HEATHROW EXPANSION:
AIRSPACE AND INDEPENDENT PARALLEL APPROACHES UPDATE

HEATHROW COMMUNITY NOISE FORUM -19TH SEPTEMBER 2018

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SCOPE

- **Heathrow Expansion; Airspace Update**
  - Design Principles submission
  - CAP1616 Stage 2
  - What we will be consulting on in the second consultation

- **Independent Parallel Approaches (IPA)**
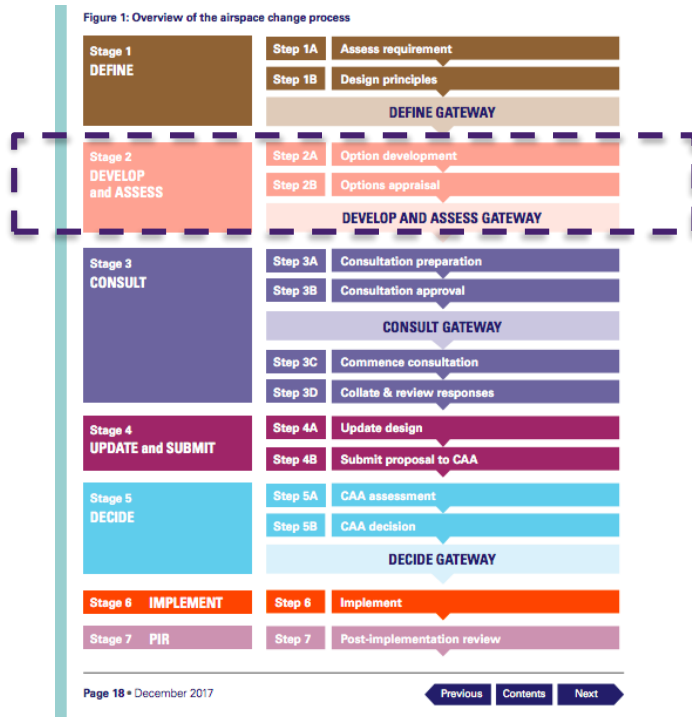 - Update and next steps

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HEATHROW EXPANSION: AIRSPACE UPDATE

What have we done? Where are we now? What happens next?

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DESIGN PRINCIPLES SUBMISSION SUMMARY

- Design Principles submission sent to CAA on 31st August

- CAA will announce recommendation on submission on 28th September at monthly Gateway meeting

- Our submission and supporting documents have now been published on the Heathrow Expansion website www.heathrowexpansion.com

HEATHROW'S AIRSPACE DESIGN PRINCIPLES FOR EXPANSION

AIRSPACE PRINCIPLES

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NEXT STEPS IN THE CAP1616 PROCESS

Figure 1: Overview of the airspace change process

The next stage of the process is Stage 2 – Develop and Assess

Stage 2A – Options development

- Develop a comprehensive list of options that address the Statement of Need and that align with the design principles from Stage 1

Stage 2B – Options appraisal

- Each option assessed to understand impact, both positive and negative.

- Appraisal against requirements agreed by the CAA in an iterative approach over Stage 2 (Initial), Stage 3 (Full) and Stage 4 (Final) Gateways

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STAGE 2 - DESIGN AND ASSESS – OPTIONS DEVELOPMENT AND OPTIONS APPRAISAL

Heathrow Expansion: Design Envelopes

- The design envelopes we show the broad geographical areas within which potential flight path/s could be positioned

- The design envelope options are limited by factors such as the position of neighbouring routes, current aircraft technology, current operations/systems at the Air Traffic Control centres and current airspace design procedures

- In this consultation we will be asking you what local factors (inside the envelopes) should be taken into account when developing new flight paths within this geographical area

