Edinburgh Airport
Where Scotland meets the world

Arriving and departing aircraft at Edinburgh Airport

Last updated February 2023

Contents

Introduction

Edinburgh Airport is Scotland's busiest airport with over 14.3 million passengers passing through the terminal in 2018 for business or leisure. Whilst air travel provides us with many benefits, aircraft noise can impact on people who live or work near airports and under flight paths.

Whilst we can't eliminate it completely, we are working to minimise it. We are also committed to explaining what you're hearing and why.

Noise is caused by air going over the aircraft's fuselage (body) and wings - known as airframe - and its engines. When air passes over the aircraft's airframe, it causes friction and turbulence, which results in noise. The level of noise generated varies according to aircraft size and type and can differ even for identical aircraft. Engine noise is created by the sound of the engine's moving parts and by the sound of air being expelled at high speed.

Aircraft have been getting progressively quieter as designs and engine technology has advanced and it is expected that today's airlines will be operating even quieter models in the future.

To help address noise, we work collaboratively with the Civil Aviation Authority who set the Airspace Policy, airlines, and Air Traffic Control (ATC) who advise the aircraft where to fly. Edinburgh Airport is a member of Sustainable Aviation, a coalition of UK aviation stakeholders spanning aircraft manufacturers, airlines, airports and air navigation providers.

As an industry, the four main things we are doing are:

- designing airframes and engines to reduce noise generation
- tightening the regulations on noise
- improving the way aircraft and airports operate
- providing noise insulation and compensation for people who experience high levels of noise

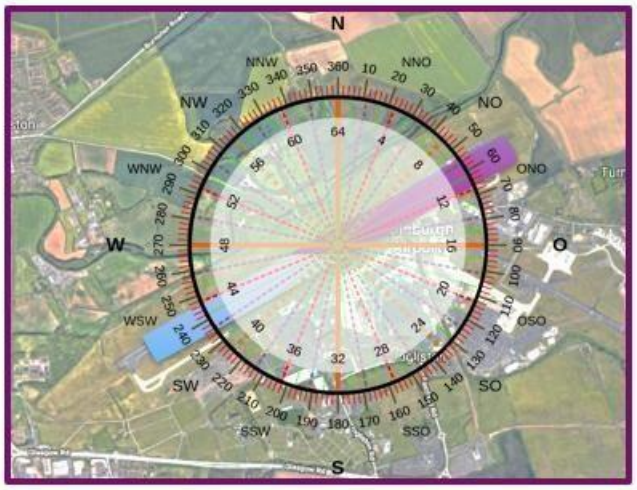
As long as there is a want, and need, to fly, there will be noise from aircraft landing and taking off. However, today's aircraft are typically 75% quieter than those used in the 1960s. The latest figures published by the Civil Aviation Authority show Edinburgh Airport to be quieter today than at any point in the past. This is because older and noisier aircraft are being phased out and replaced with quieter and more environmentally friendly models.

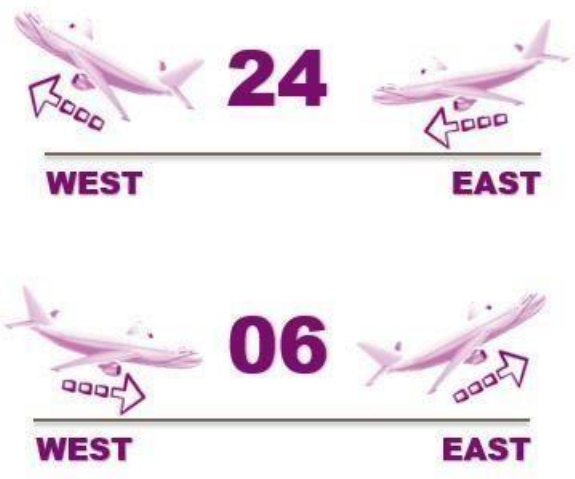
In May 2006, Edinburgh Airport chose to introduce a voluntary system of noise fining in line with those operated by Heathrow, Gatwick and Stansted. Any aircraft that breaks the stated noise thresholds set down by the UK Government is now fined, with the level of the fine dependent on the level of infringement. Two different noise thresholds are used, one for daytime and one for night time. The level of fines imposed were doubled in 2007 and since the introduction of this new system, Edinburgh Airport has seen a significant fall in the number of aircraft making excessive noise on departure from the airport. All money raised from noise fines is placed into the Edinburgh Airport Community Fund.

