Bournemouth FASI(S) ACP

An Introduction to Design Principles

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Executive Summary

We at Bournemouth Airport are acutely aware that we have engaged with our stakeholders on a public Airspace Change Proposal (ACP) consultation and that it may seem odd that we are coming to you again for feedback on further changes to airspace. The most recent ACP was specifically for the introduction of new Instrument Approach Procedures (IAPs) that utilised modern navigation methods, namely Performance-Based Navigation (PBN). Please be assured that your time and consideration on the introduction of these new IAPs has not been wasted and the proposals are with the CAA for their final decision. These IAPs are compatible with the Civil Aviation Authority's (CAA) Airspace Modernisation Strategy (AMS) and form a part of the wider modernisation programme.

The CAA has written to 18 airports in the South-East of England (including Bournemouth) to advise them that it is essential that they participate in a programme of Airspace Modernisation. Airspace is a finite resource and if not managed effectively, it can lead to significant delays in air travel. This programme consists of a coordinated attempt to improve upon the efficiency of airspace usage across the region whilst implementing the latest technology with the aim of reducing the environmental impacts associated with aviation.

This document is intended to provide you with a background understanding of what Bournemouth Airport needs to address in this ACP. It should enable you to answer a short survey on the establishment of 'Design Principles' that will ultimately shape the development and assessment of 'Options' for change.

We would like to thank you again for your time, consideration and valuable input. We look forward to working with you to improve our system of flight procedures and our airspace configuration taking onboard the views of as many of our stakeholders as we can.

Abbreviations

ACOG	Airspace Change Organising Group
ACP	Airspace Change Proposal
AIP	Aeronautical Information Publication
AMS	Airspace Modernisation Strategy
ANSP	Air Navigation Services Provider
AONB	Areas of Outstanding National Beauty
ATC	Air Traffic Control
ATCO	Air Traffic Control Officer
CAA	Civil Aviation Authority
CAT	Commercial Air Transport
CTA	Control Area
CTR	Control Zone
dbA	A-weighted Decibels
DfT	Department for Transport
DME	Distance Measuring Equipment
DP	Design Principle
EASA	European Aviation Safety Agency
EGNOS	European Geostationary Navigation Overlay Service
FAS	Future Airspace Strategy
FASI(N)	Future Airspace Implementation North
FASI(S)	Future Airspace Implementation South
GA	General Aviation
GNSS	Global Navigation Satellite System
IAP	Instrument Approach Procedure
ICAO	International Civil Aviation Organisation
IFP	Instrument Flight Procedure
Leq	Equivalent Continuous Sound Level
LAeq	Equivalent A-weighted Continuous Sound Level
LPV	Localiser Performance with Vertical Guidance
MTWA	Maximum Take-Off Weight Authorised
NAP	Noise Action Plan
NDB	Non-Directional Beacon
NERL	NATS En-Route Limited

NPR	Noise Preferential Route
NTK	Noise and Track Keeping
PANS-OPS	Procedures for Air Navigation Services – Aircraft Operations
PBN	Performance Based Navigation
RNAV	Area Navigation
RNP	Required Navigational Performance
SIDs	Standard Instrument Departures
SSSI	Site of Specific Scientific Interest
STARs	Standard Arrival Procedures
VOR	VHF Omni Directional Range Finder

References

[1] CAP1711 – CAA Airspace Modernisation Strategy V1.0 dated Dec 2018

[2] UK Legislation - Transport Act 2000 – Section 70

[3] Commission Implementing Regulation EU 2018/1048 – PBN-IR

[4] CAP1616 – CAA Airspace Change - Guidance on the regulatory process for changing the notified airspace design and planned and permanent redistribution of air traffic, and on providing airspace information V4.0 dated March 2021

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1. Introduction

1.1. Airspace Modernisation Strategy – Why does Bournemouth need more change?

1.1.1. The Civil Aviation Authority (CAA) published its Airspace Modernisation Strategy (AMS) in December 2018. This Strategy was developed in response to the Department for Transport (DfT) tasking the CAA with preparing and maintaining a co-ordinated plan for the use of UK airspace up to 2040, including the modernisation of it.

1.1.2. The AMS, which replaced the Future Airspace Strategy (FAS), sets out the ways, means and ends of modernising airspace through 15 initiatives intended to modernise the design, technology and operations of airspace, initially focusing on the period until the end of 2024. Amongst other initiatives, this includes a fundamental redesign of the terminal route network using precise and flexible satellite navigation.

1.1.3. It describes what airspace modernisation must deliver, drawn from relevant national and international policy and law. Paragraphs 3.5-3.7 set out factors that airspace modernisation must delivery, drawn from Section 70 of the Transport Act 2000 and relevant policy as:

- the need to increase aviation capacity in the South East;
- for this growth to be sustainable; and
- for the need to make the best use of existing runways.

1.1.4. The UK's airspace, particularly that of southern England, was originally designed decades ago; it has evolved over time in a bid to manage the increasing volumes of climbing and descending aircraft travelling to and from the various airports all within close proximity. This complex evolution has resulted in an environmentally inefficient and overly complicated puzzle that places a burden on Air Traffic Controllers and in turn limits airspace capacity. Flights in southern England are forecast to double in the next 20 years; if the airspace is not modernised, delays and cancellations will become the norm.

1.1.5. The Airspace Change Organising Group (ACOG) was established in 2019 as a fully independent organisation at the request of the Department for Transport (DfT) and Civil Aviation Authority (CAA), to coordinate the delivery of key aspects of the AMS.

1.1.6. The requirement for ACOG is to coordinate the 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 Bournemouth Airport is one of 18 airports included within this programme. Our neighbour, Southampton Airport, is also included.

1.1.7. ACOG, in collaboration with NATS, En-route Plc (NERL) and each of the airports, must deliver a Masterplan that provides detailed information on the airspace design options under development, the potential areas of overlap between individual Airspace Change Proposals (ACPs) and the compromises and trade-offs that may need to be made to integrate them effectively.