Illustrative purposes only

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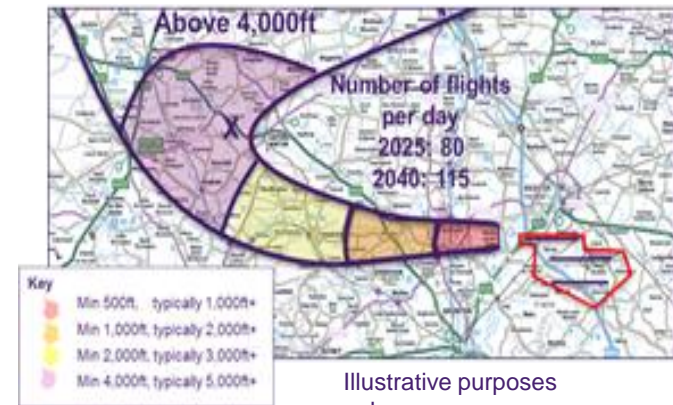
INDEPENDENT PARALLEL APPROACHES - UPDATE AND NEXT STEPS

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LANDING ON THE DEPARTURES RUNWAY

Although most of the time we use one runway for departures and one for arrivals, when there is a build-up of delays both runways can be used for landing. This can also be known as TEAM (Tactically Enhanced Arrival Measures)

We can land on the departures runway when airborne holding delay reaches certain thresholds:

- Between 6.00am and 6.29am where there is a forecast delay of 10 minutes or more
- Between 6.30am and 7.00am where there is a forecast delay of five minutes or more

(Between 6.00am and 7.00am there is <u>no limit</u> on the number of arrivals that can land on the designated departures runway)

- After 7.00am where there is a forecast delay of 20 minutes or more[1]

(After 7.00am no more than <u>six arrivals per hour</u> are permitted to land on the designated departures runway[2])
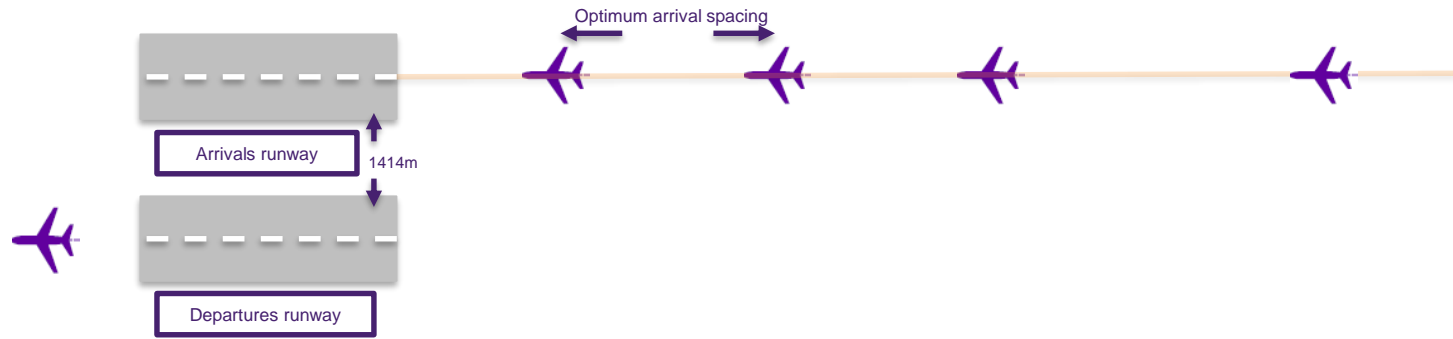
Easterly operations