This document details the procedures that apply to arriving and departing aircraft at Edinburgh Airport, providing information on our flight paths to help the public understand what noise they may hear and help share information on our noise and flight tracker.

Runway and flight direction

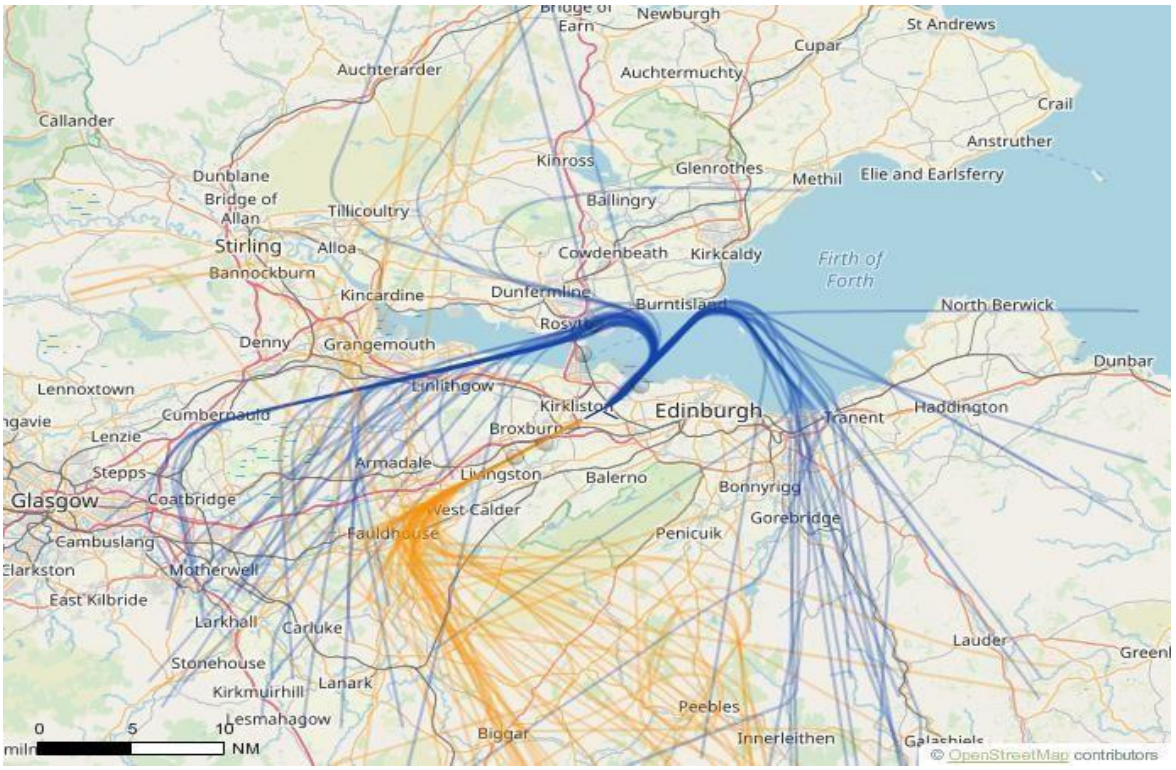
Edinburgh Airport has one primary runway (Runway 06/24), which operates in two directions. When Runway 06 is in operation, aircraft arrive from the west and depart to the east. When Runway 24 is in operation, aircraft arrive from the east and depart to the west.



