

How to use xPlane

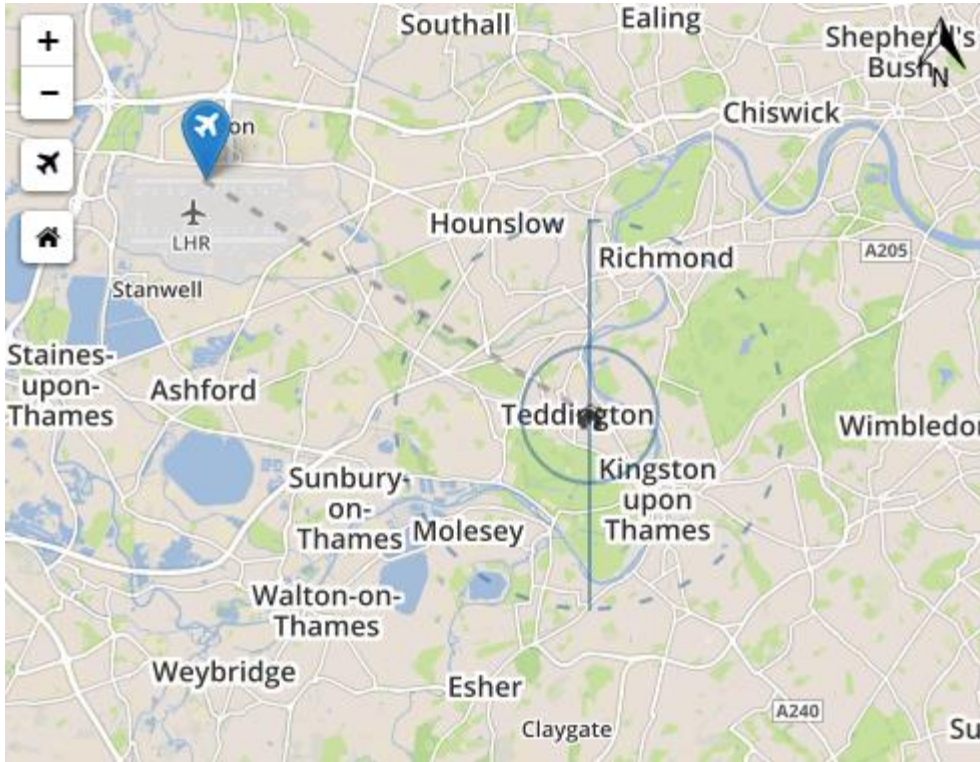
xPlane is a new tool that allows you to find out about what kind of aircraft from Heathrow fly over your location, when and how often.

The following pages are a step-by-step guide to help you use **xPlane**.







STEP 1 Selecting your location


To get started, enter the postcode for the location where you want to analyse Heathrow flights. Your location will now appear on the map.



You can move around the map by holding down the left mouse button and moving the mouse. There are also four buttons on the map:

-  Zoom in
-  Zoom out
-  Show the location of the airport and your distance from it
-  Show your location at the centre of the map

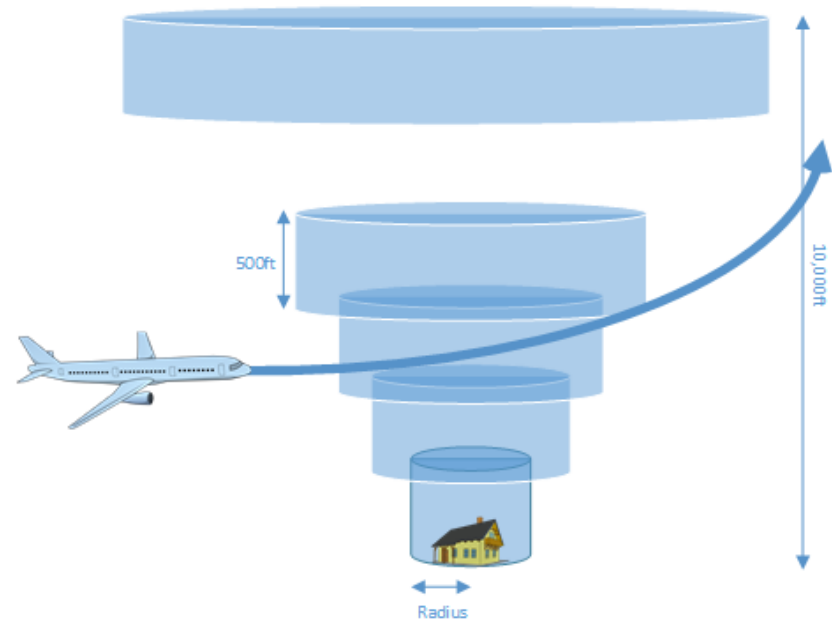
Enter your chosen postcode and click the  symbol

STEP 2 Selecting your home zone

You can choose the size of the area you wish to analyse. This is called the **home zone** or the “**cone**”.

You can think of the home zone as an inverted cone above your property. Any Heathrow flight which passes through the cone will be included in the analysis in **Step 18**.

You control the size of the home zone by entering the radius of the base of the cone. This can be between 0.5 miles and 2 miles.



Radius:

Once you have decided on the radius you would like to use, click the **Apply** button

STEP 3 Selecting a time period

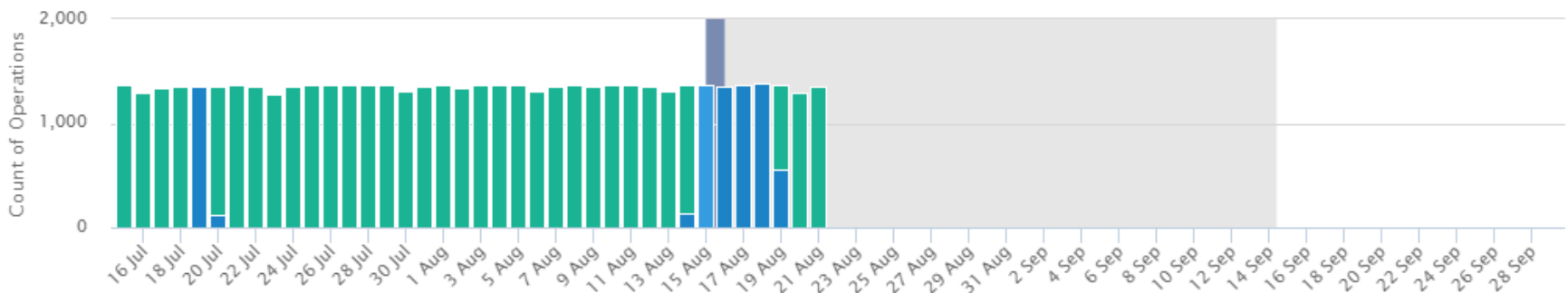
You can look at flights from a single day or for longer periods of up to seven days.