Landing on the departures runway after 6.00am is also permitted on easterly operations. This is a similar practice to westerly operations although the Government limits do not apply to the numbers of arriving aircraft landing on the departures runway after 7.00am.
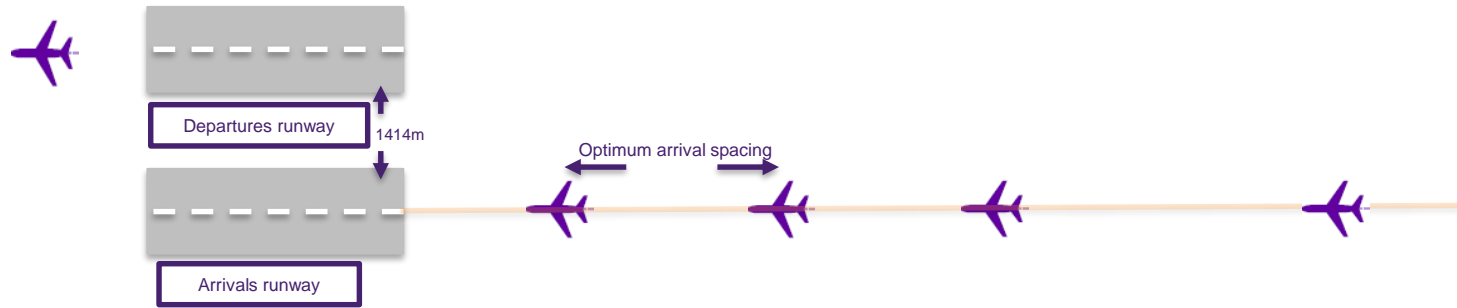
1 These rules apply to westerly operations only.
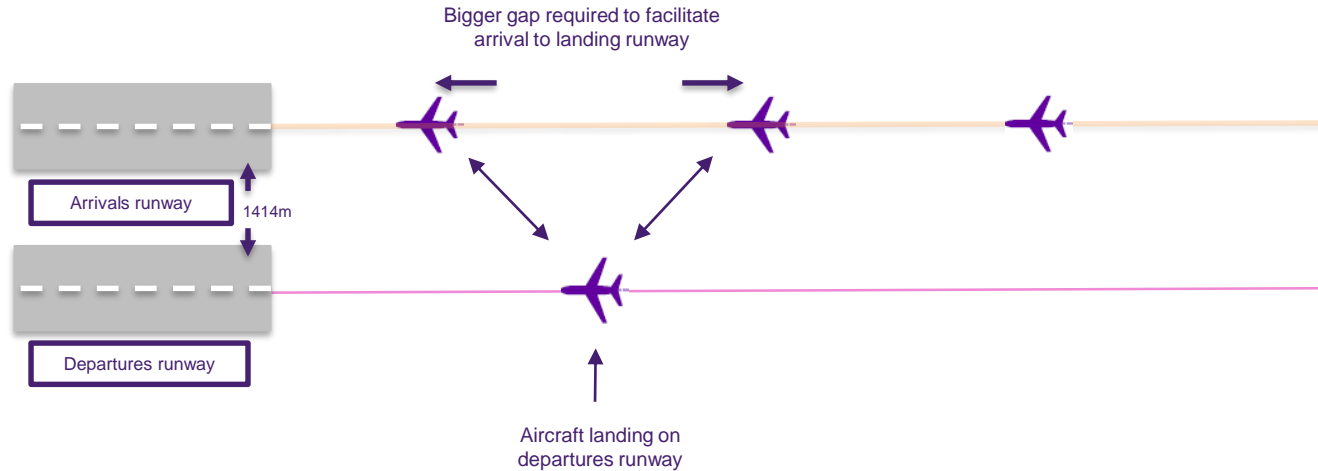2 Landing more than 6 per hour may occur for safety reasons only

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CURRENT OPERATIONS

Optimum arrival spacing

Arrivals runway

1414m

Departures runway

ALTERNATING TO
(westerly only)

Departures runway

1414m

Optimum arrival spacing

Arrivals runway

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LANDING ON THE DEPARTURES RUNWAY

