ACP-2022-033
PROVISION OF GNSS IFPS TO HENSTRIDGE
TO SUPPORT
DORSET & SOMERSET AIR AMBULANCE
CAP1616
STAGE 4 SUBMISSION

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DOCUMENT CONTROLS

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GLOSSARY OF TERMS AND ABBREVIATIONS

DSAA's convention is to introduce abbreviations at first use within any document. Table 1, below, contains the list of abbreviations, acronyms and terms contained within this document.

Term/Abbreviation	Meaning
ACP	Airspace Change Proposal.
ADV	Aerodrome Control Visual
AFISO	Aerodrome Flight Information Service Officer
AGCS	Air-Ground Communication Service
ADS-B	Automatic Dependent Surveillance-Broadcast. A surveillance technology and form of Electronic Conspicuity in which an aircraft determines its position via satellite navigation or other sensors and periodically broadcasts it, enabling it to be tracked.
AMSL	Above Mean Sea Level.
ANSP	Air Navigation Service Provider.
AOI	Area of Interest
AOR	Area of Responsibility
APDO	(UK CAA-) Approved Procedure Design Organisation
ATC/M	Air Traffic Control/Management.
(UK) CAA	(UK) Civil Aviation Authority (i.e. the UK's aviation regulatory body).
(UK CAA) CAP1616	UK CAA publication proffering guidance on the regulatory process(es) for changing the notified airspace design (*et al*). See References and Bibliography.
EGharmoHS	ICAO (i.e. aeronautical) designator for Henstridge Aerodrome.
FATO	Final Approach and Take Off
FIR	Flight Information Region. An airspace of defined dimensions, extending from the surface to a specified upper limit, in which flight information and alerting services are provided.
FL	Flight Level.
GA	General Aviation
IFP	Instrument flight procedure.
IFR	Instrument Flight Rules, i.e. the conduct of the flight without visual references and the pilot is utilising cockpit instrumentation.
km	Kilometre
LARS	Lower Airspace Radar Service
LOA(s)	Letter(s) of Agreement
MOU(s)	Memorandum (Memoranda) of Understanding.
nm	Nautical mile(s).
PinS	Point in Space. IFP designed for helicopter.
RNAS	Royal Naval Air Station
RW	Runway
TLOF	Touch Down and Lift Off
VFR	Visual Flight Rules adhered to by flights outside controlled airspace, where the conduct of the flight is with visual reference to - *inter alia* - terrain and other airspace users.

Table 1 - Glossary of Terms and Abbreviations

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EXECUTIVE SUMMARY

Dorset and Somerset Air Ambulance (DSAA) is a key part of the emergency services network in the south west region and, since 2008, has been based at Henstridge Aerodrome, situated on the Dorset/Somerset border in Class G airspace and operates without approach control (WAC) services.

Currently, the DSAA helicopter operates between the hours of 0700 and 0200 and recoveries to the airfield can only be flown in accordance with visual flight rules (VFR) in visual meteorological conditions (VMC). Thus, the ability to fly in accordance with instrument flight rules (IFR) when VFR cannot be maintained would enhance DSAA Helicopter Emergency Medical Services (HEMS) operational capability and, in turn, DSAA's delivery of critical patient care.

DSAA, therefore, seeks to introduce Global Navigation Satellite System (GNSS) instrument flight procedures (IFPs) to enhance its HEMS operational capability at Henstridge Aerodrome during DSAA's existing operating hours.

DSAA estimates that the proposed IFP design could deliver an additional 72 AA missions and associated patient care per calendar year, acknowledging that HEMS is a demand-led service.

DSAA initiated ACP-2022-033, submitting an updated statement of need in May 2023. Whilst ACP-2022-033 can be seen to sit outside the formal UK Airspace Management Strategy, the application is not inconsistent with the strategy's aims and objectives.

The aim of ACP-2022-033 is to implement GNSS IFPs to enhance DSAA HEMS operational capability at Henstridge. This capability enhancement is also consistent with the DSAA Charity's ambition to transition the HEMS operation at Henstridge to H24 in the future.