15/08/2016 1 Day Apply

Once you have selected the date and number of days you would like to look at, click the **Apply** button

The bar graph below shows the number of flights using Heathrow each day. The direction planes fly depends on the wind direction. This is known as Westerly and Easterly operations. **Westerly** flights are shown in green and **Easterly** in blue.

You can hover over the bars for more information. You can also zoom in by dragging your mouse over a few of the bars.



Date: 15/08/2016 Westerly: -
Total: 1,369 Easterly: 1,369 - 100%

In this example there were 1,369 flights and they were all Easterly (100%)

STEP 4 Selecting the gate angle

You're almost ready to look at the results. There's just one more thing to do. To get the most out of **xPlane** you may want to change the angle of the "gate".

The gate is vertical slice through your home zone that allows you to see how Heathrow flights are distributed as they go through the gate.

Care is needed when selecting the rotation as it can significantly change the results shown.



If you're not sure of the direction aircraft fly over your area, you can enter your postcode in the **WebTrak My Neighbourhood** tool at <http://myneighbourhood.bksv.com/lhr>

Alternatively you can see typical flight paths for Westerly and Easterly operations on the next two pages.

Filter Operations

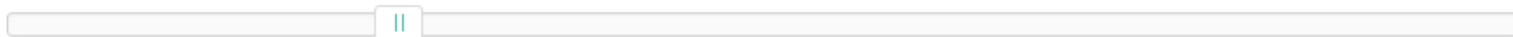
Gate Information

Above You

Common Aircraft & Airlines

Gate Penetrations

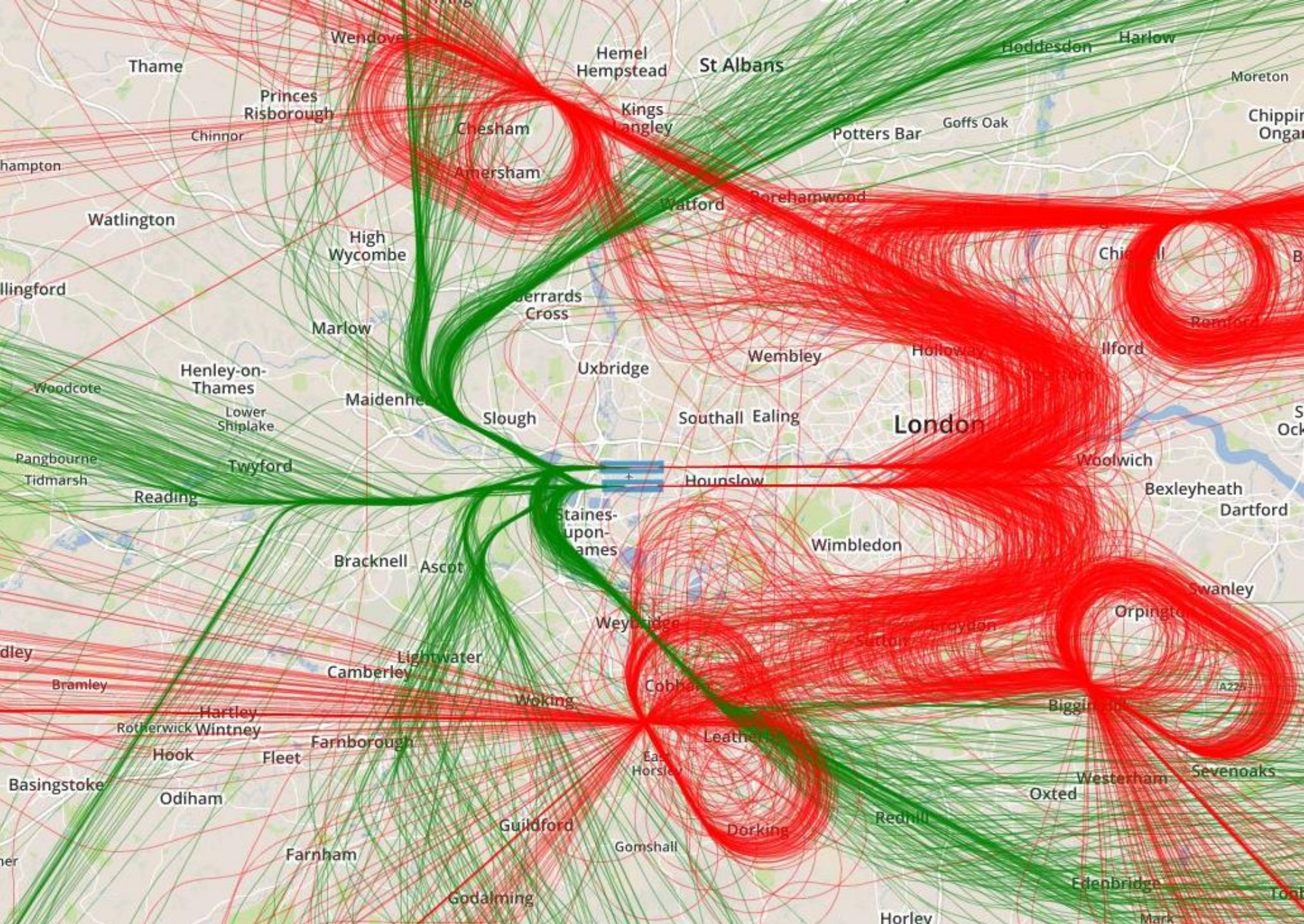
The Gate is a vertical slice through the home zone that allows you to see how Heathrow flights are distributed as they pass through the gate. Using the control below you can change the angle of the gate around the location.