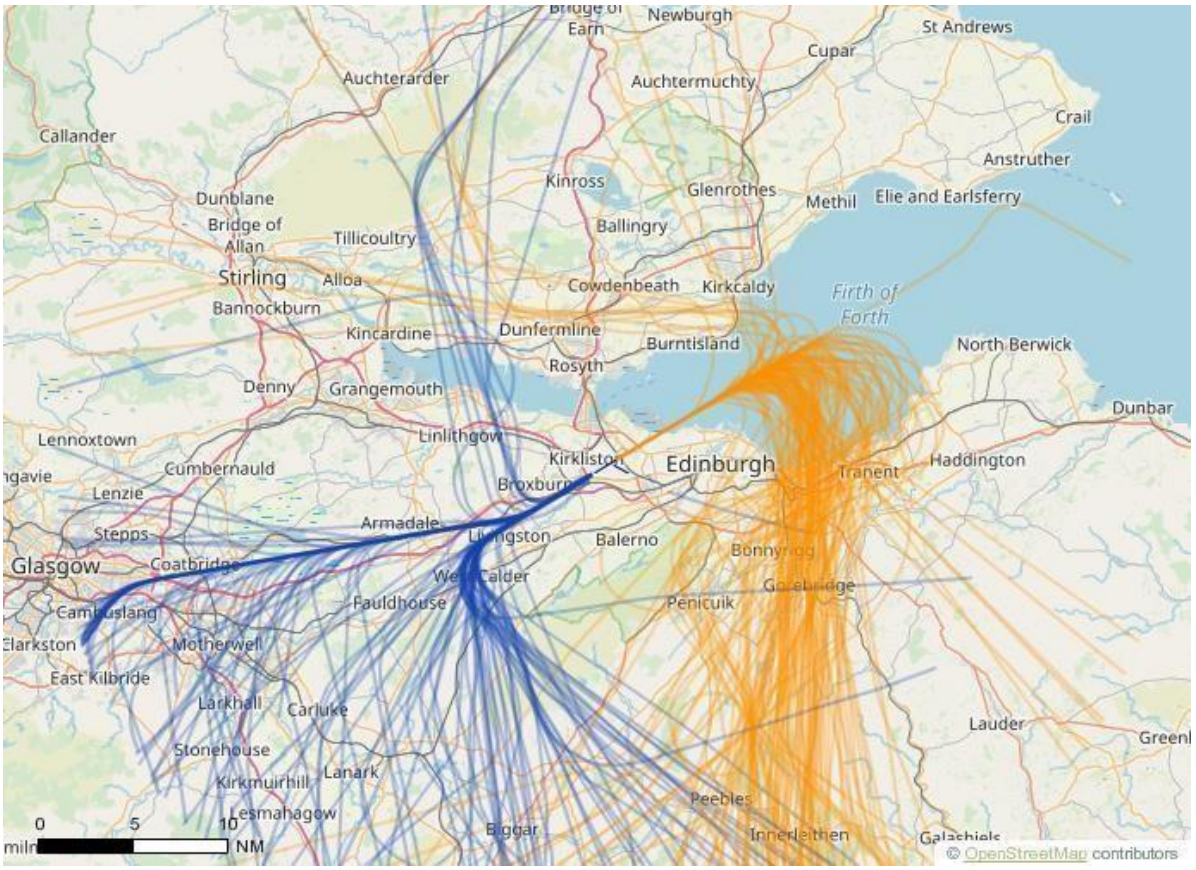


The direction of operation is entirely dependent on weather conditions as, where possible, aircraft will take off and depart into wind. Changes in runway use can happen at any time. Due to local weather conditions (south-westerly is the prevalent wind direction at Edinburgh Airport), R24 is in operation approximately 70% of the time and R06 is in operation approximately 30% of the time.

A typical day of **Runway 06** operations can be seen below, with arriving aircraft shown in orange and departing aircraft shown in blue.



A typical day of **Runway 24** operations can be seen below, with arriving aircraft shown in orange and departing aircraft shown in blue.



No statutory controls exist for aircraft noise or to prevent aircraft overflying a particular area. Aircraft can operate anywhere within our airspace as Air Traffic Control (ATC) maintain an orderly flow of air traffic, whilst ensuring safe aircraft separation. ATC integrate arriving and departing aircraft and as safety is paramount, flexibility is necessary to achieve this.