1.1.8. Bournemouth Airport, just as with all the airports affected, must ensure that their modernisation proposals are aligned with neighbouring airports and connect efficiently with the network above. The FASI(S) airports are responsible for modernising or upgrading their individual arrival and departure routes up to 7,000ft. NERL are responsible for redesigning the route network above 7,000ft.

1.1.9. For more information, including a brief video, on the importance of modernising UK airspace, see https://www.ourfutureskies.uk/why-modernise/

1.1.10. **Why are you seeking my opinion on your airspace again?** We at Bournemouth Airport are acutely aware that we have recently undergone a public ACP consultation and that it may seem odd that we are coming to you again for feedback on further changes to airspace. The ongoing ACP was specifically for the introduction of new Instrument Approach Procedures (IAPs) that utilised modern navigation methods, namely Performance-Based Navigation. Please be assured that your time and consideration on the introduction of these new IAPs has not been wasted and the proposals are with the CAA for their final decision. These IAPs are compatible with the AMS and form a part of the modernisation programme.

1.2. Performance-Based Navigation

1.2.1. One of the major aims of the AMS is to optimise future airspace designs to take account of modern aircraft performance and functional capabilities and make them more efficient, saving time and fuel and reducing emissions.

1.2.2. Key to achieving this is through the application of Performance-Based Navigation (PBN). In parallel, the UK navigation infrastructure can also be 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.

1.2.3. PBN is being adopted world-wide and States are expected to modernise airspace through International, Regional and State level initiatives, including regulations. It impacts both the high-level airways and the lower-level arrival and departure routes into and out of airports and IAPs.

1.2.4. European-wide legislation has been developed (Commission Implementing Regulation EU 2018/1048 – PBN-IR) to drive the deployment of PBN in the European region to meet the international vision laid down by the International Civil Aviation Organisation (ICAO).

1.3. Impact upon Bournemouth Airport

1.3.1. Bournemouth Airport has already commenced the modernisation of its airspace having submitted a proposal for the introduction of PBN approaches in the form of Required Navigation Performance (RNP) IAPs. In addition, the FASI(S) programme will result in a requirement for the Airport to implement new:

- 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.

1.3.2. It is possible that in the development of options for new departure and arrival profiles for the airports in the Solent region, that the airspace configuration may also require re-configuration.

1.4. Bournemouth RNP IAP ACP

1.4.1. The ACP (ACP-2018-40) associated to the introduction of new IAPs is currently with the CAA for Regulatory Decision and details of the proposals can be found on the CAA's Airspace Change Portal (Search for Bournemouth International Airport Ltd as a Sponsor Organisation).

1.4.2. Bournemouth Airport would like to thank you for support in that engagement process and we hope to be able to introduce these new IAPs this year. Your efforts have not been wasted and your feedback will also prove valuable in the progression of this new ACP particularly in the development of Design Principles.

1.5. CAP1616 Process

1.5.1. ACPs are conducted using an established process laid down by the CAA in Civil Aviation publication (CAP) 1616. The airspace change process is designed to be transparent, comprehensible and proportionate, and is aligned the Government's policy on managing airspace.

1.5.2. The 7-stage process contains 14 'Steps' and 4 'Gateways'. The Change Sponsor must satisfy the CAA at each of these 'Gateways' that it has followed the process. Failure to do so results in the need to conduct further work until such time as the CAA is satisfied.