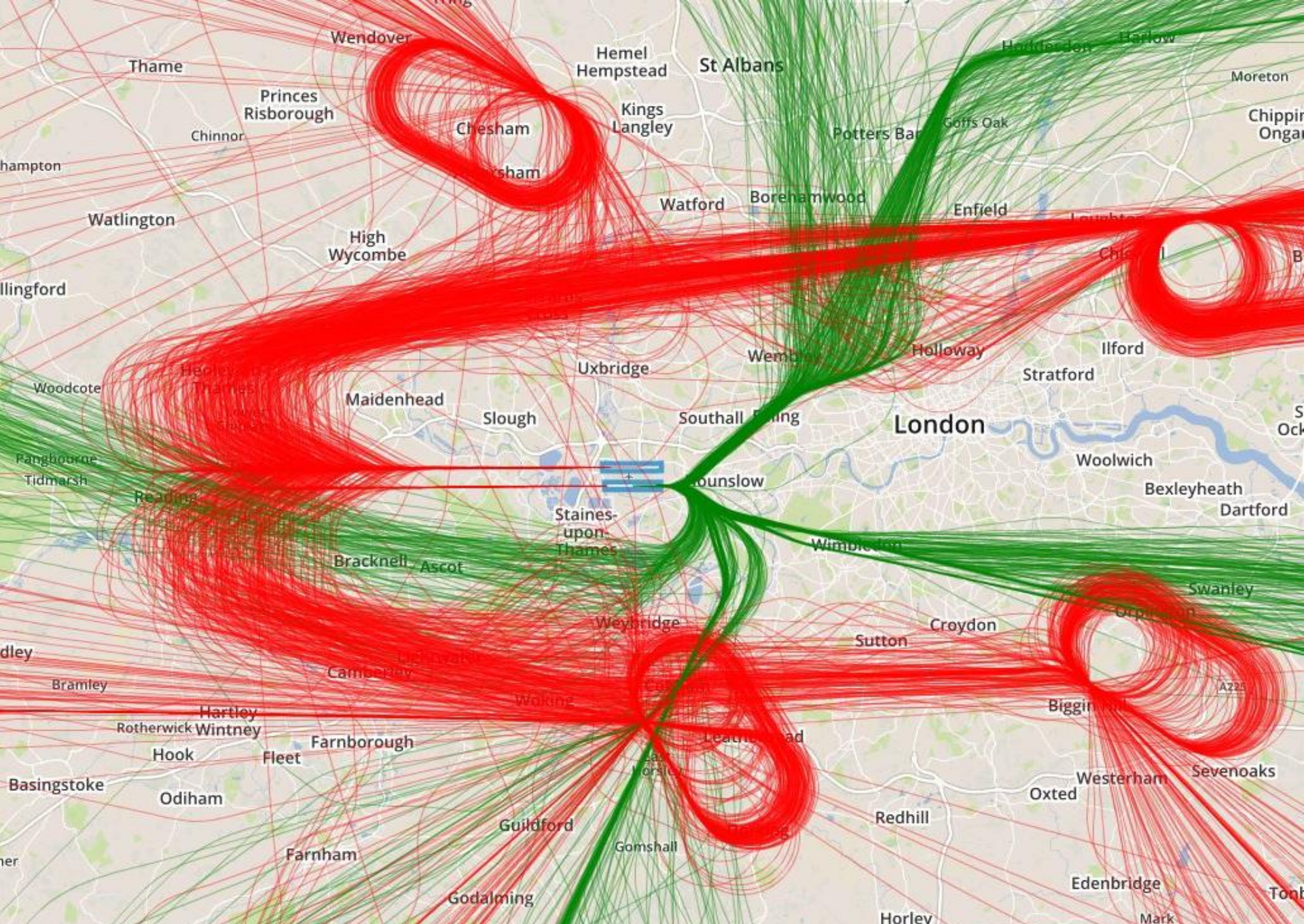
Drag the slider control left or right to change the gate angle



The angle of the gate on the map above is shown here



6 A day of **Westerly** operations. **Arrivals** are shown in red and **departures** in green.



7 A day of **Easterly** operations. **Arrivals** are shown in red and **departures** in green.

STEP 5 Viewing the results

Data is displayed in two formats - **gate** analysis and **home zone “cone”** analysis.

1. Aircraft crossing the gate

This looks at aircraft which pass through the **gate** (the vertical slice through your postcode) as described in **Step 4**.

2. Aircraft in the home zone (“cone”)

This looks at aircraft which pass through the **home zone** (the inverted cone above your property) as described in **Step 2**.