Henstridge is a small, unlicenced general aviation (GA) aerodrome located in East Somerset. Henstridge has no ATZ, resides within Class G airspace and has one runway. Flying activity in the vicinity of Henstridge is military and GA. Henstridge has no air traffic service (ATS) but is supported by a limited air-ground communications service (AGCS) at weekends. During their respective operating hours and subject to the requisite surveillance coverage, DSAA HEMS aircraft may receive a surveillance-based (i.e. radar) ATS from Royal Naval Air Station (RNAS) Yeovilton, Ministry of Defence (MOD) Boscombe Down, Bournemouth Airport and Bristol Airport. Where no surveillance-based ATS is available, a flight information service can be obtained from "London Information".

Currently, there are no instrument approaches at Henstridge. The nearest controlled airspaces that might have a bearing on DSAA HEMS operations are the control zones at Bournemouth and Bristol airports.

The introduction of the proposed IFP design does not constitute a significant change to the existing airfield operations. As a result of the proposal, there would be no change to the aircraft types operating at Henstridge and DSAA estimates that the introduction of the proposed IFPs could increase aerodrome movements by approximately 1.52%. The proposed IFPs would be used in reduced weather minima and any potential impact on airfield users could be managed simply and effectively through an agreed adaptation of the existing Henstridge Aerodrome flying procedures.

The predominance of flying activity in the vicinity of Henstridge is either military or GA; the latter is undertaken under VFR. DSAA assess that the introduction of the proposal would not result in any positive or negative impacts for other airspace users using the surrounding airspace. Thus, were the need to arise to use the proposed PinS procedure in IMC, then the likelihood of either conflict or displacement of GA is assessed as minimal to zero. Similarly, military flying in the local area would invariably be associated with either RNAS Yeovilton or MOD Boscombe Down and supported by their respective ATSUs, from whom the DSAA already receive an ATS when available.

The varying locations of DSAA HEMS tasking are such that there is no predominant direction of either departure or recovery that influences IFP design, *per se*. Accordingly, DSAA remained cognisant of the existing local airspace infrastructure and users, in turn, proffering a safe and assured IFP design that avoided unnecessary complexity, had minimal impact on local airspace users, replicated existing VFR routing and continued to avoid overflight of densely-populated areas.

A "Do Nothing" option (i.e. maintaining the extant operational *status quo*) was not considered, as it would neither enhance DSAA HEMS operational capability at Henstridge, nor would it meet the corresponding Statement of Need.

DSAA was well placed to conduct its stakeholder engagement activities as it had already well-established and open relationships with its neighbouring aviation stakeholders and had engaged many of them as part of the early stages of the ACP-2022-033 process.

Stakeholders were provided with source materials to enable informed objective responses to be received, which, in turn, could inform the proposed IFP design. All stakeholder engagement was proactive, cordial and informative and there was overwhelming support for the application and its promulgated statement of need.

There was no direct feedback that either impacted or influenced the proposed IFP design. Discussions with neighbouring aviation stakeholders centred around notification and communication procedures, and all relevant parties supported the development of operational level letters of agreement (LOAs)/memoranda of understanding (MOUs) to ensure that relevant parties' notification and coordination requirements were met. All parties resolved to continue dialogue, and DSAA undertook to continue engaging stakeholders across the ACP timeline and on into the operation of the proposed IFP design.

Subject to the CAA's decision, the application's target AIRAC is 11/2024, which has an aeronautical publication schedule cut-off date of 2 Aug 24. In the intervening period, DSAA will seek to: conduct flight validation of the proposed IFP design; continue to engage and brief its local aviation stakeholders; and progress the development of corresponding LOAs/MOUs between the relevant parties.

Accordingly, the ACP-2022-033 proposed IFP design is submitted to the CAA at Stage 4.

1. INTRODUCTION.

1.1. Background.

Helicopter Emergency Medical Services (HEMS) are the mainstay of air ambulance operations in the UK and allow specialist medical teams to be despatched rapidly to an incident, or critically ill patient, facilitating the delivery of essential prehospital treatment. Delays in this critical medical intervention before a patient's arrival at hospital could adversely impact patient survival and post-recovery quality of life.

