Replacement of Instrument Landing System (ILS) Runway 09L – March 2017

We are replacing Heathrow's landing systems – known as the Instrument Landing Systems (ILS). The ILS is used by aircraft landing at Heathrow. There are four systems at Heathrow – one at either end of each runway.

Although we're planning to minimise the impact on our operations and local communities as much as possible, there may be periods when aircraft land out of the usual alternation pattern depending on the wind conditions.

What is an ILS?

Aircraft follow a radio beam known as the Instrument Landing System (ILS) when landing at Heathrow. There is one beam aligned with the centreline of the runway at each end to ensure that aircraft approach in a straight line. It is a safety-critical system that ensures the safe and efficient arrival of landing aircraft.

Why is it being replaced?

The existing systems are approaching their end of life – they were last replaced approximately 15 years ago.

What does the work involve?

To minimise the time where there is no ILS in operation for a particular runway end, the new ILS has already been built behind the existing ILS. We will turn off the old ILS and then turn on and 'commission' the new one so that it is safe to use.

How many systems are being replaced?

In total four systems are being replaced – one for each runway end. Three have already been completed so we are doing the final one.

Westerly operations – northern runway (27R) [COMPLETED - August 2015]

Westerly operations – southern runway (27L) [COMPLETED - September 2015]

Easterly operations – southern runway (09R) [COMPLETED - April 2016]

• Easterly operations – northern runway (09L) [EXPECTED COMPLETION - March 2017]

Wind direction

The direction planes fly at Heathrow depends on the direction of the wind. They must take off and land into the wind for safety reasons.

'Westerly operations' – this is when aircraft arrive from the east (over London) and take off towards the west (over Berkshire/Surrey). Westerly operations occur around 70% of the year.

'Easterly operations' – this is when aircraft arrive from the west (over Berkshire) and depart towards London. Easterly operations occur around 30% of the year.

Which system is being replaced and when?

The work to replace the final ILS for the northern runway (09L) for easterly operations is expected to begin on Saturday 4th March depending on forecasted weather.

How long will the replacement take?

If all goes to plan, the work should take 5-6 days to complete.

Could the work take longer than planned?

Every effort will be made to ensure that we can complete the work in the timescale given. However, poor weather or unforeseen circumstances could impact on the planned schedule of works. It is also possible that it may take less time than expected.

Why are you starting the work now?

To minimise the impact on local communities we will carry out the work on the easterly landing system when a strong period of westerly operations (i.e. when there are westerly winds) is forecast.

What does this mean for local communities?

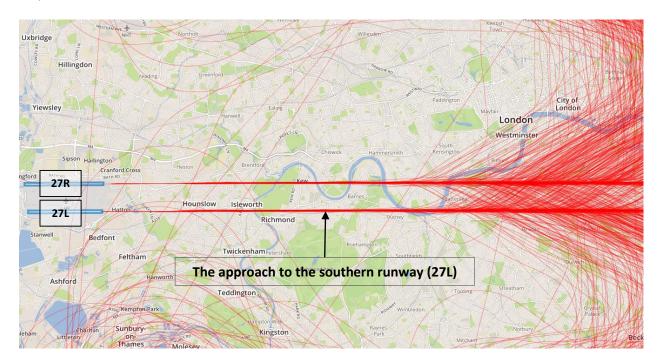
Because we are due to be operating on westerlies while the replacement work is taking place, there should be no impact to normal operations until the final day of the works. On the final day (expected to be Thursday 9th March) our normal runway alternation programme will be suspended. This is sometimes referred to as 'de-alternation' or landing 'out of alternation'. The northern runway will not be able to be used for arrivals for 24 hours, meaning aircraft will have to use the southern runway (27L) as the main arrivals runway (rather than for half the day as normal). This consequently means that departing aircraft will have to use the northern runway (27R) throughout the whole day.

Will aircraft not be able to land on 09L at all during this period if there are easterly winds?

The ILS being replaced will be out of use for the whole of this period, although other navigational systems can be used for arrivals. However, not all aircraft are equipped with these alternate systems as the ILS is the predominant navigational aid for arriving aircraft at Heathrow.

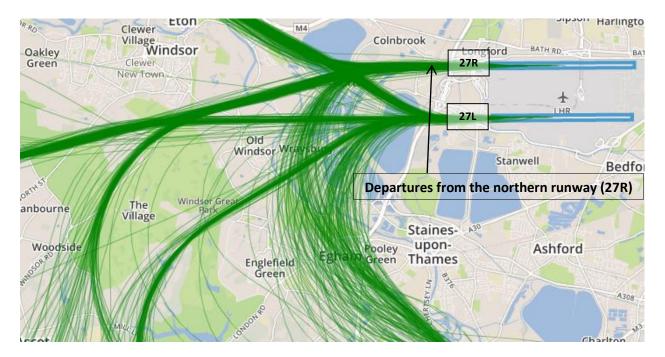
What areas under the final approach will be affected?

Communities located under the final approach into the southern runway on westerly operations (27L). The map below illustrates this.



What areas will be affected by departures?

Communities located closest to the end of the northern runway (27R) as illustrated below.



What happens if the wind changes to easterlies during the works?

There is no runway alternation during the day on easterly operations due to the historic Cranford Agreement. So when operating on easterlies we use the southern runway (09R) for departures and the northern runway (09L) for arrivals. However, during the ILS works we would have to use to southern runway (09R) for arrivals and the northern runway (09L) for departures. Because changes to our taxiway infrastructure are necessary before the northern runway can be fully used for departures on easterly operations, we would prefer to carry out the works during a period of westerly operations. For more information about the Cranford Agreement click here.

