



# Design Principles

Bournemouth Airport FASI(S) Airspace Change Proposal

# Overview

- Why?
- CAP 1616 Process
- Impact on BOH
- Noise Preferential Routes
- Draft Design Principles
- Survey
- Questions

# Why?

- **Airspace Modernisation Strategy (AMS)**
  - Published in Dec 2018 and replaced Future Airspace Strategy (FAS);
  - Roadmap that sets out the 'Ways', 'Ends' and 'Means' of modernising UK airspace through 15 initiatives; and
  - One of these initiatives is the fundamental redesign of the Terminal Route Network using satellite navigation (Performance-Based Navigation (PBN)).
- **Airspace Change Organising Group (ACOG)**
  - Established in 2019 as a fully independent organisation (at the request of both the DfT and the CAA);
  - Responsible for coordinated delivery of key aspects of the AMS;
  - Delivery of two major national airspace change programmes known as Future Airspace Implementation South (FASI-S) and Future Airspace Implementation North (FASI-N);
  - FASI-S is a complete redesign of the existing airspace structure in Southern England; and
  - BOH is one of nineteen airports included within this programme.

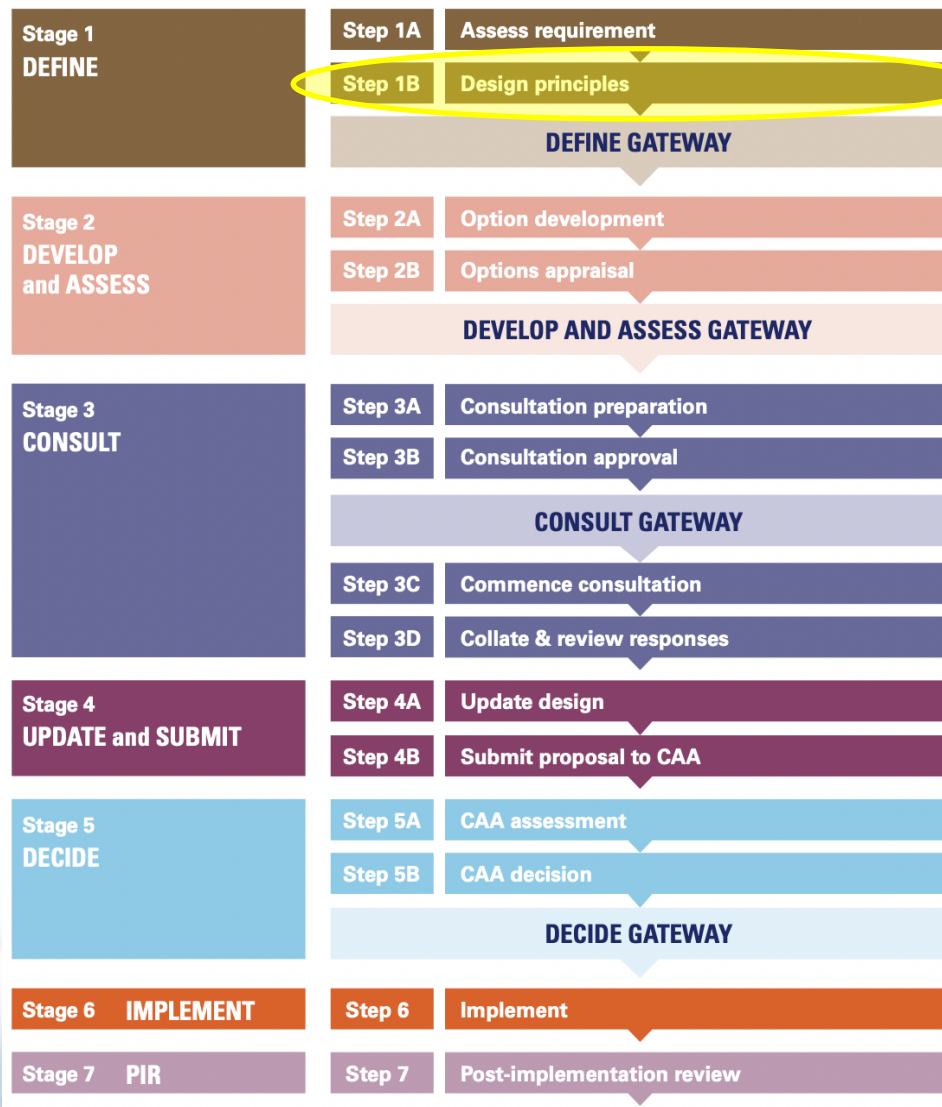
# Another ACP.....Why?