Bigger gap required to facilitate
arrival to landing runway

Arrivals runway

1414m

Departures runway
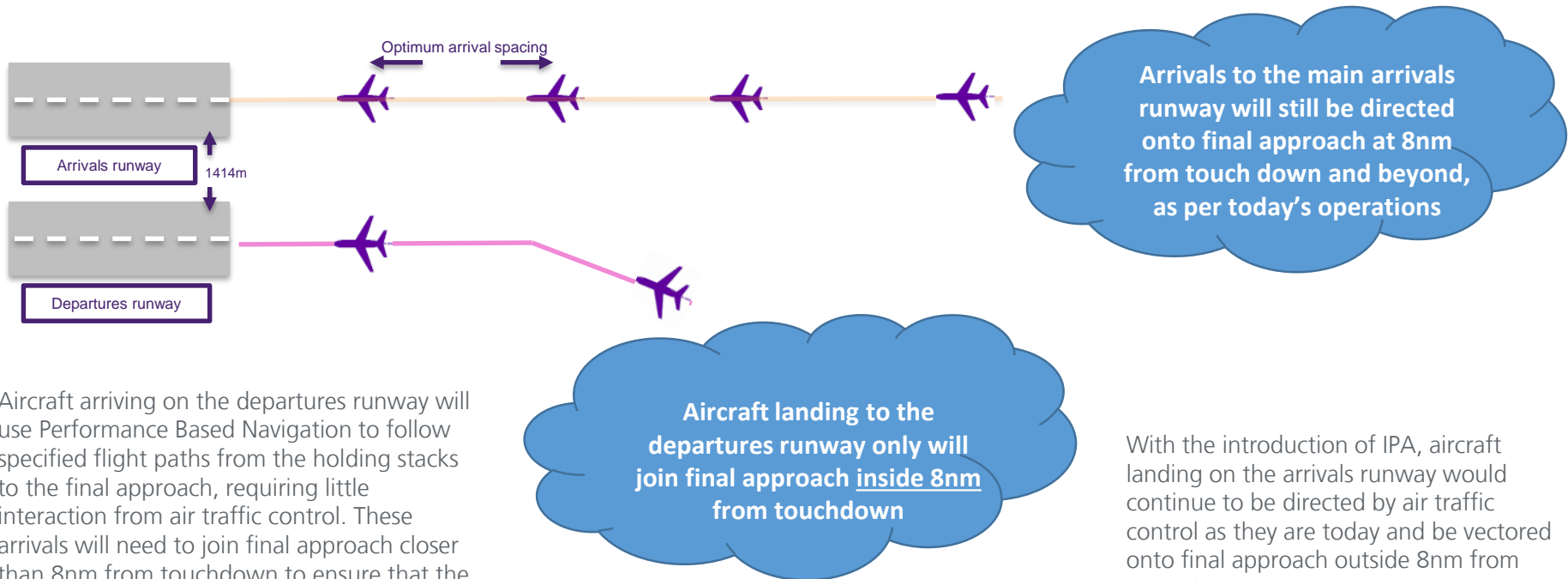
Aircraft landing on
departures runway

When arriving aircraft are allowed to land on the departures runway, arrivals to the departures and arrivals runway must be spaced by at least two nautical miles

To achieve this, the spacing between aircraft on the landing runway has to be increased compared to when only one runway is used for landing

This additional spacing means that fewer aircraft land on the arrivals runway. So, even if six aircraft were to land on the departures runway in an hour, the overall landing rate across both runways for that hour only increases, on average, by two aircraft

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WHAT IS IPA?

Independent Parallel Approaches (IPA) will seek to remove the dependency between simultaneous arrivals to both runways so that the landing rate on the arrivals runway does not have to reduce to enable the additional aircraft to land on the departures runway.

Optimum arrival spacing

Arrivals runway

1414m

Departures runway

Arrivals to the main arrivals runway will still be directed onto final approach at 8nm from touch down and beyond, as per today's operations

Aircraft landing to the departures runway only will join final approach inside 8nm from touchdown

Aircraft arriving on the departures runway will use Performance Based Navigation to follow specified flight paths from the holding stacks to the final approach, requiring little interaction from air traffic control. These arrivals will need to join final approach closer than 8nm from touchdown to ensure that the tracks of the aircraft using the main landing runway remain unchanged.
This will require a change to Heathrow's Noise Abatement procedure, subject to approval from The Department for Transport.

With the introduction of IPA, aircraft landing on the arrivals runway would continue to be directed by air traffic control as they are today and be vectored onto final approach outside 8nm from touchdown.

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IPA UPDATE

- Whilst Heathrow is operating within its maximum capacity of 480,000 Annual Transport Movements (ATMs) IPA will increase resilience which will enable more efficient prevention of and recovery from delays. We are therefore planning to introduce IPA in 2022, regardless of whether we expand

- As part of our DCO we are also considering putting forward plans to increase the ATM cap to release additional capacity. This would be an interim measure some years ahead of the opening of the new runway

- The use of IPA between 0600 and 0700 has the potential to directly support an increase in declared capacity in that hour. IPA also provides increased resilience if there are additional ATMs before the opening of a new runway.