Results

Aircraft crossing the gate

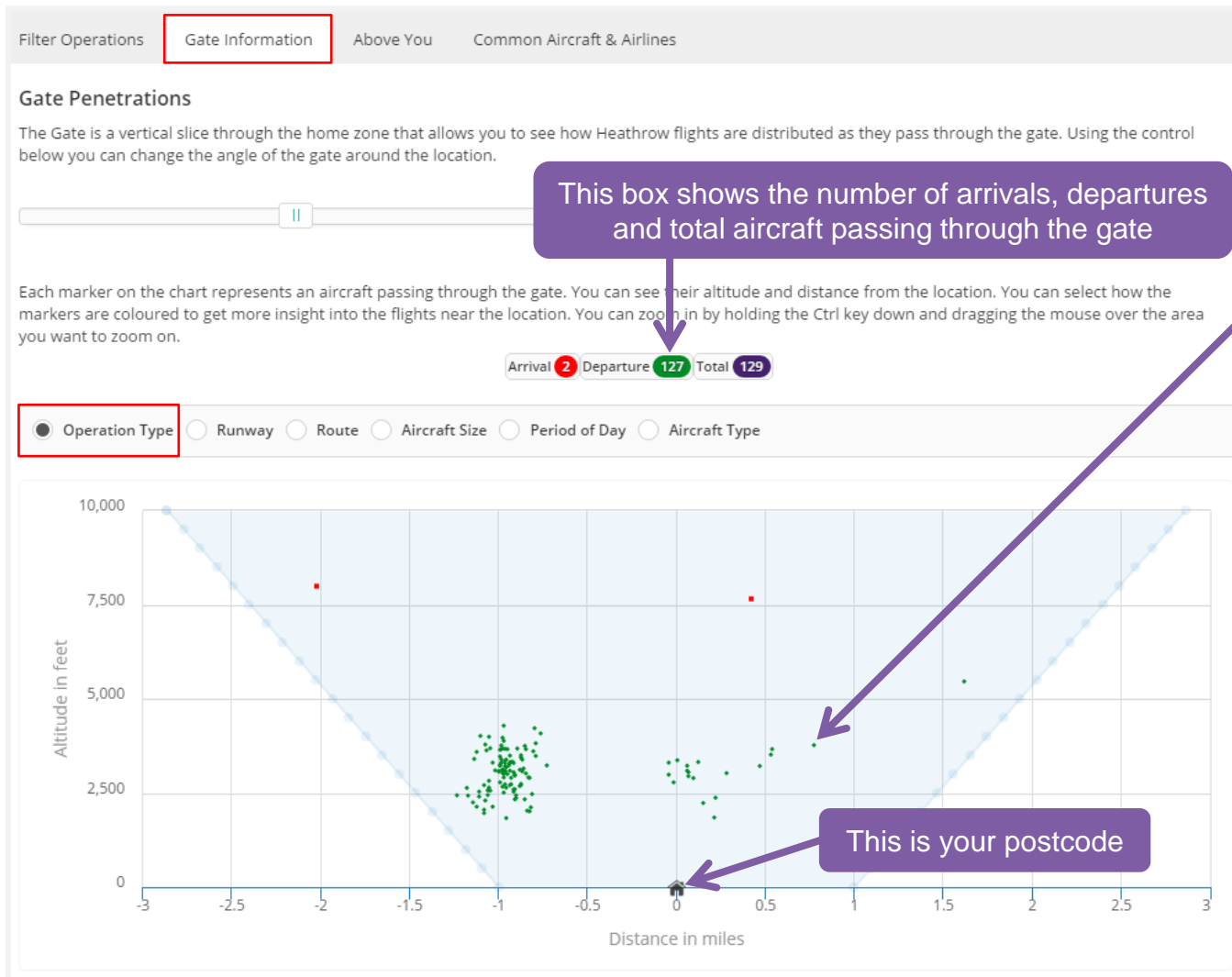
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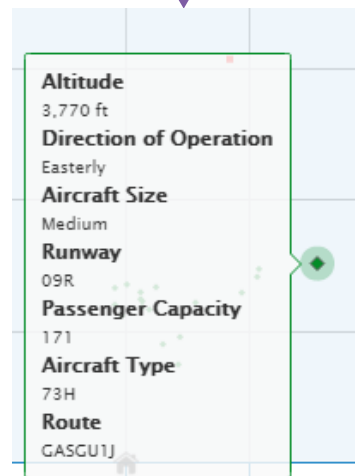


STEP 6 Gate Information

xPlane provides a number of charts to explore how aircraft operate in your area.

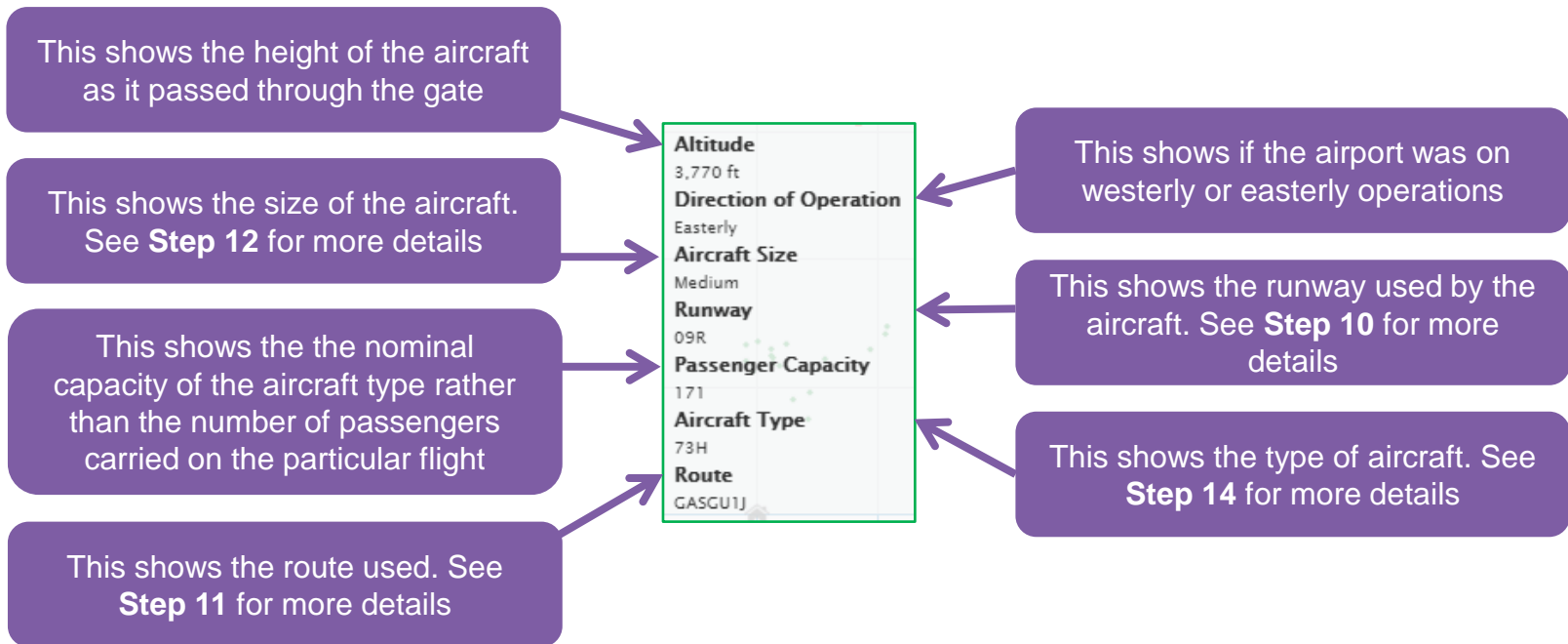


You can hover over a marker on the **Gate Information** chart to see information about an individual flight (see **Step 7** for more information)



