
Runway Safety Awareness Package



This package has been produced by Heathrow in partnership with:

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Before starting work, take a moment to think about how a work site or maintenance activity may affect the runway. What do you need to do to play your part in preventing a runway incursion? Always lookout for runway signage, lighting and paint markings.

**IF IN DOUBT ABOUT WHERE YOU ARE,
STOP BEFORE PROCEEDING.**

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The information contained within this package is correct at the time of publication, however drivers should always refer to the latest procedures, instructions and training which takes precedence over safety promotion material. It is the responsibility of all employers to ensure that this information is brought to the attention of their staff.

About this Publication

This package has been created to raise awareness of runway safety and promote safe working practices. It has been written primarily for contractors and other parties who operate on or next to runways as part of their duties, but do not have Manoeuvring Area ('M') or Runway ('R') Airside Driving Permits (ADPs).

Runway Safety

Airfield Operations will always escort non 'M' and 'R' drivers when entering a live runway, however it's important that everyone (drivers and those operating on foot) recognise runway entry points and identify the features associated with them. Whilst paint markings, lights and signage play an important role, they are the last defences.

Knowledge and Awareness is the most effective safeguard. Runway incursions represent one of the most significant aviation hazards - a range of factors have contributed to previous runway incursions, including loss of situational awareness, distraction and confusion.

A RUNWAY INCURSION IS THE INCORRECT PRESENCE OF AN AIRCRAFT, VEHICLE OR PERSON ON THE PROTECTED AREA OF A SURFACE DESIGNATED FOR THE LANDING AND TAKE-OFF OF AIRCRAFT.



This section describes procedures relating to LIVE runways, which are under ATC control. It's crucial that everyone who operates near to or on a live runway has a good level of runway safety awareness.

Background Information

At Heathrow there are two runways (the Northern Runway: 09L/27R, and the Southern Runway: 09R/27L). The airfield is said to be on 'westerly operations' when aircraft are using Runways 27R and 27L, and 'easterly operations' when Runways 09L and 09R are in use. The wind direction determines which runways are used, as aircraft take-off and land into wind.

When a runway is 'live', Air Traffic Control (ATC) need to be contacted on the appropriate radio frequency to request access to the runway. This applies to drivers with an 'R' ADP only. When the runway is closed, the Airfield Operations Control Room (AfCR) becomes the controlling authority for the runway. The daily Night Works Map produced by the Airfield Duty Manager (AfDM) each night, provides relevant information about runway status.

DRIVERS SHOULD ALWAYS CARRY A CURRENT AERODROME MAP.



Runway Holding Position Paint Markings

There are two different types of Runway Holding Point Markings. At some runway entry points at Heathrow, you will see just one of these types as you approach the runway. In other locations, you will see both. The reason for this, and what the runway holding points are called (i.e. CAT I, CAT II/III bar) is explained at the end of this section.

NO PART OF YOUR VEHICLE, EQUIPMENT OR PERSON SHOULD CROSS THESE MARKINGS WITHOUT ATC PERMISSION

Pattern 'A'

Also known as the CAT I ("Cat one bar").

Pattern 'A' runway holding position marking is always the last holding position prior to entering a runway.



At Heathrow this will either indicate a CAT I holding point, or a combined CAT I and CAT II/III holding point (when there is only one runway holding point).

Pattern 'B'

Also known as the CAT II/III ("Cat two/three bar")

This runway holding position marking is used to identify a holding point further away from a runway than a Pattern 'A' marking. The Pattern 'B' runway holding position looks similar to a ladder across the taxiway. These paint markings are 137 metres from the runway centreline.



At Heathrow this will indicate a CAT II/III holding point (where there is a separate CAT I holding point ahead).



Why are there two types of runway holding point and why are they known as 'Cat I or Cat II/III'?

CAT I

Most aircraft use a navigation aid (Navaid) called the Instrument Landing System (ILS). A CAT 1 approach is normally flown to minimums (cloudbase and visibility) using autopilot (which is relying on the ILS).

When the pilots become visual with the runway, the autopilot is disconnected, and the landing is flown manually. This is known as CAT 1 conditions and allows the CAT I runway holding points to be used.