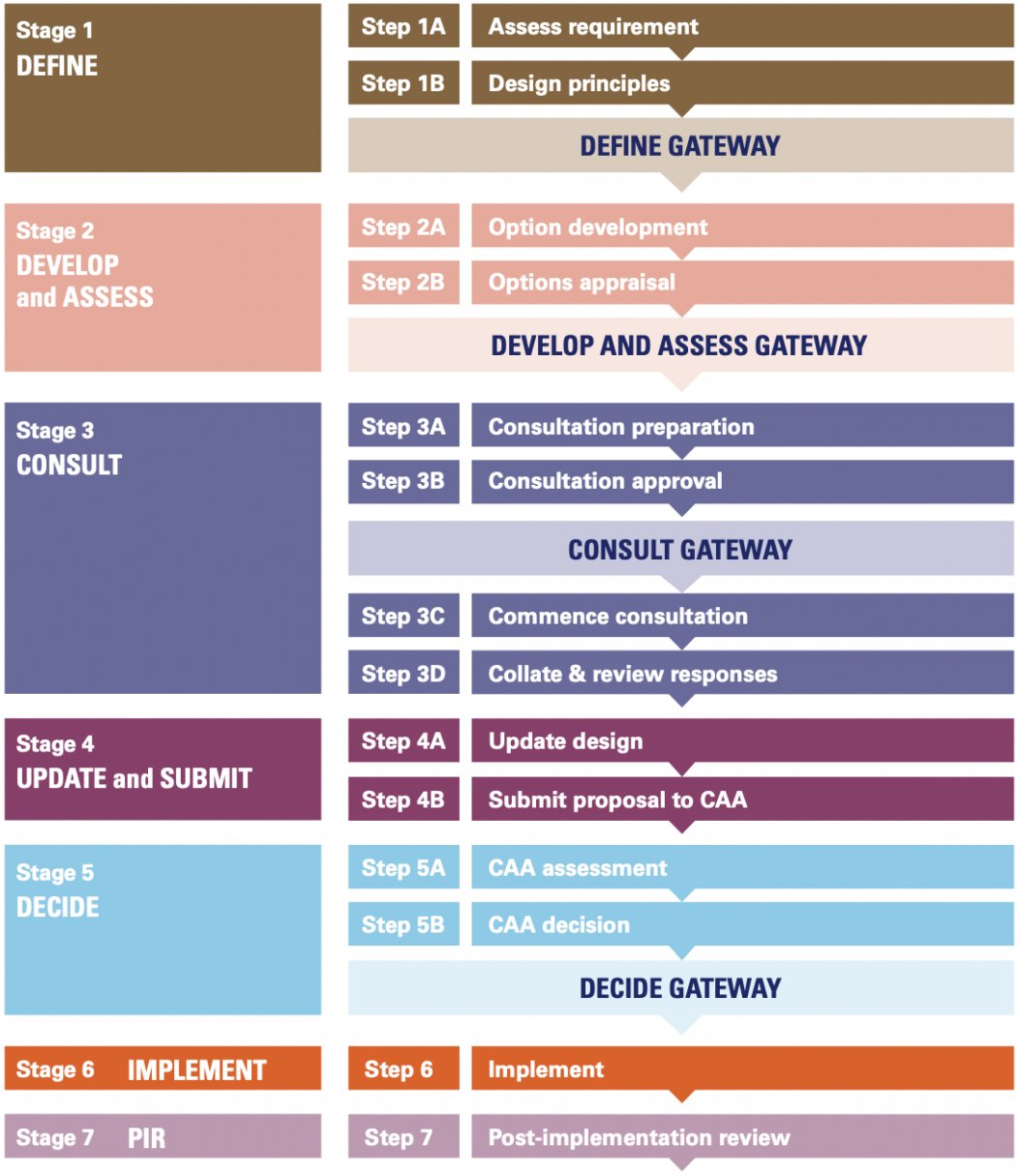


Figure 1: CAP1616 Process

1.5.3. Bournemouth Airport have completed Step 1A and are now embarking upon the development of Design Principles (Step 1B). Design Principles must be developed through a two-way engagement process with stakeholders; we therefore need your input.

2. Current Bournemouth Operations

2.1. Bournemouth Airport

2.1.1. Bournemouth Airport is part of Regional & City Airports, a business within the Rigby Group, the UK's leading regional airport operator. Regional & City Airports owns Bournemouth Airport, Coventry Airport, Exeter Airport and Norwich Airport, and operates Blackpool Airport, and Solent Airport Daedalus on behalf of their owners. Regional & City Airport also operates XLR Executive Jet Centres, a fixed-base operator having operation centres at Birmingham, Bournemouth, Exeter and Liverpool airports respectively.

2.1.2. Many of the commercial flights from Bournemouth Airport are seasonal operations providing travel to European holiday destinations. This means that operations tend to peak during the summer months. There are also several charter flights from Bournemouth to significant sporting events.

2.1.3. Bournemouth Airport is well equipped, and able, to accommodate most types of aircraft and helicopters from single-engine light aircraft used for initial pilot training and pleasure flying, up to large transport aircraft. Over the last few months, the Airport has seen an increase in air cargo operations and there is an aspiration to service these on a H24 basis.

2.1.4. In addition to operators who provide services to or from Bournemouth it is an important location for many aircraft operators who include Bournemouth Airport in their flight planning and training as an Alternate, or Diversion airfield, due to its location, runway and aerodrome infrastructure.

2.2. Types of Operations

2.2.1. Bournemouth Airport supports the execution of the following types of operation:

- Commercial Air Transport (CAT) operations providing scheduled and charter services;
- Cargo Operations;
- Non-Commercial operations, that include business aviation, military training and refuelling, private and commercial pilot training and skill testing and private recreational flying; and
- An annual Air Festival.

2.2.2. Bournemouth Airport supported a total of 44,488 movements in the period 2019-2020 (798,878 total passengers). This number reduced slightly in the period 2020-2021 owing to the global pandemic to 43,998 and there was a significant shift from passenger carriage to cargo movements (only 66,278 passengers).

2.2.3. Movement figures expected to remain at a similar level over coming years with commercial movements and passenger numbers likely to return to pre-pandemic levels, or beyond in 2022. Continued growth is anticipated in cargo operations. The volume of General Aviation (GA) traffic is likely to remain static or in a growth scenario, as can be accommodated.

2.3. Operational Hours

2.3.1. The published operational hours of BIA are 0630-2130, outside of these hours' aircraft operations are only permitted by prior arrangement. There is an aspiration to return to H24 operations in the future to support the air cargo operation.

2.4. Runways

2.4.1. Bournemouth Airport has two runways known as '08' and '26'; these are given their names as their true bearing is rounded to two figures, e.g. Runway 08 has a true bearing of 075.3 degrees.

2.4.2. Aircraft normally land and take off heading into the wind, thus the wind direction at the time of an aircraft approach or departure usually determines which runway is chosen. The prevailing wind direction at Bournemouth Airport is from the south-west, Runway 26 is therefore in use most frequently.

2.4.3. Due to predominantly westerly winds, Runway 26 is in operation roughly 75% of the year. Therefore, aircraft typically depart initially to the west before turn and typically arrive from the east.