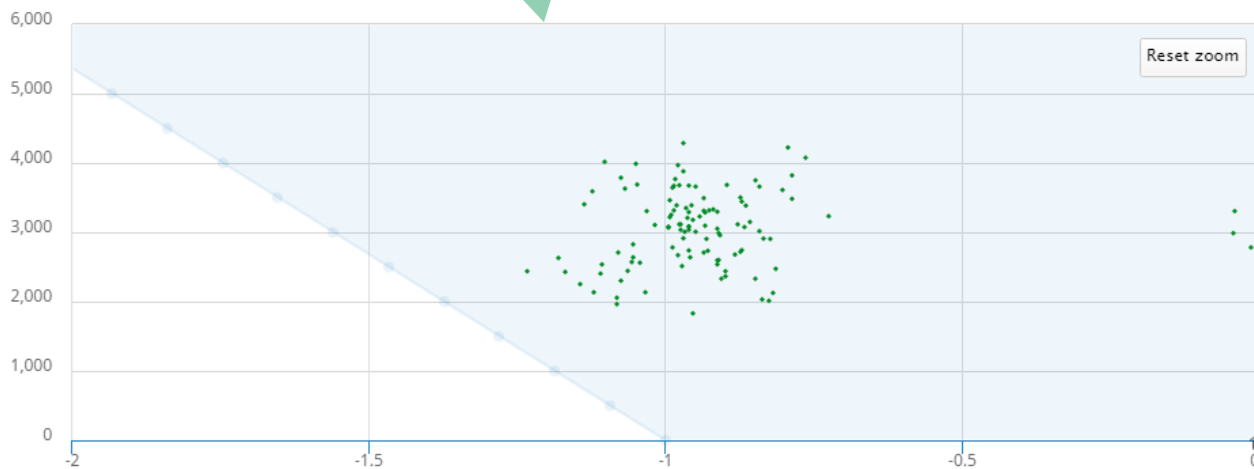
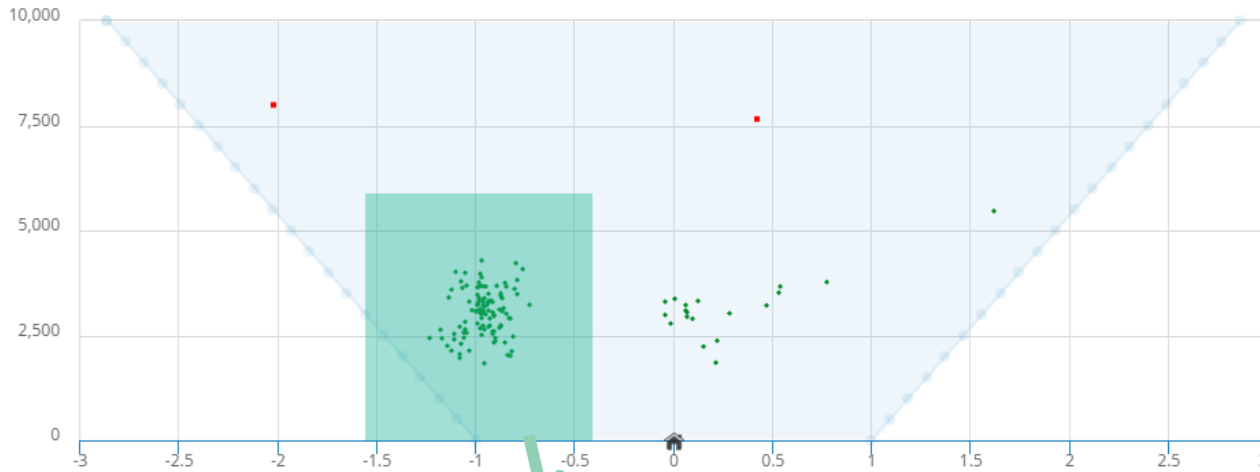
STEP 7 Individual flight Information

You can see information about individual flights (see **Step 6** on previous page).



STEP 8 Gate Information - Zooming in

You can zoom in by dragging the mouse over part of the chart.



You can click on the **Reset zoom** button to restore the view to its original size

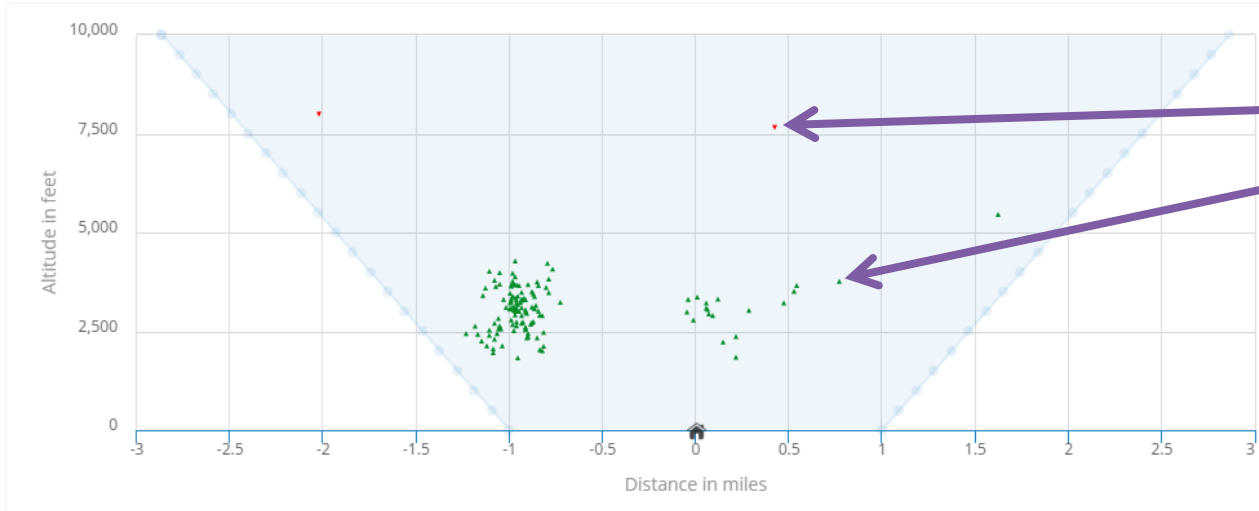
STEP 9 Gate Information - Operation Type

This will sort all flights into arrivals and departures. Arrivals are shown in red and departures in green.

This box shows the number of arrivals, departures and total aircraft passing through the gate

Arrival **2** Departure **127** Total **129**

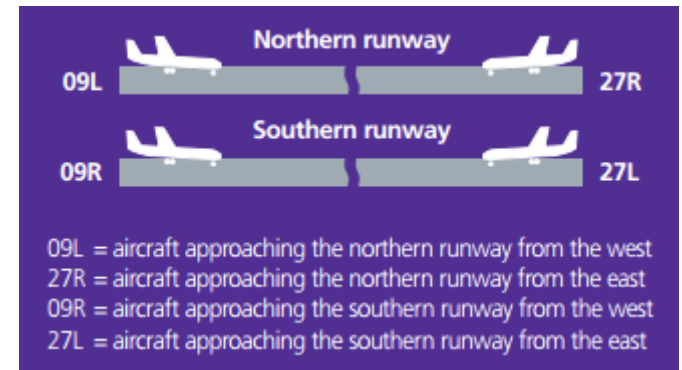
Operation Type Runway Route Aircraft Size Period of Day Aircraft Type



Arrivals are shown in red and departures in green

STEP 10 Gate Information - Runway

This will show the runway used by each aircraft. The runway names depend on the direction of operation. On easterly operations the runways are called 09L and 09R. On westerly operations they are called 27R and 27L (see box opposite).