- Performance-Based Navigation (PBN)
  - One of the major aims of the AMS is to optimise future airspace designs to take account of modern aircraft performance and functional capabilities;
  - PBN is being adopted world-wide and States are expected to modernise their airspace;
  - In parallel, the UK navigation infrastructure is being optimised to take advantage of the lateral navigation accuracy from Global Navigation Satellite Systems (GNSS) while retaining adequate conventional ground-based navigation aids to ensure both resilience and contingency measures.

# A nationwide programme of modernisation

**ONE SKY  
ONE PLAN**

# CAP1616 Process



We are here

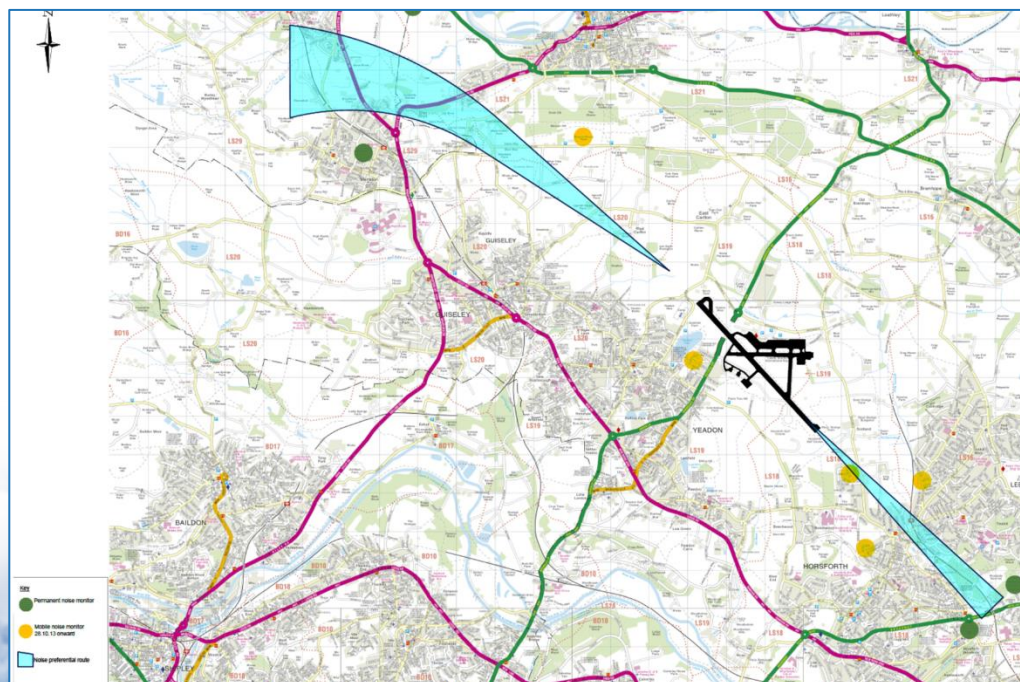
- 14 Steps;
- 7 Stages;
- 4 Gateways;
- 2 years minimum.

# Impact on BOH

- Bournemouth Airport is required to introduce the following procedures:
  - PBN approaches in the form of Required Navigation Performance (RNP) Instrument Approach Procedures (IAPs);
  - PBN departure routes (known as Standard Instrument Departures (SIDs) to link the Airport to the evolving airspace structure above 7,000ft; and
  - Arrival Transitions to enable aircraft to get established on an approach into the Airport.
- It is likely that in the development of options for new departure, arrival and approach profiles, that the airspace configuration may also require re-configuration.

# Noise Preferential Routes (NPRs)

- Noise Preferential Routes (NPRs) are in force to ensure that, wherever possible, departing jet aircraft fly over the least populated areas. All departing jet aircraft are required to follow the NPRs, the only exceptions being for safety or operational reasons, such as the avoidance of adverse weather;
- No established NPRs for arriving aircraft and turboprop aircraft are exempt.





# Noise Preferential Routes (NPRs)

- NPRs are defined by the Local Authority under a Section 106 planning agreement;
- The NPR swathe illustrates a containment area within which all departing jet aircraft should remain, until the end is reached (at 3.5 DME);
- NPRs are published in the Aeronautical Information Publication (AIP), however, their ownership and enforcement is the responsibility of the Local Authority and not the DfT or the CAA;
- The introduction of PBN will improve the accuracy and compliance with the NPR;
- NPRs might evolve by mutual agreement should an improvement be possible.