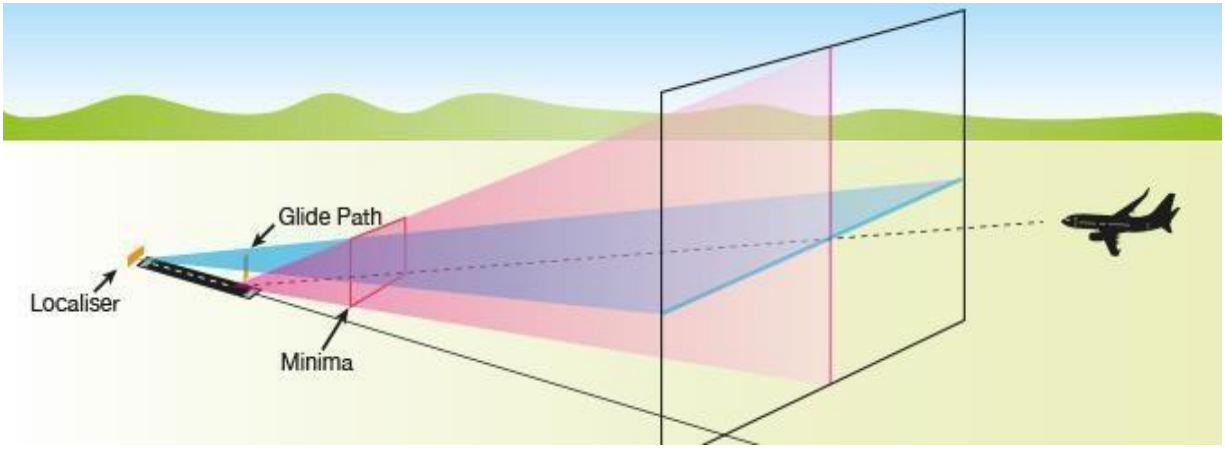
However, we are aware of the impact that aircraft operations can have on our local communities and work closely with our Air Traffic Control provider ANS and our airline partners to encourage compliance with the procedures detailed in this document.

Arriving aircraft

The Instrument Landing System (ILS)

The most common approach to the runway uses the Instrument Landing System (ILS).

The ILS is a radio system that transmits two beams, the localiser and the glide path. The localiser beam defines the centerline of the runway and extends along the approach path for approximately 20 nautical miles. The glide path beam defines the glide slope that aircraft should fly while following the localiser course to approach the runway.



Aircraft arriving descend at a 3° angle, the ILS provides a safe and manageable descent to the runway ensuring that an aircraft's final descent is controlled in an assured manner.

Arriving aircraft do not have a specified route to follow before joining the ILS. They will be advised, also known as 'vectored', by ATC, to follow a safe route on approach, this means there is more variation in the position of arriving aircraft.

Aircraft join the final approach at heights consistent with the use of the ILS, however, pilots are generally instructed to maintain an altitude of at least 2,500 feet until they are turned towards the ILS by ATC.

Visual Approach

Although most arrivals will follow the ILS, there are times when aircraft will use a visual approach and the pilot will land using visual references. These are required as part of a pilot's training schedule and will be authorised by, and under the control of, Air Traffic Control.

Non-Directional Beacon Approach

Should the ILS be out of service, a Non-Directional Beacon (NDB) approach is used. These are also required as part of a pilot's training schedule so may, on occasion, be used even when the ILS is operational.

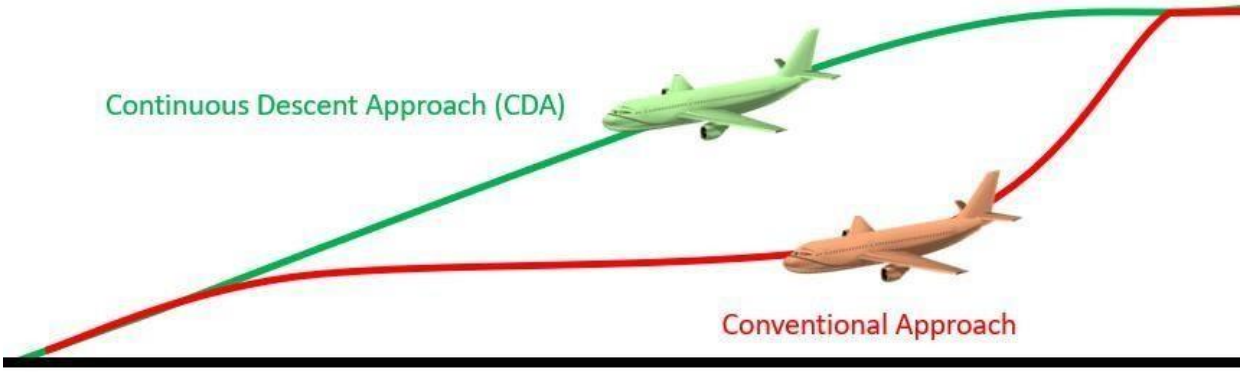
An NDB is a single aerial transmitter which transmits directional information to an aircraft. Instrumentation on board the aircraft will home into the transmissions, and the aircrew will fly towards the beacon, making adjustments to the track as they fly towards the runway. When an NDB approach is used, aircraft are positioned approximately five degrees east of the ILS localiser.