- IPA is also one of a host of measures (eTBS, RECAT, EU598) which will support Heathrow's proposal to enable a longer scheduled night time ban.

- By increasing resilience, IPA has the potential benefits of:
  – Fewer arrivals on the departures runway, improving respite periods because we can land more aircraft in the hours when we do land on the departures runway
  – A reduction in the number of late running flights because we are more efficient when we land on the departures runway
  – A reduction in aircraft holding in one of Heathrow's stacks because we prevent and recover more quickly from delay

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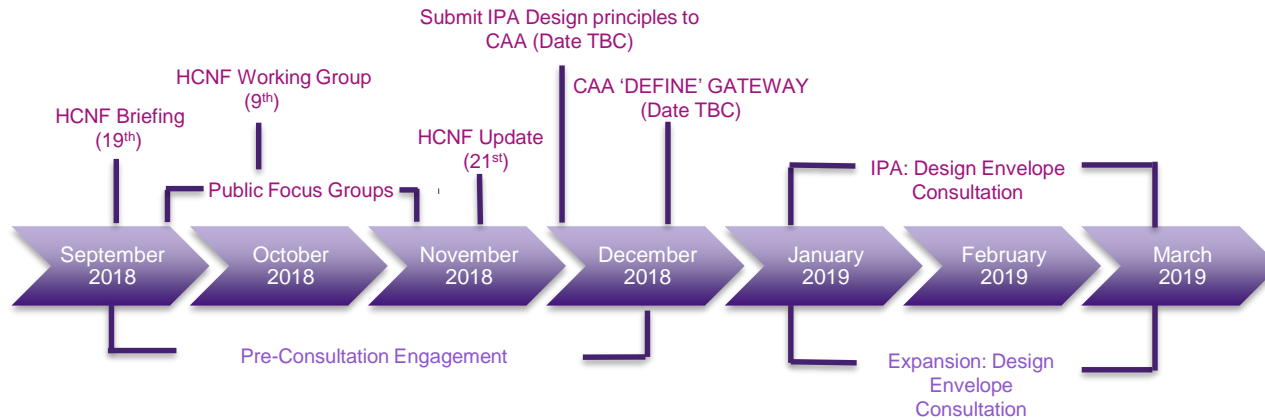# IPA – WHAT DOES THIS MEAN IN PRACTICE?

- The new flight paths needed for IPA will be using Performance Based Navigation (PBN) and will need to 'fit' into Heathrow's existing airspace and for safety reasons need to be designed to avoid the existing arrival swathes into Heathrow.

- Therefore, those aircraft landing on the departures runway will not be able to operate wholly within the existing arrivals swathe and will fly over some new areas.

- The existing Heathrow arrivals will remain unchanged as they will continue to operate within Heathrow's current arrival swathe.

- We will not be seeking to make a change to the rules on the maximum number of aircraft allowed to land on the departures runway per hour.

- The IPA routes will only exist in a two-runway environment and will be superseded by our airspace design for expansion.

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IPA DESIGN PRINCIPLES – HOW WILL WE DO THIS?

- The CAA's Airspace Change Process (ACP) requires us to engage on design principles specifically for IPA - as this is a separate airspace change from expansion

- We have just finished developing our design principles for expansion and the CAA are currently assessing them. We plan to use those as the starting point for IPA because we believe they are transferable across all Heathrow's ACPs. Stakeholders will now be asked if there are any reasons why those design principles and their prioritisation should not also apply to IPA

- Between now and mid-November, we will be engaging with Local Authorities, Heathrow Community Noise Forum (HCNF), Heathrow Community Engagement Board (HCEB), Industry Bodies (NATMAC and FASIIG) as well as arranging public focus groups to develop and agree our IPA design principles

- We plan to hold a workshop on this with Heathrow Community Noise Forum members 9th October 2018 (instead of Working Group 1 which has been merged with Working Group 2). HCNF will be given 4 weeks from that date within which we request feedback

- We will then schedule another session to present the outcome of the IPA Design Principles engagement

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TIMELINE: AIRSPACE CHANGE FOR EXPANSION AND IPA

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