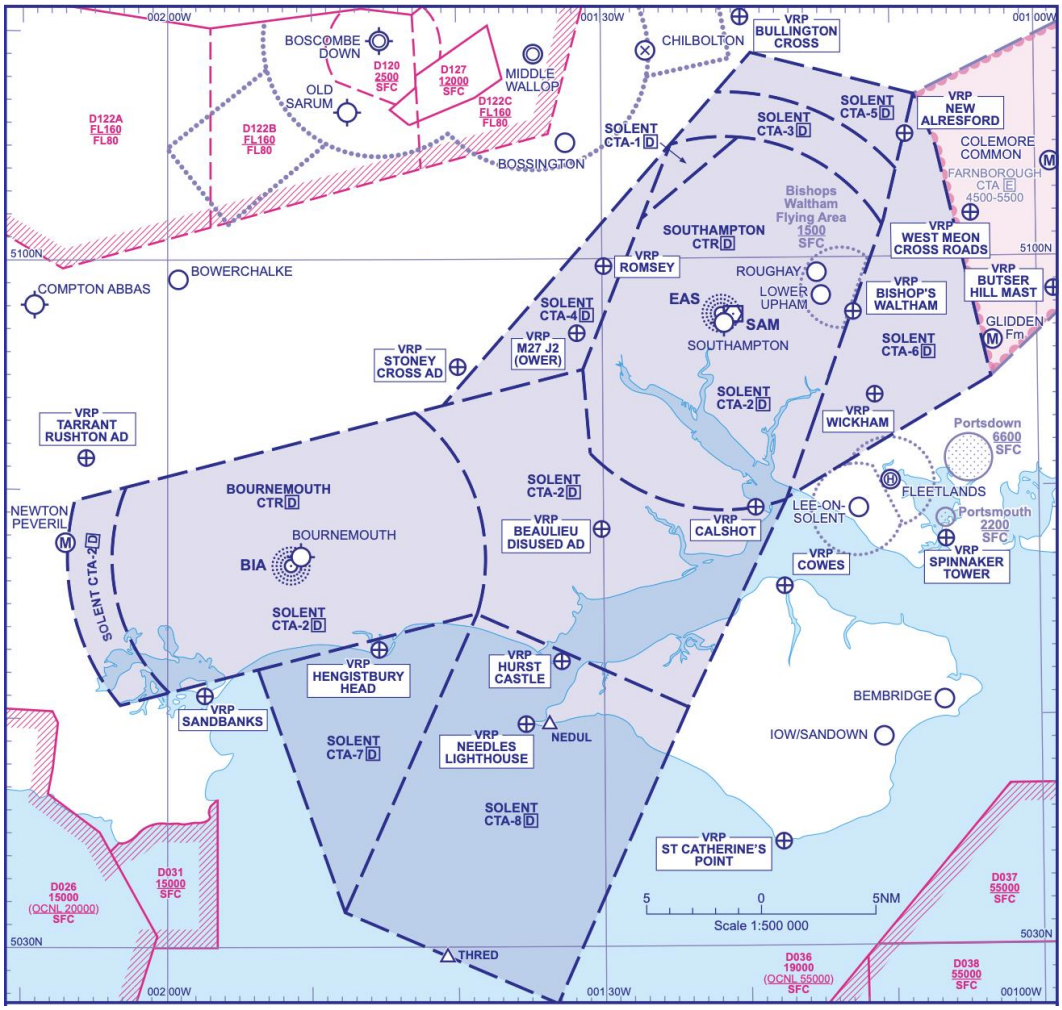
2.5. Airspace

2.5.1. The terminal airspace surrounding Bournemouth Airport is quite complex and it is shared with Southampton Airport. The Solent Control Area (CTA) and the respective Control Zones (CTRs) are depicted in Figure 2.

2.5.2. Bournemouth has a CTR that only extends from the surface to 2,000ft above mean sea level (amsl). It relies upon Southampton Airport being open to benefit from the additional volume of controlled airspace above it, namely the Solent CTA. This extends from 2,000ft to 5,500ft amsl.

2.5.3. During the recent pandemic, and owing to a downturn in their traffic, Southampton Airport has often closed and, as the airspace controlling authority (Solent Radar) has been closed, the airspace Solent CTA has reverted to 'uncontrolled' airspace (Class G) as opposed to 'controlled' airspace (Class D, it's usual classification). This has presented Bournemouth Airport with some significant challenges and will need to be considered as part of this ACP in conjunction with Southampton Airport and NERL. Bournemouth Airport has not been able to provide its operators with the controlled airspace containment and protection they should be afforded.

2.5.4. In addition to this, there is insufficient controlled airspace for the vectoring of arrivals/approaches to Bournemouth Runway 08 and, keeping aircraft within controlled airspace on departure on continuous climb profiles also presents a challenge for Bournemouth Radar. As a result, aircraft are often outside controlled airspace for part of their arrival or departure to/from Bournemouth Airport. Accordingly, the Airport would like controlled airspace containment to form part of the discussion on change.



Source: UK AIP ENR 6-38

Figure 2: Solent CTA, Bournemouth CTR & Southampton CTR

2.6. Arrivals/Approaches

2.6.1. Aircraft arriving at Bournemouth and Southampton Airports initially follow identical Standard Arrival procedures (STARs). During this phase of flight, aircraft are descended from the en-route system and their speed is typically reduced. If required, the aircraft enter holding patterns overhead Southampton Airport (SAM) or to the west of the Isle of Wight at NEDUL (See Figure 2).

2.6.2. Beyond the STARs and holding patterns, the route taken by aircraft into Bournemouth Airport is not defined by fixed lines on a chart. Instead, aircraft are radar vectored by Air Traffic Control (ATC) 'Bournemouth Radar' or given procedural instructions by 'Bournemouth Approach'. In both the radar vectored and procedural operation, individual aircraft do not follow identical paths, but over time, aircraft occupy a broad 'swathe' (a trend) that focuses into a single track along the extended runway centreline at the Airport.[1]

[1] Aircraft typically fly an Instrument Landing System (ILS) approach or a Non-Directional Beacon (NDB)/Distance Measuring Equipment (DME) approach. There will soon be the option to fly a RNP approach should the CAA approve the ongoing IAP ACP.

2.6.3. To modernise and systemise the airspace, the link between the STARs and the final approach can be designed or formalised. These links are known as 'Arrival Transitions' and consideration of these will form part of this ACP. Arrival Transitions may be needed for both the Instrument Landing System (ILS) approaches[2] and the new RNP approaches. The ILS to Runway 26 (Category III) still provides the most operationally effective means of completing an approach in inclement weather.

2.7. Departures

2.7.1. Bournemouth Airport currently has no Standard Instrument Departures (SIDs), i.e. it has no formerly charted departure procedures that have undergone the rigours of an Instrument Flight Procedure (IFP) design.

2.7.2. Instead, Bournemouth has Standard Departure Routes that utilise conventional navigation that rely upon ground-based navigation aids. This results typically in a broader swathe of tracks over time as the routes are not flown as precisely as a charted procedure. The current departure routes rely upon two ground-based aids that will be withdrawn from use in December 2022. The Southampton (SAM) and Goodwood (GWC) VOR-DMEs[3] are part of the national rationalisation of the country's ground-based navigational infrastructure and airports are required to remove any such dependency on these before December 2022.

2.7.3. Our main departure routes used by CAT are depicted at Figure 3. Whilst these do not represent heat maps developed using actual Noise and Track Keeping (NTK) data, the darker purple and green shading is representative of where most of the CAT aircraft route on departure.