As the NDB beacon is located off to one side of the runway, the NDB flight path over the ground can vary slightly and, therefore, is not so precise as an ILS approach.

Continuous Descent Approaches (CDAs)

Arriving aircraft are encouraged to use Continuous Descent Approaches. This encourages aircraft to stay higher for longer, by descending at a continuous rate. This requires significantly less thrust leading to reduced emissions and noise, resulting in cost savings for the airlines. Improvements in CDA rates at Edinburgh are estimated to be saving airlines over £150,000 worth of fuel per year.

With a CDA an aircraft descends towards an airport in a gradual, continuous approach with the engine power cut back. By flying higher for longer and eliminating the need for the extra thrust required for the periods of level flight between steps of descent, CDAs result in reduced fuel burn, emissions and less noise exposure for communities under the arrivals flight path.



Departing aircraft

Standard Instrument Departure (SID) routes

Standard Instrument Departure routes are a set of instructions which a pilot will refer to when departing from the airport. These routes are not compulsory, they are there to ensure that all departures are safe and efficient.

In the 1970s, when Runway 06/24 was designed and built, SID development was not as rigorous or sophisticated as it is today. There was limited technology, so instructions were simple, involving directions to be taken once an aircraft had reached a certain height or travelled a certain distance.

SIDs are depicted as lines on maps, however, recognising that aircraft are unable to follow this line exactly, aircraft fly within a corridor known as a Noise Preferential Route (NPR).

Noise Preferential Routes (NPR)

Noise Preferential Routes are corridors, extending one mile in each direction from the center of the SID line, which aircraft are expected to fly when departing from the airport. NPRs are not a statutory control but are used to reduce noise disturbance on our local communities.

Departing aircraft are required to follow the NPR until they reach an altitude of 3,000ft. When they reach 3,000ft they can depart these routes and fly towards their destination. Since July 2015, to alleviate noise intrusion in the Uphall area, we raised this height/turn level to 4,000ft for jet aircraft.

On occasion, and to ensure aircraft safety, aircraft may be permitted to deviate from the NRP. The most common reason for this is difficult weather conditions.

Track keeping

All arriving and departing aircraft are monitored using our Noise and Track Keeping (NTK) system. Track keeping refers to aircraft flying in the NPRs. If an aircraft is found to be off-track, we will contact ATC and the airline directly to understand why, and work with the airline to ensure they understand the correct procedures and follow these in the future.

The following SIDs and their NPR routes currently in use at Edinburgh Airport are:

GRICE 3C	GRICE 4D
GOSAM 1C	GOSAM 1D
TALLA 5C	TALLA 5D

SIDs are given their name by a place or position/point that they lead to. For example, GRICE is a point in rural Perthshire and TALLA is near Carlisle. More detail on each is given on the next page.

At weekends when gliding is taking place at Portmoak we stop using GRICE 3C, and traffic is instead routed up over Fife away from the gliding. This is an arrangement made between the gliders and the CAA which also affects traffic from Glasgow and Prestwick Airports and is in accordance with CAA regulations.

SIDs – GRICE, TALLA, and GOSAM

GRICE	
GRICE is used by approximately 5% of departures comprising mainly Scandinavian and Highland and Islands services and occasionally Middle East aircraft. There are two separate GRICE departures: GRICE 3C is operational when Runway 24 is being used GRICE 4D is operational when Runway 06 is being used	
GRICE 3C	A GRICE 3C departure leaves Edinburgh Airport westbound before turning north and veering east before crossing the Forth and overflying the GRICE point at heights of 6,000 feet and above. All aircraft climb straight out to a beacon at Livingston before turning north. The NPR terminates at 3,000ft, and aircraft may turn when they are above this height. Since July 2015, to alleviate noise intrusion in the Uphall area, we have raised this height/turn level to 4,000ft for jet aircraft.
GRICE 4D	A GRICE 4D departure leaves Edinburgh Airport eastbound, turning left over the Forth and heading to GRICE. All aircraft on this departure are required to turn left on a 045 degree heading at 500 feet or at 0.5 nautical miles (whichever is reached earlier) to avoid the Cramond area of Edinburgh.

