminal delay has minimal impact on an aircraft's total delay.	<ul style="list-style-type: none">Whilst delay can occur in the airport terminal, the frequency of occurrence is low given the protocols and back-ups in place to quickly and effectively resolve the issue at London Gatwick, i.e. in 2024, >90% of passengers cleared Security within 5 minutes or fewer.Decoupling of terminal processes from airline processes.	<p>Terminal delay has minimal impact on an aircraft's total delay. The NMB should focus on areas that have more meaningful impact, and which ultimately can lead to an aircraft running late into the night.</p>



Noise Impact of Late Running Aircraft into the Night

Noise Management Board

Dr Rebecca Mian | Programme Steering Group Lead
Douglas Moule | Expert Advisor
Katie Baker | Programme Steering Group
Joseph Branagan | Programme Steering Group

For NMB enquiries, please email the Secretariat at GatwickNMB.UK@egis-group.com

This document was produced
thanks to the support of



LONDON GATWICK