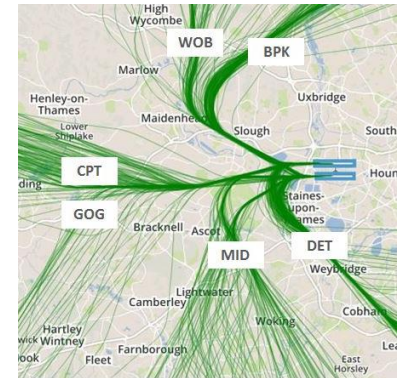
In this example, aircraft using the northern runway (09L) are shown in grey and those using the southern runway (09R) are shown in purple

STEP 11 Gate Information - Route

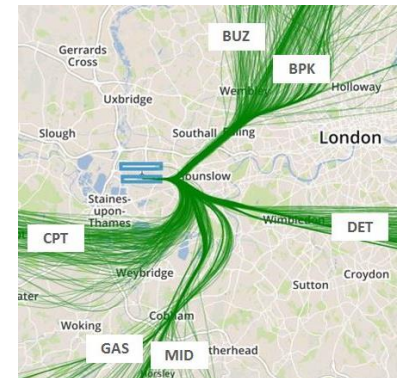
This will show the departure routes used by each aircraft. Departures routes are shown as codes. For example, codes starting with DET correspond to the Detling route and codes starting with CPT correspond to the Compton route. Arrivals are shown as a single category.



Westerly departure routes



Easterly departure routes



STEP 12 Gate Information – Aircraft Size

This will show the aircraft according to their size. Four size categories are used:

- **LIGHT** – e.g. Cessna Citation, Learjet
- **MEDIUM** – e.g. Airbus **A318**, **A319**, **A320**, **A321**, Boeing **737**, **757**.
- **HEAVY** – e.g. Airbus **A330**, **A340**, Boeing **747**, **767**, **777**, **787**.
- **SUPER HEAVY** – e.g. Airbus **A380**.

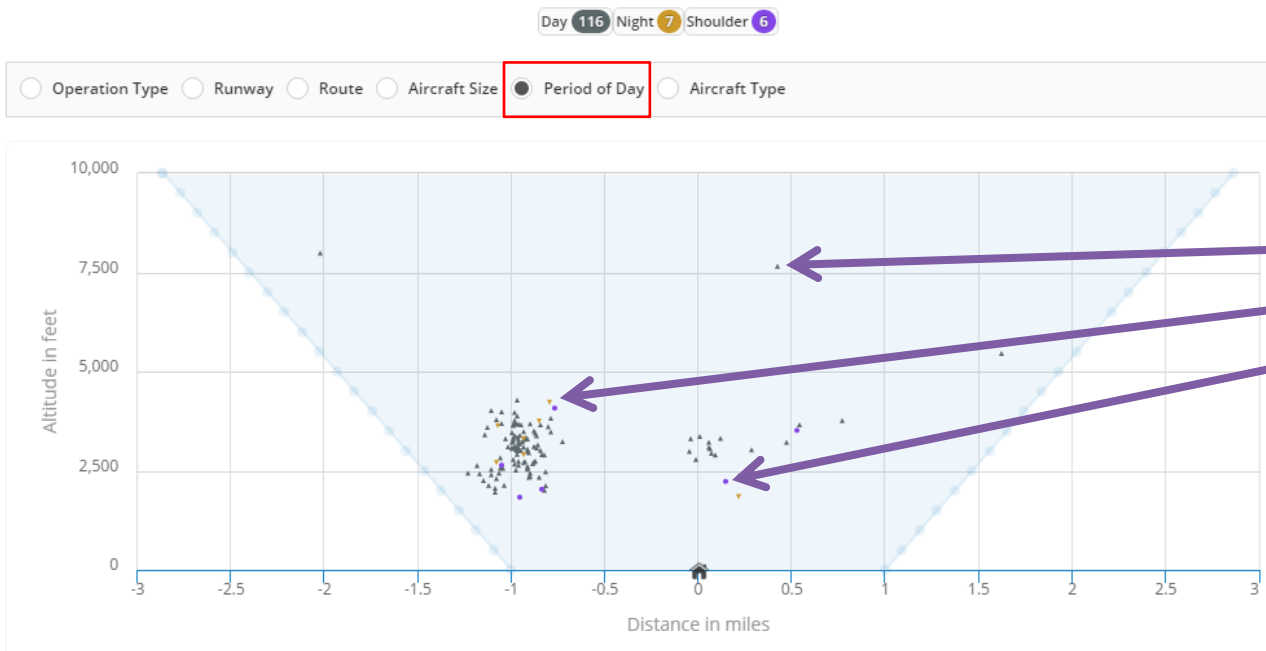


In this example, **Medium** size aircraft are shown in gold, **Heavy** aircraft are shown in purple and **Super Heavy** aircraft are shown in grey

STEP 13 Gate Information – Period of Day

This will show the period of day when the aircraft passed through the gate.