GOSAM	
GOSAM is primarily used by aircraft heading south from Edinburgh towards Carlisle. This includes most UK domestic jet services, such as flights to London, France, the Iberian Peninsula, Balearic and Canary Islands, amongst others. GOSAM accounts for over half of all Edinburgh departures. There are two separate GOSAM departures: GOSAM 1C is operational when Runway 24 is being used GOSAM 1D is operational when Runway 06 is being used	
GOSAM 1C	GOSAM 1C is operated in the following way, all aircraft climb straight out to a beacon at Livingston before turning as directed by Air Traffic Control (ATC).
GOSAM 1D	A GOSAM 1D departure leaves Edinburgh Airport eastbound, turning left initially and then left and left again over the Forth/South Fife and heading south-west or as directed by ATC. All aircraft on this departure are required to turn left on a 045 degree heading at 500 feet or at 0.5 nautical miles (whichever is reached earlier) to avoid the Cramond area of Edinburgh.

TALLA	
TALLA is primarily used by non-jet aircraft to all destinations except north. This includes Aer Lingus flights to Ireland and Flybe all over the UK. TALLA accounts for around a third of all departures. There are two separate TALLA departures: TALLA 5C is operational when Runway 24 is being used TALLA 5D is operational when Runway 06 is being used	
TALLA 5C	Aircraft operating on TALLA 5C climb straight out to a beacon at Livingston before turning left or as directed by ATC.
TALLA 5D	A TALLA 5D departure leaves Edinburgh Airport eastbound, turning left initially and then right over the Forth and then right again heading south towards TALLA and/or as directed by ATC. All aircraft on this departure are required to turn left on a 045 degree heading at 500 feet or at 0.5 nautical miles (whichever is reached earlier) to avoid the Cramond area of Edinburgh.

Continuous Climb Departures (CCDs)

Like Continuous Descent Arrivals, Continuous Climb Departures are encouraged due to fuel savings and noise reduction on local communities. The greatest benefit of continuous climb operations is the significant reduction in CO2 emissions and the positive impact this has on air quality.

The Sustainable Aviation partnership promotes continuous climb techniques at UK airports, with the procedure being used up until 10,000 feet. Sustainable Aviation is also promoting best practice in take-off and landing cycle operations through the publication of industry standard codes of practice. Climbing to optimum cruising altitude and out of congested airspace can reduce CO2 per departure by 100-300 kilograms.

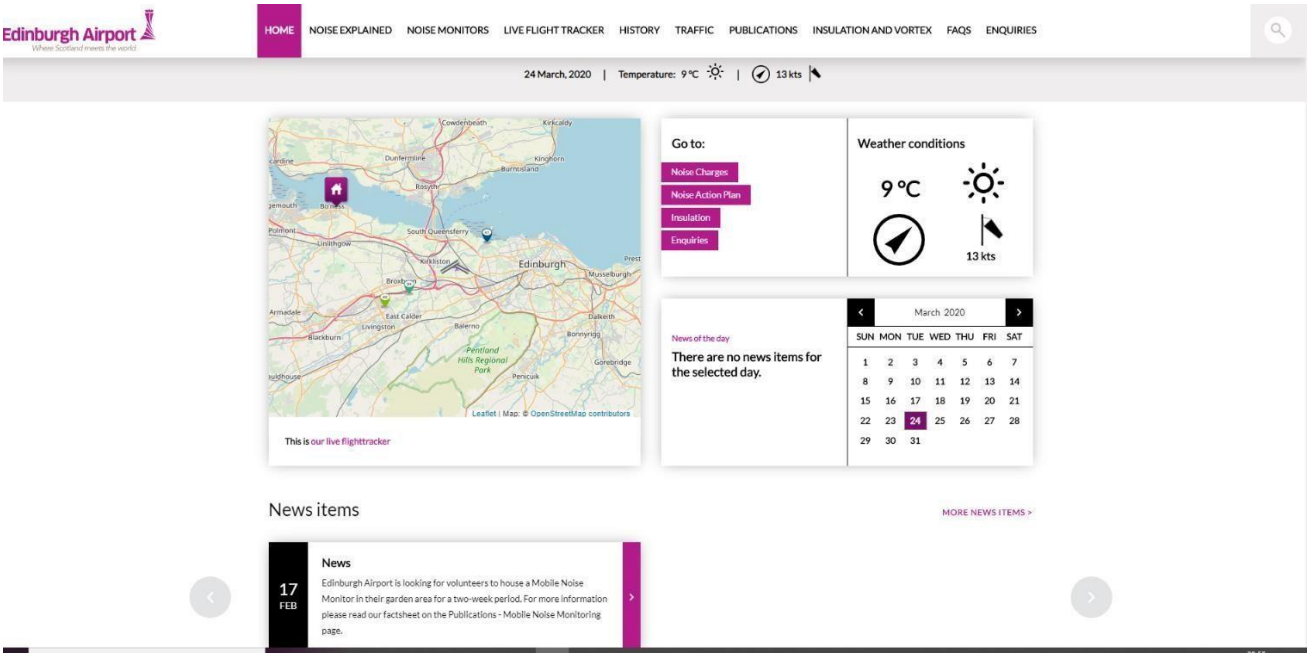
Further information on CDAs and CCDs can be found on Sustainable Aviation's website.