# Draft Design Principles

## **SAFETY**

DP1 – Importance of Safety

## **ENVIRONMENTAL**

DP2 – Overflight

DP3 – Noise Footprint

DP4 – Tranquillity

DP5 – Emissions and Air Quality

## **OPERATIONAL**

DP6 – Operational Requirements

DP7 – Airspace Dimensions

DP8 – Airspace Availability

DP9 – Airspace Complexity

## **TECHNICAL**

DP10 – Compliance

DP11 – Aircraft Category

DP12 – Equipage and Approval

DP13 – Arrival Transitions

DP14 – Departure Procedures

DP15 – Coordination

DP16 – Independence

## **ECONOMIC**

DP17 – Cost of Change

DP18 – Operational Cost

## **STRATEGIC POLICY**

DP19 – AMS Realisation

DP20 – PBN

# Safety

**DP1 – Importance of Safety** – The airspace design and its operation must be as safe or safer than today.

# Environmental

**DP2 – Overflight** – The new procedures should not increase the number of people overflown by aircraft (below 7,000 feet) using the Airport.

**DP3 – Noise Footprint** – The new procedures should not increase the noise footprint of the existing airport operation, i.e. it should not increase the number of people affected within the 51dBA LAeq 16 hour contour.

**DP4 – Tranquillity** – Implementation should minimise disturbance to the Moors River System SSSI and, where possible, minimise the impact upon the New Forest National Park and the nearby Areas of Outstanding National Beauty (AONB).

**DP5 – Emissions and Air Quality** – The new design should seek to minimise the growth in aircraft emissions, the further degradation in local air quality and adverse ecological impacts to address growing concerns about the impact of aviation on climate change.

# Operational

**DP6 – Operational Requirements** – The new procedures should address the needs of most operators at Bournemouth Airport.

**DP7 – Airspace Dimensions** – The airspace design should afford the appropriate volume of controlled airspace to contain and support commercial air transport for both runways, enable safe, efficient access for other types of operation and release controlled airspace that is not required.

**DP8 – Airspace Availability** – Sufficient controlled airspace should be available to support LBA operations independently.

**DP9 – Airspace Complexity** – The airspace design should seek to reduce complexity and bottlenecks in controlled and uncontrolled airspace and contribute to a reduction in airspace infringements.

# Technical

**DP10 – Compliance** – The design shall be fully compliant with the design criteria stated in ICAO Doc 8168 (PANS OPS), acceptable to the CAA and, the implementation shall follow all applicable legislation and regulations.

**DP11 – Aircraft Category** – The new procedures shall be technically flyable by all aircraft types in approach Speed Categories A through D.

**DP12 – Equipage and Approval** – The new procedures shall be flyable by the majority of Bournemouth commercial aircraft operators.

**DP13 – Arrival Transitions** – The arrival transition designs shall seamlessly integrate with the new RNP instrument approach procedures at Bournemouth Airport and if possible, the existing ILS approach procedures.

**DP14 – Departure Procedures** – The Standard Instrument Departures (SIDs) shall terminate at the agreed 'Gateways' into the route network and are deconflicted from the arrival transitions.

**DP15 – Coordination** – The new procedures result in a reduction in the amount of tactical coordination required by ATCOs.

**DP16 – Independence** – The new procedures and airspace configuration should enable Bournemouth Airport to operate independently of Southampton Radar.

# Economic

**DP17 – Cost of Change** – The new procedures shall be implemented in a cost-effective manner.

**DP18 – Operational Cost** – Provided it does not have an adverse impact of community disturbance, procedures should be designed to optimise fuel efficiency.

# Strategic Policy

**DP19 – AMS Realisation** – This ACP must serve to further, and not conflict with, the realisation of the AMS.

*Note: It is accepted by the CAA that adherence to this DP, in what is a coordinated modernisation programme, may impact upon the development of ‘Options’.*

**DP20 – PBN** – The new procedures should benefit from as many of the potential benefits of PBN implementation as are practicable. This includes predictability, efficiency, continuous climb and descent operations with the intention of reducing carbon emissions.



# What do we need from you?

- CAP1616 requires that a discussion with affected stakeholders takes place. Local stakeholders normally include local authority elected representatives, local community groups, the Airport Consultative Committee (ACC) and representatives of local General Aviation (GA) organisations or clubs;
- We need your views on the Draft Design Principles;
- Remember, this isn't procedure designs or volumes of airspace at this stage – it is conceptual principles that will inform the development of design options;
- Please populate the survey. The feedback received will influence the Final Design Principles.

# Questions?