Dorset and Somerset Air Ambulance (DSAA) is a key part of the emergency services network in the south west region and, since 2008, has been based at Henstridge Aerodrome, situated on the Dorset/Somerset border in Class G airspace and operates without approach control (WAC) services. The DSAA helicopter is operated under the AOC of Specialist Aviation Services Ltd (SAS), the sponsor of this ACP.[1]

Currently, the DSAA helicopter operates between the hours of 0700 and 0200 and recoveries to the airfield can only be undertaken in visual meteorological conditions (VMC). DSAA, therefore, seeks to introduce Global Navigation Satellite System (GNSS) instrument flight procedures (IFPs) to enhance its HEMS operational capability at Henstridge Aerodrome during DSAA's existing operating hours and, in turn, its delivery of critical patient care.

1.2. DSAA Operational Capability Enhancement - the Driver for Change.

The DSAA HEMS helicopter operates between the hours of 0700 and 0200 hrs, 7 days a week for 365 days a year; this equates to 1168 AA missions, an average of 3 missions per day.[2] Currently, DSAA departures from and recoveries to Henstridge can only be undertaken under VFR in VMC.

Between Apr 22 and Mar 23, the DSAA helicopter was declared offline for 449 hours due to weather constraints. This equated to 24 operating days, which could be seen to equate to 72 life-saving AA missions, acknowledging that HEMS is a demand-led service.

Accordingly, the introduction of GNSS IFPs to enhance DSAA HEMS operational capability at Henstridge could deliver an additional 72 AA missions, *per annum*, in turn delivering more critical prehospital care for patients in the existing DSAA 19-hour operation.

1.3. Statement of Need.

Originally, DSAA submitted the ACP-2022-033 DAP1916 (including a corresponding Statement of Need) on 22 May 22. DSAA submitted a subsequent DAP1916 on 1 May 23, to meet the GNSS Roll-out Programme requirements; DSAA amended this latter DAP1916 on 16 May 23.

> "[…] During inclement weather, most UK aviation operations are supported by surveillance-based air traffic services (i.e. radar), during which appropriately qualified pilots may fly under instrument flight rules. Given the nature of the HEMS task and locations, however, this surveillance capability is not always available to HEMS crews, who are appropriately qualified, and their ability to operate in adverse weather conditions can be unduly constrained. Critically, a HEMS crew being unable to either depart from or return to their operating base due to weather constraints impacts the availability of the service.
>
> A DSAA HEMS mission can last more than three hours and, having departed Henstridge in VMC, the weather can (and does) often deteriorate, regularly precipitating a recovery in marginal weather conditions. If weather conditions fall below those required for a Visual Flight Rules (VFR) recovery, this would result in the DSAA helicopter being unable to return to Henstridge; in turn,

1. Gama Aviation is in the process of acquiring SAS; at the time of document approval, the ACP sponsor was SAS. DSAA understands that sponsorship will transfer to Gama Aviation with the transfer of AOC. This was confirmed in a meeting between Avigation and CAA (Airspace Change Account Manager) held on MS Teams on 14 Feb 24.
2. DSAA data for the period Apr 22 to Mar 23, inclusive.

this would mean that this important critical care asset would remain offline until it could be recovered (often the following day). If the aircraft had been left on a hospital helipad, then the helipad would not be available to other HEMS aircraft. Thus, being unable to recover the DSAA helicopter to Henstridge under instrument meteorological conditions (IMC) could put patients' lives at risk.

A major benefit of introducing a Global Navigation Satellite System (GNSS) instrument approach procedure (IAP) is that it will allow the operation of the DSAA helicopter (particularly its recovery) under IMC, offering significant safety benefits over VFR flight in marginal VMC conditions, in turn, delivering vital continuity of this critical care service. An additional benefit could also be that the implementation of GNSS IFPs at Henstridge could lead to future operations in IMC to hospitals with their own GNSS IAPs. […]"

1.3.1. UK Airspace Modernisation Strategy (AMS).

Whilst ACP-2022-033 can be seen to sit outside the formal UK AMS, the application "[…] is not inconsistent with [the aims and objectives of] the strategy".[3]

1.4. Aims of ACP-2022-33.

The purpose of this ACP is to implement GNSS IFPs to enhance DSAA HEMS operational capability at Henstridge; such operational procedures, designed specifically for helicopters, are known as Point-in-Space (PinS) procedures.