http://www.sustainableaviation.co.uk

Noise Lab and Flight Tracker

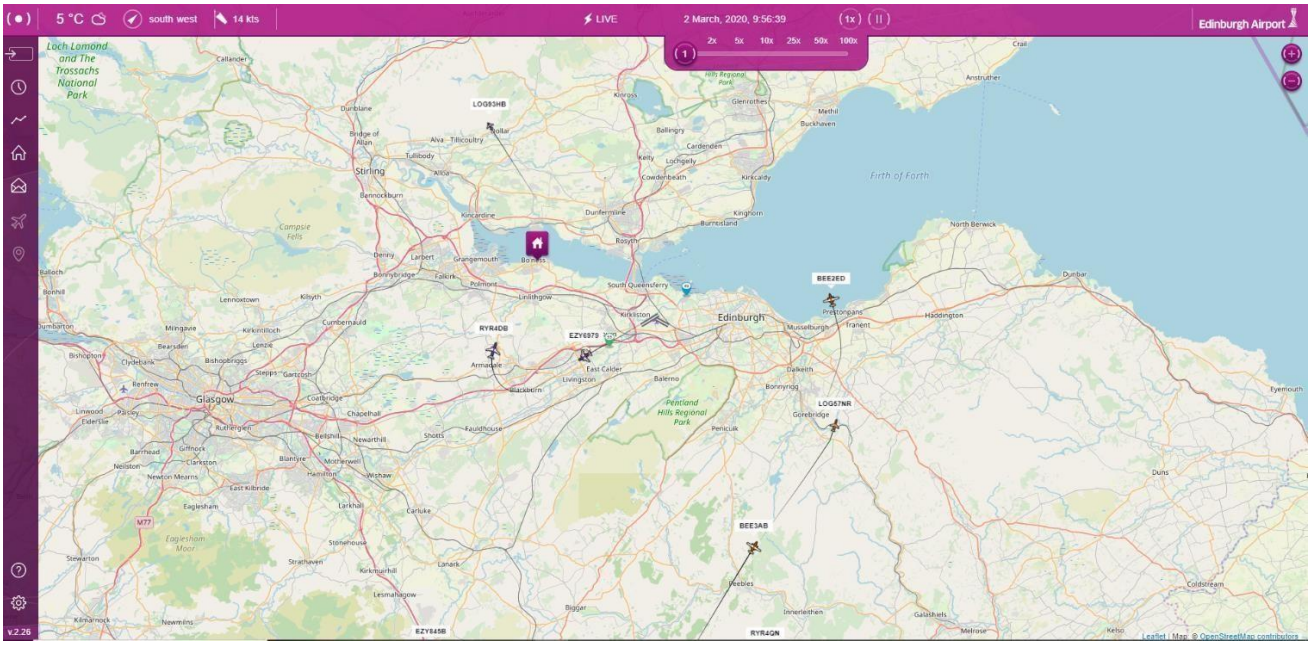
We have recently upgraded our Noise and Track Keeping (NTK) System, moving to an online system as part of Edinburgh Airport's Noise Lab. The NTK system is a state-of-the-art monitoring system that is specifically designed as an intuitive system for aircraft and noise track analysis.

