
FLIGHT PATHS

Why do aircraft take off and land in a particular direction?

Aircraft generally (but not always) take-off and land into the prevailing wind. This helps to generate more lift from the wings and makes the engines more efficient.

What is the direction of the runway at Bristol International Airport?

The runway runs almost exactly east west. Annually about 65% of flights take off and land in a westerly direction and 35% in an easterly direction.

What other factors can influence the direction of landings or take-offs?

If the wind is very light or blowing across the runway, aircraft may be permitted to choose their preferred runway direction but only if that is entirely safe and no other aircraft are disadvantaged. This choice may be influenced by the aircraft's weight, braking characteristics or the availability of landing guidance

facilities in fog or low cloud conditions. Bad weather around the Airport, especially thunderstorms or heavy rain squalls, may also affect the choice of runway direction.

What are Noise Abatement Procedures?

BIA directs pilots of jet aircraft to follow procedures designed to minimise the effect of noise, from departing aircraft for those people who live close to the Airport. We insist that all jet aircraft climb to 3,000 feet above sea level before turning onto their required route. This has the effect of "funnelling" the worst of the noise back onto the Airport itself, rather than dispersing the sound across a wide area, as the aircraft banks and turns at low altitude. BIA also requires all aircraft to be operated by pilots in such a way as causes the least disturbance to local residents.

What happens if a pilot doesn't follow the Noise Abatement Procedure?

All flights are monitored on radar by the Air Traffic Controllers at BIA. If there is an obvious breach of the procedure, the details are noted and the airline or pilot is contacted, with a request for an

explanation. In some circumstances the occurrence may need to be referred to the UK Civil Aviation Authority for further investigation.

Why may a pilot not appear to follow the Noise Abatement Procedure?

Our statistics show that the vast majority of all commercial aircraft using BIA follow the noise abatement procedures. However, on occasion it may appear to an observer on the ground that an aircraft has disregarded them. Usually there is a very good reason for this, which the pilot advises to Air Traffic Control by radio. Examples may include:

- A departing aircraft may need to avoid a heavy rain squall or thunderstorm.
- It may suffer an equipment malfunction.
- The aircraft may drift off the exact required flight path because of unexpectedly strong winds, until the pilots make allowance for this.
- Air Traffic Control may require an aircraft to follow a particular flight path on departure in order to maintain separation from other aircraft in the area.

The initial departure flight path should be considered as a narrow band or swathe,

rather than as a thin line along the runway axis.

It is the pilot's responsibility to comply with the appropriate, published noise abatement procedure, unless there are very good reasons to do otherwise.

Why do some aircraft turn quickly after take-off and others seem to go a long way in the take-off direction before they turn?

The departure noise abatement procedures apply to jet-powered aircraft and not to propeller driven aircraft which can often turn away from the airport within a couple of miles of the end of the runway. Jets have to be at 3000 feet (above sea level) or higher before they can turn. On a hot day in the summer, with little head wind, a jet may fly perhaps four or five miles in line with the runway before it reaches 3000 feet. On a cold day, or with a strong headwind, that jet may climb quickly and be at 3000 feet within a mile of the end of the runway. The weight of the aircraft is also a factor. A large jet, going a long distance, heavily laden with fuel and passengers, may take much longer to reach 3000 feet than would a small commuter jet, going on an internal flight in the UK. Air Traffic Control may also instruct departing aircraft to stay on the extended runway

centreline after departure too, in order to keep it clear of other aircraft.

What determines the flight path of aircraft, after take-off?

Initially, the noise abatement procedures for departing jets. All aircraft are also subject to Air Traffic Control instructions, which may demand that an aircraft follows a particular course, in order to avoid other aircraft, using radar. After that, most commercial flights have to join the national airways network at a designated position, navigating by radio beacons or on-board computer equipment. Typically, departures from Bristol International join and leave airways at three positions: over Brecon, at a point just south of Minehead and a position near Stroud.

Which route do arriving aircraft follow?

The majority of arriving commercial aircraft leave the national airways network and are handed over to the Air Traffic Controllers at BIA when they are about 30 miles away, passing through 8000 - 12000 feet, typically. They are then radar-positioned to intercept a very precise radio-beam guidance system

called ILS (Instrument Landing System), and at between 8 and 12 miles from the Airport. Once lined up with the runway, the ILS determines the track and level of aircraft as it approaches BIA. See diagrams 1 and 2.

Diagram 1: Typical Heights

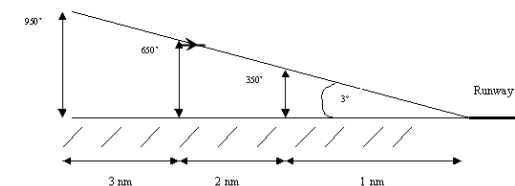
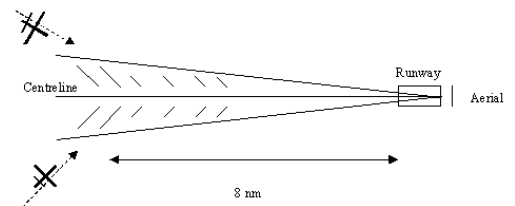


Diagram 2: Route Followed



Do all aircraft use the Instrument Landing System to land?

No, if the weather is very good and Air Traffic Control agree, some pilots may elect to fly a visual approach. If the ILS is unavailable for any reason, some aircraft may be given a radar talk-down or fly an approach taking radio-compass bearings from a radio beacon on the Airport. Both are fully approved procedures but may be slightly less accurate than an ILS

approach. For that reason, the aircraft may appear to be slightly off the "normal" flight path to the runway.

Why can't you vary the flight paths?

Routes are varied according to the runway in use and other aircraft in the vicinity of BIA.

Why don't aircraft stay on the "flight path"?

Apart from the noise abatement procedures, the course of the ILS and other final-approaches, there are no fixed flight paths in the area. We can, and do, vary these of necessity, in order to safely control aircraft within 30 miles of Bristol International Airport. We must integrate our flights with those operating to and/from Cardiff Airport, Filton and the military airfields in the West Country. In addition, there are many other airspace users whom we have to accommodate, including the pilots of hot air balloons, training flights and light aircraft.

Which routes are most commonly flown?

Commercial flights join and leave the national airways routes at designated points. These include 'points in the sky' near Minehead, Brecon, Wootton-under-Edge and Calne.