The operational feasibility of and safety case for PinS have been proven, and assured PinS procedures supporting the HEMS community have been implemented successfully throughout mainland Europe. SAS, therefore, seeks to introduce PinS procedures to support DSAA HEMS operations at Henstridge, thereby enhancing HEMS capability and increasing the availability of critical care in reduced weather minima.

This capability enhancement is also consistent with the DSAA Charity's future aspiration to transition its HEMS operation to H24.

2. ASSUMPTIONS AND CONSTRAINTS.

In progressing this application and associated safety case, DSAA identified no constraints and has made the following assumptions:

2.1. Proposed IFP Design Utilisation.

The proposed IFP design shall only be utilised by one HEMS helicopter at any one time and under "prior permission required (PPR)".

2.2. ACP-2022-033 and CAP2520 Applicable Scope.

CAP2520 sets out the CAA's vision for PinS (i.e. GNSS IFPs) and the restrictions for applications for the introduction of GNSS IFPs for helicopter operators: "licensed aerodromes" and "Blue Light" operations at "unlicensed landing sites and FATO".[4] DSAA HEMS operations are conducted at Henstridge Aerodrome, which is neither a licensed aerodrome, nor an unlicensed landing site with a FATO; DSAA raised this anomaly with CAA at an informal meeting on 25 May 23 and subsequently at the ACP-2022-033 initial assessment meeting on 14 Jun 23.[5]

Henstridge is a small unlicenced aerodrome, at which the extant operation is VFR only and predominantly GA. As outlined later in this safety case, DSAA with the support of the Henstridge Aerodrome owner proposes to

3. CAA (November 2023), "*CAP1616f*", Page 126 (online), accessed on 15 Feb 24.
4. CAA (May 2023), "*CAP2520 […]*" (online), accessed on 21 Mar 24.
5. ACP-2023-033 Initial Assessment Meeting minutes, Para 25 (online), accessed on 25 Mar 24.

establish operating procedures that will confirm that the aerodrome is unavailable for all other aircraft during those daylight hours that weather conditions determine the HEMS helicopter's use of the proposed IFP design.

In such instances and during routine HEMS operations at night, the DSAA operation effectively becomes a *de facto* single HEMS helicopter operation to an unlicensed (and ostensibly autonomous) landing site with a FATO and TLOF.

In the absence of unequivocal CAA guidance on this matter, DSAA has, therefore, developed this safety case on this assumption.

3. ACP-2022-033 DESIGN PRINCIPLES

CAP1616 (4th Edition) required change sponsors to produce an assessment of any options considered against the 2 Design Principles (DPs) therein.[6] In addition, CAP1616 suggested that sponsors should also include other design principles that reflect local considerations or impacts to other airspace users so that they are considered as part of the design process.[7]

DSAA established the following DPs for ACP-2022-033:

DP1. The proposed design must maintain a high level of safety.

DP2. The proposed design should avoid overflight of densely-populated areas, where possible.

DP3. The proposed design should avoid unnecessary complexity.

DP4. The proposed design should have minimal impact on other airspace users.

The ACP-2022-033 DP Evaluation and associated methodology are set out in Section 8 of the application's Stage 2 Submission document.

6. CAA (2021), Page 98-99 (online), accessed on 31 Jan 24.
7. *id*, Page 99 (online), accessed on 31 Jan 24.

4. DETAILED DESCRIPTION OF THE PROPOSAL AND IMPACTS

4.1. Detailed Description of the Current Airspace and Operations - Location, Airspace, Tasking and Operations Context.

4.1.1. Henstridge Location and Airspace Context.

Henstridge is a small, unlicenced, general aviation (GA) aerodrome located in East Somerset, between RNAS Yeovilton and Compton Abbas aerodrome, indicated by the red circle in Figure 1, below. Henstridge has no ATZ, resides within Class G airspace and has one non-instrument runway (RW06/24). The flying activity in the vicinity of Henstridge is military and GA.