In developing the system close attention has been paid to making sure the public can easily access and understand the analysis and reporting provided. As well as improved analysis and reporting, the Noise Lab provides information on noise and how, where, and why we measure noise, as well as providing historic data.



Edinburgh Airport Noise Lab - https://noiselab.casper.aero/edi/

Our Flight Tracker allows you to check flight specific information, such as flight position and altitude using our own radar data, as well as see noise readings. Please follow the links below to access the NTK system.



Edinburgh Airport Flight Tracker - https://flighttracking.casper.aero/edi/

Noise Monitoring and Fining

Aircraft flying to and from Edinburgh Airport are monitored by three permanent fixed noise monitoring stations located at Cramond, Uphall/Broxburn and Livingston.

The monitors are positioned in accordance with guidance from the Department of Transport (DfT) and are based on a detailed scientific study carried out for the DfT by the Civil Aviation Authority (CAA). Edinburgh Airport follows this guidance along with Glasgow, Heathrow, Gatwick and Bristol airports amongst others.

To measure the noise from individual aircraft, the noise measurement parameter Lmax is used, this is measured in decibels (dB) and is the measurement of the maximum noise level during one noise event or, in this case, during one aircraft movement.

There are maximum allowed levels for daytime noise (06:00 – 23:30) and night time noise (23:30 - 06:00) - these are 94dBA Lmax and 87 dBA Lmax respectively. Flights must not exceed these levels and airlines are fined if they do. This is a voluntary policy introduced by Edinburgh Airport to mitigate against noise nuisance in our communities.

We hope the above information has helped explained how flight movements operate at Edinburgh Airport, however, should you have any further questions about this, please contact us via one of the below methods:

Email: noise@edinburghairport.com
Writing: Communications Team, Edinburgh Airport, 2nd Floor,Terminal Building, Edinburgh Airport, EH12 9DN **Phone:** 0800 731 3397 This is our dedicated noise enquiry line but please leave other queries regarding any of the above here too.
Website: https://noiselab.casper.aero/edi/

Airspace Change Project (ACP)

What is airspace?

Airspace is in effect the sky above us. Infrastructure has been developed to allow aircraft to operate safely as they arrive and depart at larger airports and indeed smaller airfields. The airspace is divided into controlled and uncontrolled airspace. The basic difference is that in controlled airspace air traffic controllers are there to issue instructions and advice to enable the safe operation of air traffic.

Edinburgh Airport lies in the Scottish Terminal Maneuvering Area (STMA) which is class D airspace. To fly inside this airspace aircraft, need to carry a minimum of equipment and need to obtain a clearance from Air traffic Control (ATC). In uncontrolled airspace there is a wide variety of aviation happening from microlight activity, to paradropping and military operations. ATC may still operate here but aircraft are not required to carry certain equipment and there is more freedom of operation here for pilots. More information about the classes of airspace and the differences between them can be found here.

What is CAP1616?
CAP 1616 (Civil Aeronautical Publication 1616) is the guidance we follow to enable the airspace change process to be carried out to completion. It's a public document and available on the CAA website https://publicapps.caa.co.uk/modalapplication.aspx?appid=11&mode=detail&id=8127
The document details the 7-stage process for airspace change implementation.

Where can I find out more and be kept up to date on this process?

Documentation submitted to the CAA may be viewed via the CAA ACP Portal below
https://airspacechange.caa.co.uk/PublicProposalArea?pID=163

You may also contact us via the following email address airspace_change@edinburghairport.com

What is the airspace change process?
The airspace change process is the regulatory process required for changing airspace design. This can involve changes to controlled airspace dimensions, classification of airspace and changes to the flightpaths and routes that aircraft take. The Department for Transport (DfT) are responsible for all aviation policy in the UK and the Civil Aviation Authority (CAA) are responsible for its regulation and the approval of any airspace change plans. Edinburgh Airport is responsible for the airspace up to a height of 7000 feet and National Air Traffic services (NATS) take responsibility above 7000 feet. Guidance on the regulatory process for changing the notified airspace design and planned and permanent redistribution of air traffic, and on providing airspace information can be found in CAP 1616.

Is there a public consultation?
There will be a public consultation as part of this process, and this takes place during Stage 3 which will probably be early 2024.