- **NIGHT** – 11:30pm to 6:00am
- **SHOULDER** – 6:00am to 7:00am
- **DAY** – 7:00am to 11:00pm
- **SHOULDER** – 11:00pm to 11:30pm

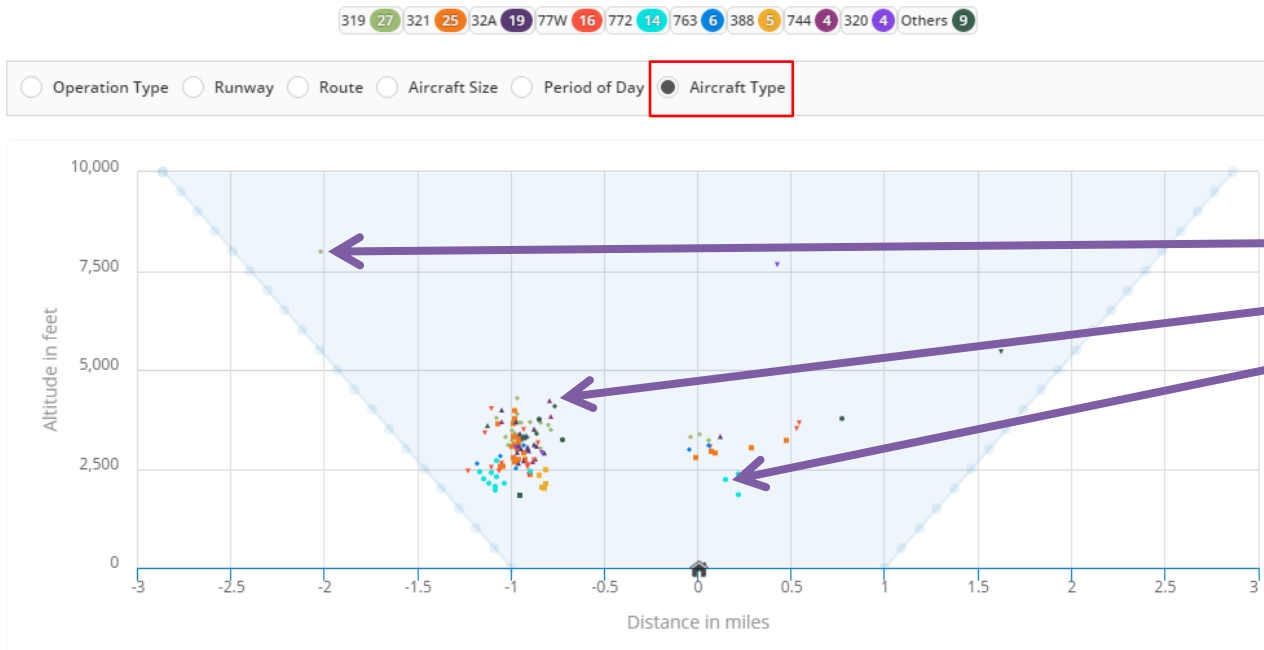


Flights passing through the gate during the **Day** period are shown in grey, **Night** flights in gold and **Shoulder** flights in purple.

STEP 14 Gate Information – Aircraft Type

This will show the most common types of aircraft that passed through the gate.

Aircraft types are shown as 3 digit codes (e.g. 319, 744). Airbus aircraft types start with 3 (e.g. Airbus A320, A380) and Boeing aircraft types start with 7 (e.g. Boeing 737, 747). The third digit is sometimes used to denote variants of aircraft type. For example, 744 refers to a Boeing 747-400 model and 32A refers to an Airbus A320 with 'Sharklet' wing-tip devices.



In this example, an **Airbus A319** is shown in light green, a **Boeing 747** is shown in crimson and a **Boeing 777** is shown in light blue.

STEP 15 Aircraft types and airlines

Once you have viewed the gate information, use this chart to see which aircraft types or airlines passed through the gate during the time period you selected.

Click here to choose between results based on aircraft types or airlines

This shows the number of times that aircraft passed through the gate. If an aircraft went through the gate twice it will be counted twice

The passenger count is based on the nominal capacity of the aircraft type rather than the number of passengers that were carried on each aircraft

This shows the average minimum height for each aircraft type or airline

Aircraft Type Airline

The table shows the nine most common aircraft types or airlines that passed through the gate

AIRCRAFT	TIMES THROUGH GATE	AVERAGE PASSENGER CAPACITY	MINIMUM ALTITUDE (FEET)
319	27	140	3,018
321	25	186	2,365
32A	19	176	2,641
77W	16	329	2,333
772	14	249	1,847
763	6	259	2,513
388	5	555	2,011
320	4	200	2,910
744	4	318	2,680
Others	9	210	1,831

STEP 16 Filtering the results

xPlane allows you to filter the type of operations that appear in the results. Click on the **Filter Operations** tab to access the filter controls.

If you only want to look at flights below 5,000ft you can reduce the **Altitude Range** by moving the slider

If you only want to look at flights between midnight and 08:00 you can reduce the **Time-of-day Range** by moving the slider

Filter Operations Gate Information Above You Common Aircraft & Airlines

You can use these controls to limit the operations that are considered in the analysis.

Altitude Range
You can use this to restrict the altitude range that is included in the presentations for aircraft that are near the location.

0 ft 5000 ft

Time-of-day Range
Aircraft operations can be more noticeable at quiet times of the day. You can focus on operations during a particular part of the day here.

0:00 8:00

Operation Types
Depending on where you live, you may be affected more by arrivals or departures. You can filter these here.

Arrival Departure

Aircraft Size & Weight
Using this filter allows you to focus the presentations on particular aircraft sizes (e.g. Super Heavy aircraft such as the A380).

Light Medium Heavy Super Heavy

Check these boxes if you only want to look at certain sizes of aircraft

The aircraft size is defined by its 'Wake Turbulence' category which provides a good representation of the size of an aircraft. Examples of aircraft types in each category are shown in **Step 12**