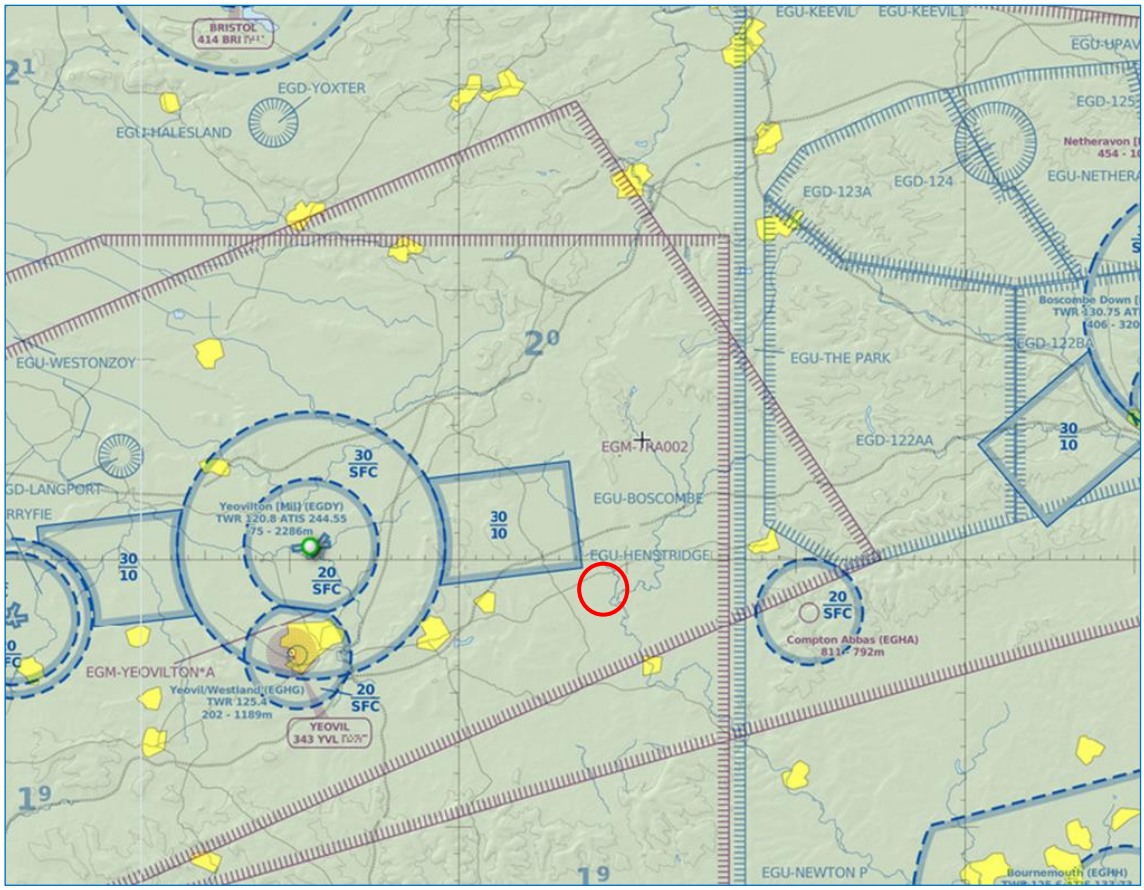

Image Source: SkyVector

Figure 1 - Henstridge Aerodrome Airspace Context

Henstridge has no air traffic services (ADV or AFISO) and an AGCS limited to weekends only. Currently, there are no instrument approaches at Henstridge. The nearest controlled airspace that has a bearing on DSAA HEMS operations is Class D airspace, the Control Zones (CTZs) at Bournemouth and Bristol airports, approximately 15nm SE and 20nm NW, respectively.

During their respective operating hours and subject to the requisite surveillance coverage, DSAA HEMS aircraft may receive an ATS from RNAS Yeovilton, MOD Boscombe Down and/or Bournemouth and Bristol Airports. Where no surveillance-based ATS is available, a Basic Service can be obtained from "London Information".

4.1.2. DSAA Tasking.

Figure 2, below, offers a geographical representation of the locations of all the incidents to which the DSAA teams have been mobilised over the period Apr 22 to Mar 23. Colour coding has been applied to differentiate between the team types; HEMS is depicted in yellow and Critical Care Car in blue. The size of the corresponding circles in Figure 2 relates to the number of incidents attended in that area.