CAT II/III

In low or reduced visibility, landing aircraft are using the ILS signals down to ground level. This is known as CAT II/III conditions. The CAT II/III runways holding points must be used. These are further away from the runway and ILS equipment. This is to reduce the risk of interference to the ILS signals by objects such as aircraft and vehicles.



During CAT I conditions, objects can be closer to the runway and ILS equipment without the risk of causing interference to landing aircraft. During CAT II/III conditions, objects need be further away.

Enhanced Runway

Holding Point Markings



Red paint containing white text stating Runway Designators and 'RUNWAY AHEAD' painted on the taxiway surface prior to the runway holding position. This provides a supplementary visual cue alerting pilots and drivers of an upcoming runway holding position.

Enhanced Taxiway

Centreline Markings



Enhanced markings consist of an additional 15 dashed lines on both sides of the solid taxiway centreline. They are intended to provide an additional visual cue for pilots and drivers approaching a runway.

Runway Mandatory Signage

Signage used for Runway entry points are

WHITE TEXT ON A RED BACKGROUND

These signs are co-located with the painted runway holding position markings.

They are used to alert pilots and drivers they are approaching a runway.

The **YELLOW TEXT ON A BLACK BACKGROUND**

accompanying the mandatory signage indicates your position.

Remember

RED and **WHITE RUNWAY** in SIGHT! -- ✈ --

Enhanced Taxiway

Centreline Markings



The example above indicates that your location is **N6**, holding short of Runway 27L/09R. The Runway 27L threshold is to your left, and the 09R threshold to your right.



The example above indicates that you are at location **S4W**, holding short of Runway 09R/27L. The Runway 09R threshold is to your left; the Runway 27L threshold is to your right.

Lighting

Runway Guard Lights

Runway Guard Lights consist of two sets of lights which flash alternately. They are positioned each side of the Taxiway at Runway Holding Points and warn pilots and drivers they are approaching an active runway. These lights are ON 24hrs a day. Only the relevant Runway Guard Light unit (i.e. Cat I or Cat II/III runway holding points) will be illuminated.



Runway Guard Bars (Red Stop Bars)

Runway Guard Bars (red stop bars) consist of inset red lights, 3m apart across the full width of the taxiway in line with the runway holding position paint marking.

They are installed at all runway holding points (except on vehicle access roads on the northern side of Runway 09L/27R) and operate 24 hours a day. They are an additional visual cue for pilots and drivers that they are approaching a runway. Only the relevant operational runway guard bar (i.e. Cat I or Cat II/III runway holding point) is illuminated.



DRIVERS MUST NOT CROSS A LIT RED RUNWAY GUARD BAR

Runway Safety Awareness

Runway incursions present a significant hazard. Before starting work (that's close to a runway), think about how a work site or maintenance activity may affect the runway, and how you can play your part in keeping everyone safe.

Typical layout of a runway entry point – **look out for these features:**



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DO:

- ✓ Look out for the features to know when you're close to a runway
- ✓ Know in advance where you're going to be setting up a works area, or working
- ✓ STOP if you're unsure

DON'T:

- ✗ Cross an illuminated red Runway Guard Bar / Runway Holding Point Marking
- ✗ Go outside the worksite boundary
- ✗ Ignore safety briefing and instructions

Away from runway entry points, look for the burnline which marks the runway boundary. Do not enter ILS critical areas (marked with pegs and signage) without permission from Airfield Operations and ATC.



ILS Critical Areas

There are eight ILS Critical Areas at Heathrow (marked with red boxes on Airfield Maps).

On the airfield they are marked by RED and WHITE pegs and signage. Signals transmitted from these aerals are susceptible to interference/distortion by objects such as vehicles and aircraft on the ground. Therefore, ILS critical areas are restricted and must not be entered without permission from ATC.



The 'burnline' pictured below represents the edge of the runway on the grass where there are no paint markings. It is situated 107.5m from the runway centreline. It must not be crossed without ATC permission.



Enquiries regarding the content of this publication should be addressed to

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