[2] The ILS allows aircraft to descend to a lower 'minima' (altitude or height) in poor weather before a decision has to be made whether to make the approach or break-off. Such a minima cannot be achieved with the RNP approaches as there is no longer an agreement with the EU over use of European Geostationary Navigation Overlay Service (EGNOS) permitting Localiser Performance with Vertical Guidance (LPV) approach minimas to be achieved. LPV approach minimas are often comparable to a ILS Category 1 minima (circa 200ft).
[3] Very High Frequency Omni-Directional Range Finder and Distance Measuring Equipment

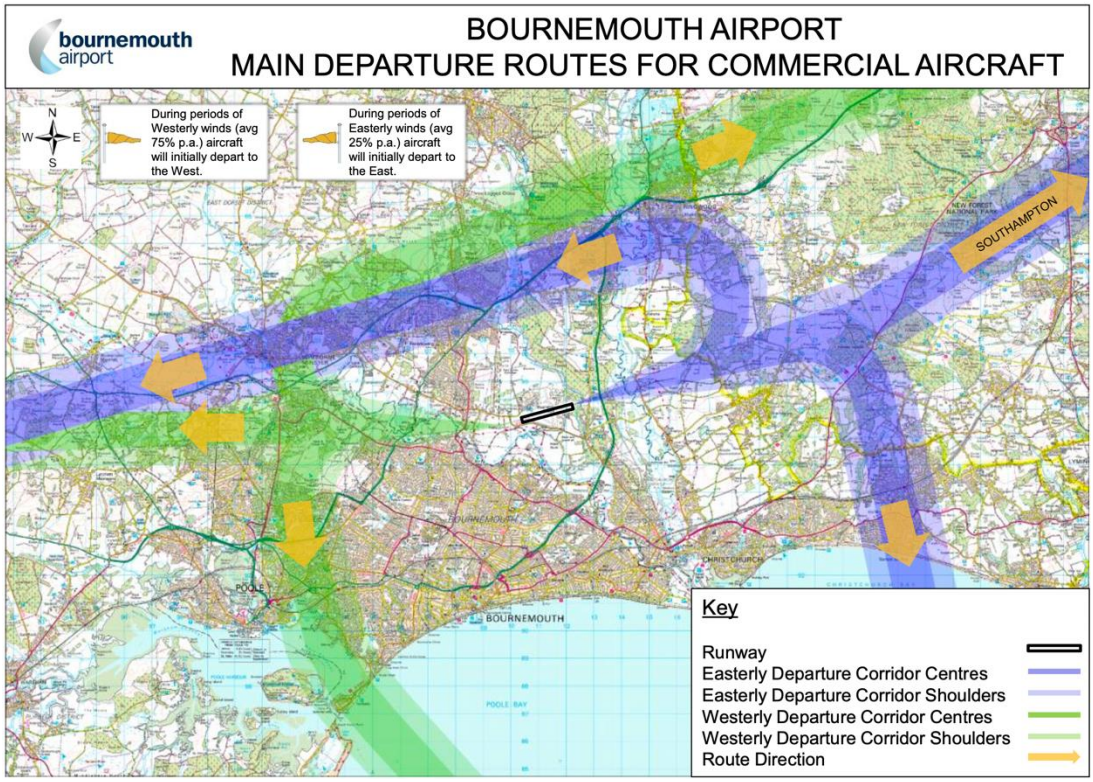


Figure 3: BOH Main Departure Routes for Commercial Aircraft

2.7.4. Despite not having formally charted departure procedures, aircraft greater than 5700kg Maximum Take-Off Weight Authorised (MTWA) are required to follow the Noise Preferential Routes (NPRs) detailed in the UK AIP.[4]

2.7.5. Each departure is managed tactically by the Bournemouth Radar Controller, in co-ordination with Solent Radar and London Control, taking into consideration other vectored, holding, and transit traffic in the Solent CTA; and en-route traffic in the Airways and London TMA. Some departures can route directly to their designated VOR or 'Waypoint' with continuous climb; whereas others are instructed to fly headings and/or are required to climb in steps to achieve separation against other aircraft. This extended routing on headings often requires the Bournemouth Radar Controller to use all of the available controlled airspace, and sometimes to route the departing aircraft outside controlled airspace for a short period.

2.7.6. To modernise and systemise the airspace, the link between the Airport and the 'Gateways' into the en-route system can be designed or formalised. These standardised procedures are known as 'SIDs' and consideration of these will form part of this ACP.

2.8. Noise & Track Keeping

2.8.1. Bournemouth Airport was one of the first in the UK to introduce the WebTrak radar replay service, which allows members of the public to replay aircraft operations, to display their identity and altitude. A few important amendments were made to the WebTrak system in response to the comments received during the consultation of the NAP.

[4] https://www.aurora.nats.co.uk/htmlAIP/Publications/2021-06-17-AIRAC/html/index-en-GB.html AD2.21 para 2

2.8.2. The data to support WebTrak is sourced from the Bournemouth radar and includes all aircraft operations within a 30-mile radius of the airport, except for aircraft operating above 15,000 ft. The public can interrogate the system to obtain information such as the aircraft's track, altitude, airline and aircraft type. Flight information is updated daily and is displayed 24 hours in arrears to maintain aviation security.

2.8.3. WebTrak can be accessed via the Bournemouth Airport website at this link.

2.9. Noise Action Plan and Noise Preferential Routings

2.9.1. Routing instructions are published in the Aeronautical Information Publication (AIP) instructing pilots of departing aircraft to fly a track that avoids, as far as is possible, the more densely populated areas, to minimise the impact of noise. At the Noise Action Plan (NAP) Review (2018), these instructions were substantially changed as a direct result of the comments received during the consultation of the draft NAP. In further reviews, the wording of these instructions has been reviewed to enable greater pilot understanding.