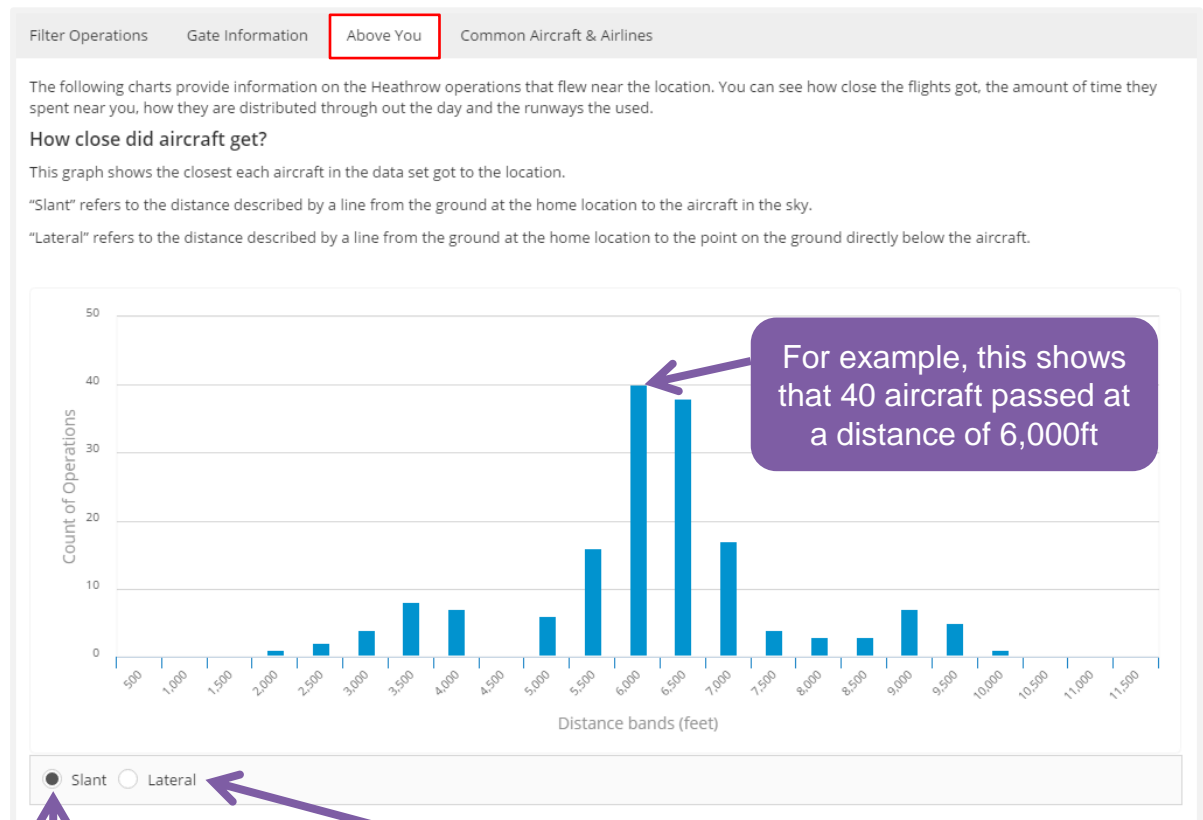
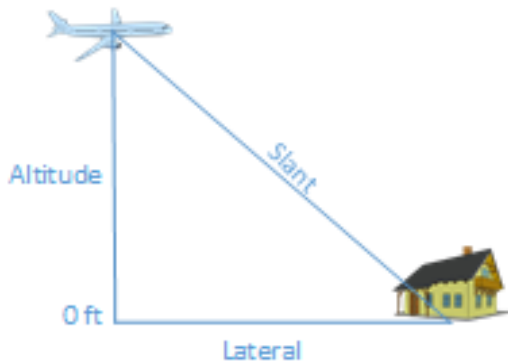
Check these boxes to look at departures, arrivals or both

STEP 17 How close did aircraft get?

This table shows you how far aircraft were from your property

The heights shown are based on the minimum distance of each aircraft from your location as it went over.

You can choose to look at either the **Slant** distance or the **Lateral** distance.



For example, this shows that 40 aircraft passed at a distance of 6,000ft

The **Slant** distance takes into account the altitude of the aircraft and its distance along the ground

The **Lateral** distance only takes into account the distance along the ground

Results

Aircraft in the home zone ('cone')

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STEP 18 Common aircraft and airlines

This chart shows which aircraft types and airlines entered the **home zone** ('cone') during the time period you selected.

This shows the number of times that aircraft entered the home zone. These results will be different from the gate results on page 16 which show the number of times that aircraft passed through the gate

The passenger count is based on the nominal capacity of the aircraft

This shows the average minimum height for each aircraft type or airline

Click here to choose between results based on aircraft types or airlines

Aircraft Type Airline

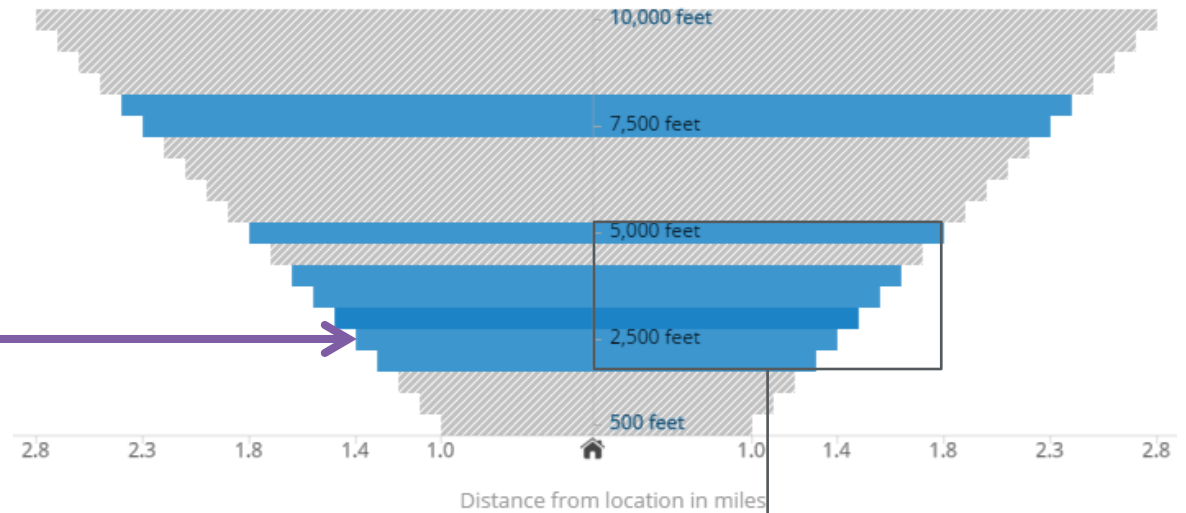
The table shows the nine most common aircraft types or airlines that passed through the gate

AIRCRAFT	COUNT OF OPERATIONS	AVERAGE PASSENGER CAPACITY	MINIMUM ALTITUDE (FEET)
319	32	140	3,050
321	29	188	2,850
32A	26	175	2,950
772	13	247	2,150
763	9	251	2,700
77W	9	335	2,850
744	5	321	2,900
320	3	200	2,750
388	3	555	2,000
Others	7	205	3,250

STEP 19 Count of operations by minimum altitude

This final chart provides another way of seeing the height of aircraft over your home.

Hover over the chart to see the number of aircraft at each altitude



In this example 38 aircraft passed through the home zone at a minimum altitude between 2,000ft and 2,500ft



The chart shows the minimum altitude of each aircraft as it passes through the **home zone ('cone')**. Altitudes are shown above mean sea level and do not take into account the elevation of the home location.

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