2.9.2. Bournemouth Airport has a Section 106 agreement with Christchurch Borough Council that requires the following:

- Departing aircraft are required to follow specified departure routings (Noise Preferential Routings (NPRs)). Commercial aircraft are not permitted to make any turn below 2,000 feet and it is the intention of the departure routings that aircraft avoid flying over built up areas where it is possible to do so. The effect of the routings is to minimise impact to Parley and the Bournemouth agglomeration when aircraft depart to the west (Runway 26) and to minimise the impact to Bransgore when aircraft depart to the east (Runway 08)[5][6]; and
- Departing aircraft are required to climb as steeply as is compatible with safety, in an effort to maximise altitude and thereby reduce noise

2.10. Noise Contours

2.10.1. The Noise Contour chart shown at Figure 4 depicts the average daytime aircraft noise from summer 2016 (published in Sep 2019 and used in our most recent ACP). It provides a good indication of what communities fall within the 51db $L_{Aeq\ 16\ hour}$ contour.

[5] Unless otherwise instructed by Air Traffic Control, all departing aircraft save for Light Propeller Driven Aircraft (propeller powered aircraft with maximum take-off weight not exceeding 5,700kg) shall: (i) When using Runway 26, climb on runway heading to 0.6 nautical miles from the Airport as measured by Distance Measuring Equipment (DME) then track of 270° (M), climbing to a height of 2,000 feet before making turns. (ii) When using Runway 08, climb on runway heading to 1.0 nautical mile from the Airport as measured by DME then track 075° (M) to 4.1 nautical miles DME before commencing any turn to the south. Northbound departures may commence the turn after passing a height of 2,000 feet.

[6] Departing Light Propeller Driven Aircraft shall climb straight ahead to at least a height of 500 feet before commencing any turn, unless otherwise instructed by Air Traffic Control.

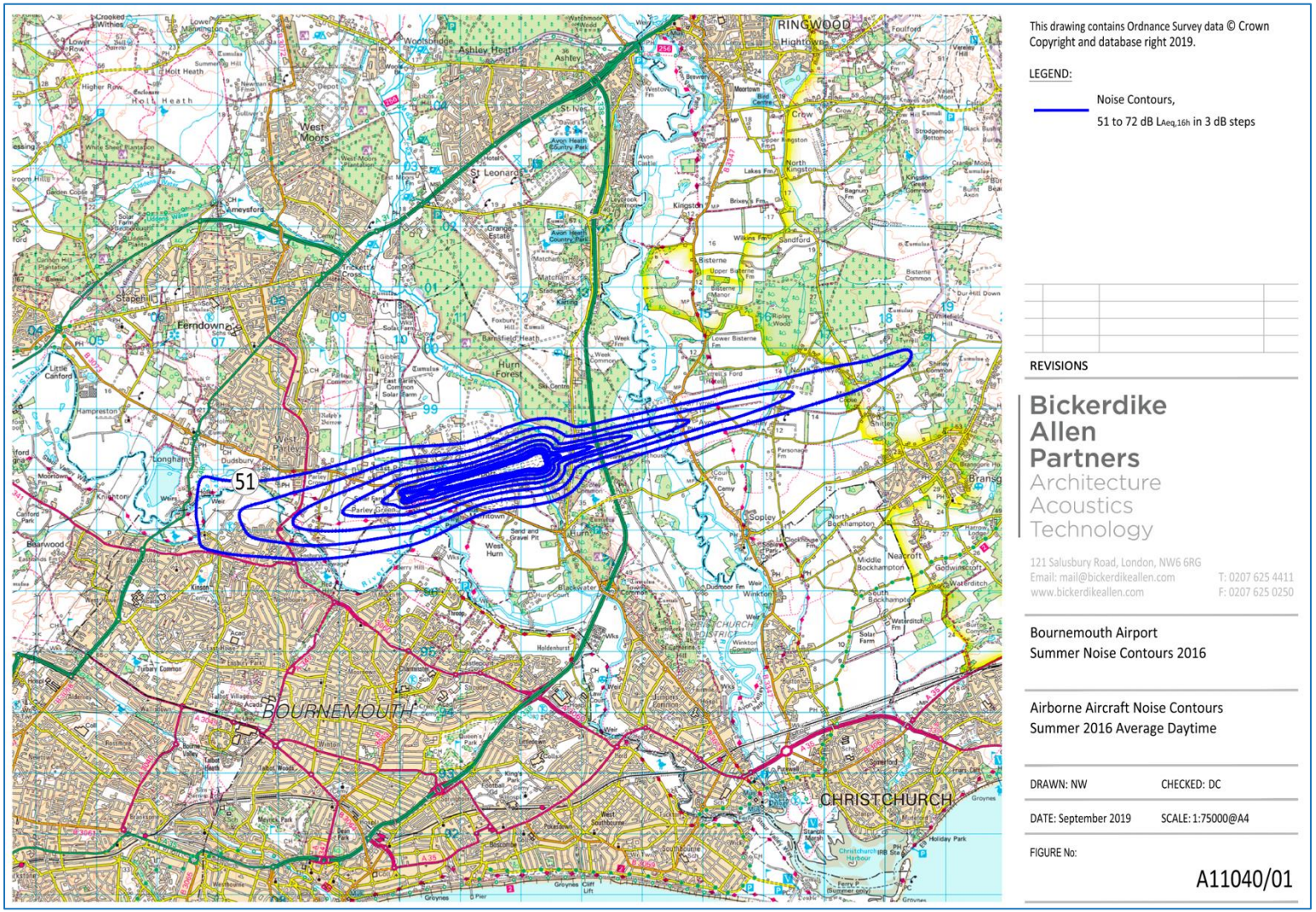


Figure 4: Airborne Noise Contours Summer 2016 Average Daytime

3. What have we learned from our most recent ACP?

3.1. Design Principles

3.1.1. The following Design Principles (DPs) were agreed for the RNP IAPs ACP that is close to completion. Some of these may have continued pertinence:

- **The new procedures should not increase the number of people overflown by aircraft participating in the approach.** (Community/Environmental) – Specific to approaches but could be amended to reflect all procedures.
- **The new procedures should not increase the noise footprint of the existing airport operation, for similar aircraft types and traffic levels, as detailed in the $L_{Aeq\ 16\text{-}hour}$ map in the current Noise Action Plan.** (Community/Environmental) – Has continued relevance.
- **Implementation should minimise disturbance to the Moors River System SSSI.** (Community/Environmental) – Has continued relevance.
- **The new approaches shall be standardised by ICAO and acceptable to EASA and CAA and the implementation shall be in compliance with all applicable legislation and regulations.** (Technical) – Specific to approaches but could be amended to reflect all procedures. Note: Post-Brexit, EASA no longer relevant to this.
- **The design shall be fully compliant with the design criteria stated in ICAO Doc 8168 (PANS OPS) and UK published differences and be flyable by all aircraft types in approach Speed Categories A through D.** (Technical) – Has continued relevance.
- **The approach procedures shall be of a type for which the majority of Bournemouth aircraft operators are equipped and authorised to fly.** (Technical) – Specific to approaches but could be amended to reflect all procedures.
- **The designs shall seamlessly integrate with extant instrument approach procedures at Bournemouth International Airport** (Technical) - Specific to approaches but could be amended to reflect need to also seamlessly integrate with the new RNP Approaches.
- **The procedures should address the needs of flight training operators at Bournemouth.** (Operational) – Might need to reflect the needs of most, if not all, operators with the new procedures/airspace.
- **The design shall support continued use of existing radar vectored arrival procedures provided by Solent Radar.** (Operational) – This DP is likely to become redundant as the aspiration is to modernise or systemise the airspace reducing the need to radar vector aircraft on arrival.
- **The new procedures shall be implemented in a cost-effective manner.** (Financial) – Remains relevant as a reality of running a regional airport.

4. Draft Design Principles

4.1. Categories

4.1.1. CAP1616 categorises DPs into the following aspects:

- Safety;
- Environmental;
- Operational;
- Technical;
- Economic; and
- Strategic Policy

4.2. Starting Point

4.2.1. We have drafted some DPs for consideration and review, some of which carry over from the previous ACP. These are only draft DPs and are not listed in priority order. We would like these to be moulded to reflect the views of our stakeholders. The survey will give you as stakeholders the opportunity to comment on them and to offer up other suggestions.

4.3. Safety

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

4.4. Environmental

4.4.1. **DP2 – Overflight** – The new procedures should not increase the number of people overflown by aircraft using the Airport.

4.4.2. **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 $L_{Aeq\ 16\ hour}$ contour.

4.4.3. **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).

4.4.4. **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.

4.5. Operational

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

4.5.2. **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.

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

4.5.4. **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.

4.6. Technical

4.6.1. **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.

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

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

4.6.4. **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.

4.6.5. **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.

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

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

4.7. Economic

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

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

4.8. Strategic Policy

4.8.1. The CAA has insisted that, subject to the overriding principle of maintaining a high standard of safety, the highest priority principle of this airspace change, that cannot be discounted, is

that is accords with the CAA's published Airspace Modernisation Strategy (CAP1711) and any future plans associated with it. Bournemouth Airport is expected to participate in the development of the AMS Masterplan, in conjunction with ACOG, NERL and the other identified airports. The following DP is therefore second only to maintenance of safety.

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

4.8.3. 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'.

4.8.4. **DP20 – PBN** – The new procedures should capitalise on 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.

5. What we need from you?

5.1. Identified Stakeholders

5.1.1. 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.

5.1.2. Bournemouth Airport believes that the ACC represents the local community. In addition, the Airport has included:

- Environmental stakeholders;
- Technical stakeholders (ATC and Operators); and
- Local and Statutory (National) aviation stakeholders.

5.1.3. The list of stakeholders engaged at this stage of the process can be seen at Annex B. There is nothing to stop those agencies from sharing this material with a broader audience. Bournemouth Airport will consider all the feedback it receives.

5.2. Survey

5.2.1. We have created a short survey in order to garner your opinions on our draft Design Principles and glean further ideas from you on other potential Principles that we might seek to adhere to in the development of Options at Stage 2.

5.3. How to respond

5.3.1. The survey has been created in MS Forms. The preferred method of response is an online response through the following link.

5.3.2. Accepting that there may be some not able to do an online response, a written version of the survey is to be found at Annex A. Responses to the questions may be submitted by email to the following address: ACP@bournemouthairport.com or to the following postal address:

ACP Response
Bournemouth Airport
Christchurch
Dorset
BH23 6SE

5.3.3. If submitting a response via email or post, please title your correspondence 'Design Principles Feedback'. Please also include the name of the organisation/community that you represent.

5.4. Timescale

5.4.1. The engagement period on Design Principles shall run for a minimum of 30 days and shall close at 1700hrs on Thursday 30 September 2021. Once the results of the engagement have

been collated, the Airport will complete a report that will be submitted to the CAA and published on the ACP Portal. This report will detail the final Design Principles that will be used to assess the 'Options' developed during Stage 2.

A. Textual Version of the Survey

A.1. The following questions are replicated on the MS Form online and it is preferred that you use the online form to submit your answers. Should you be unable to, please email or post a response to the questions below.

- Q1) It is possible that, during the options development phase, flightpaths may be identified that have a lower potential environmental impact and greater efficiency. These flightpaths may of course impact new people currently not overflown routinely. **Would you prefer that any future Bournemouth flight procedures be designed to deliver the best possible routes in terms of noise, emissions and operational efficiency, or is the avoidance of impacting new communities of greater importance?** Available answers:
  - Avoid affecting new people; or
  - Seek options that reduce environmental impact and have greater efficiency; or
  - Don't know; and
  - Optional open text field to provide amplification on your answer.

- Q2) It may be possible to concentrate or merge flightpaths in such a way that the environmental impact is always concentrated in certain areas (perhaps because the route is more efficient or affects less people). Conversely, it may be possible to design a system that disperses the environmental impact. Dispersion would affect more people but less often. **Would you prefer to see a system of flight paths that concentrates the impact or disperses it?** Available answers:
  - Concentrate; or
  - Disperse; or
  - Don't know; and
  - Optional open text field to provide amplification on your answer.

- Q3) It may be possible to avoid certain areas. **In order of preference ((1) being of greatest most importance and (3) being of least importance), please advise which of the following you would like us to protect from the impact of aviation noise and emissions.** Available answers:
  - Built-up areas (i.e. densely populated);
  - Rural Areas (i.e. sparsely populated);
  - Areas of Tranquility (e.g. National Parks, AONBs, recreational parks etc.)
  - Optional open text field to provide amplification on your answer.

- Q4) **Are there any specific areas or noise sensitive buildings you would like us to be made aware of where overflight should be avoided if possible?** Available answers:
  - Yes (Please expand on answer); or
  - No; and
  - Optional open text field to provide amplification on your answer.

- Q5) Some airports have sought opportunities to build into the system known periods of relief from the adverse effects of aviation noise. These known or scheduled periods are known as 'Respite' periods during which times aircraft are channelled onto 'Respite' routes relieving the burden on certain communities. It must be stressed that airspace constraints sometimes limit the art of the possible, however it is something that could

be investigated. **Given the option, would you like to see a system developed that had periods of known respite built-in?** Available answers:

- Yes; or
- No; or
- Don't mind; or
- Don't know; and
- Optional open text field to provide amplification on your answer.

- Q6-Q25) **To what extent do you agree with each of the draft DPs? Please provide comment as to how you would prefer the Design Principle in question reworded or why you would like to see it removed altogether.** Available answers:
  - Strongly agree; or
  - Agree; or
  - Neither agree nor disagree; or
  - Disagree; or
  - Strongly disagree;
  - Optional open text field to provide amplification on your answer.

- Q6) **DP1 – Importance of Safety** – The airspace design and its operation must be as safe or safer than today.

- Q7) **DP2 – Overflight** – The new procedures should not increase the number of people overflown by aircraft using the Airport.

- Q8) **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 $L_{Aeq\ 16\ hour}$ contour.

- Q9) **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).

- Q10) **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.

- Q11) **DP6 – Operational Requirements** – The new procedures should address the needs of most operators at Bournemouth Airport.

- Q12) **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.

- Q13) **DP8 – Airspace Availability** – Sufficient controlled airspace should be available to support Bournemouth Airport operations independently.

- Q14) **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.

- Q15) **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.

- Q16) **DP11 – Aircraft Category** – The new procedures shall be technically flyable by all aircraft types in approach Speed Categories A through D.

- Q17) **DP12 – Equipage and Approval** – The new procedures shall be flyable by the majority of Bournemouth commercial aircraft operators.

- Q18) **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.

- Q19) **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.

- Q20) **DP15 – Coordination** – The new procedures result in a reduction in the amount of tactical coordination required by ATCOs.

- Q21) **DP16 – Independence** – The new procedures and airspace configuration should enable Bournemouth Airport to operate independently of Southampton Radar.

- Q22) **DP17 – Cost of Change** – The new procedures shall be implemented in a cost-effective manner.

- Q23) **DP18 – Operational Cost** – Provided it does not have an adverse impact of community disturbance, procedures should be designed to optimise fuel efficiency.

- Q24) **DP19 – AMS Realisation** – This ACP must serve to further, and not conflict with, the realisation of the AMS.

- Q25) **DP20 – PBN** – The new procedures should capitalise on as many of the potential benefits of PBN implementation as are practicable.

- Q26) **Have we missed anything that should be incorporated as a Design Principle?** Available answers:
  - Yes (please provide amplification); or
  - No, I'm content you've captured everything; or
  - Not sure; and
  - Optional open text field to provide amplification on your answer.

B. Stakeholder List

B.1. Community Stakeholders

Bournemouth Airport Consultative Committee (ACC)	
Christchurch Chamber of Trade & Commerce	New Forest District Council
Hurn Parish Council	Bransgore Parish Council
Christchurch Borough Council	Ferndown Town Council
Bournemouth Chamber of Trade & Commerce	Verwood Town Council
Crowhill Residents' Association	Dorset Chamber of Commerce & Industry
Burley Parish Council	Draken
Dorset County Council	Christchurch Tourism
Dorset Federation of Residents' Associations	New Forest National Park Authority
Bournemouth Christchurch & Poole Council	Broadstone Neighbourhood Forum
East Dorset District Council	Jumpers & St Catherine's Hill Residents Association
West Parley Parish Council	

B.2. Environmental Stakeholders

Environmental Bodies	
Natural England (SSSI Moors River System)	National Trust
Cranbourne Chase AONB Team (covers West Wiltshire Downs AONB also)	New Forest National Park Authority *
Dorset County Council (Dorset AONB) *	Hampshire County Council (New Forest National Park) *

* Represented on ACC

B.3. Technical Stakeholders

Air Navigation Services Providers/ATC	
NATS En-Route Ltd (NERL)	Bournemouth Airport ATC
NATS Southampton	NATS Farnborough

Aircraft Operators	
Draken	European Aviation / Maleth
EasyJet	Ryanair
Gama Aviation	TUI
Jota Aviation	Jersey Jet Centre
NetJets	FlexJet
Air Hamburg	JetFly Aviation of Luxembourg
L3Harris	CAE Oxford

B.4. Local Aviation Stakeholders

Neighbouring Airports/Airfields/Flying Clubs	
Southampton Airport	Farnborough Airport
Lee on Solent	Newton Peveril
Eyres Field	

B.5. Statutory Aviation Stakeholders

National Air Traffic Management Advisory Committee	
Airlines UK	British Parachute Association (BPA)

National Air Traffic Management Advisory Committee	
Airspace4All	General Aviation Alliance (GAA)
Airfield Operators Group (AOG)	Honourable Company of Air Pilots (HCAP)
Aircraft Owners and Pilots Association (AOPA)	Helicopter Club of Great Britain (HCGB)
Aviation Environment Federation (AEF)	Isle of Man CAA
British Airways (BA)	Light Aircraft Association (LAA)
BAe Systems	Low Fare Airlines
British Airline Pilots Association (BALPA)	Military Aviation Authority (MAA)
British Balloon and Airship Club	Ministry of Defence - Defence Airspace and Air Traffic Management (MoD DAATM)
British Gliding Association (BGA)	NATS
British Helicopter Association (BHA)	PPL/IR (Europe)
British Microlight Aircraft Association (BMAA) / General Aviation Safety Council (GASCo)	UK Airprox Board (UKAB)

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