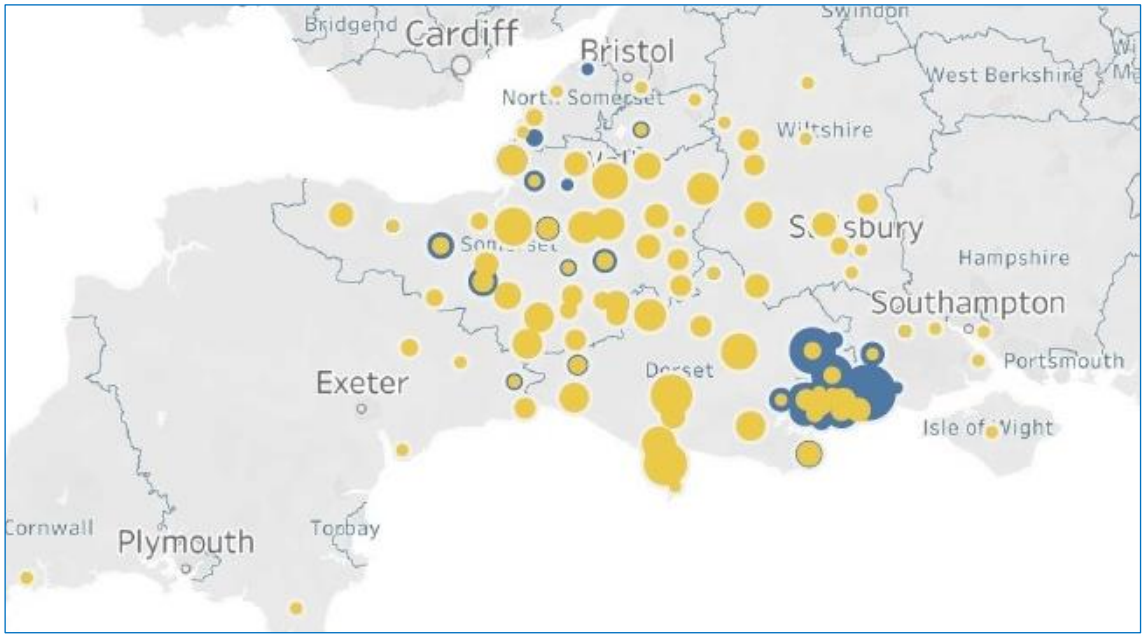

Image: © 2023 Mapbox © OpenStreetMap

Figure 2 - DSAA Tasking Apr 22 to Mar 23

As evidenced in Figure 2, the nature of HEMS operations is such that the DSAA helicopter can be tasked to any location within its area of responsibility (AOR) and beyond. Moreover, the instances where the DSAA helicopter is tasked beyond its immediate AOR reflect the joint and integrated approach to HEMS tasking in the south-west region.[8] Consequently, recovery to Henstridge can be from any direction.

HEMS is very much a demand-led service, consequently, a *typical* year cannot truly be considered as such; Figure 2, however, is broadly representative of the DSAA's annual activities.

8. Neighbouring AAs are Wiltshire, Hants & Isle of Wight, Devon and Great Western.

4.1.3. Henstridge Aerodrome Flying Operations.

DSAA helicopter operations are to and from their operating area at the north side of the Henstridge runway (highlighted by the red circle in Figure 3, below).

Image Source: Google Earth

Figure 3 - DSAA Operating Location at Henstridge

Once clear of the airfield boundary, DSAA departure and arrival profiles are dependent upon tasking and, as such, are not fixed.

DSAA helicopter and Henstridge visual GA movements are integrated by compliance with simple local flying instructions, supported during weekend day flying ops by a manned A-G radio frequency ("Henstridge Radio"). When Henstridge Radio is unmanned, pilots of aircraft in the visual circuit area make "blind" air-to-air calls to enable situational awareness for all.

DSAA HEMS helicopter arrivals are normally flown to the runway (FATO) followed by a hover transition to the DSAA helipad (TLOF) to land (the reverse for departures). If, however, the visual circuit is busy, or use of the runway is precluded, then approaches can be made directly to the DSAA helipad. Prior to recovery to the visual circuit area, DSAA helicopter arrivals make a blind call on the Henstridge Radio frequency no later than 5 mins' flying time/10nm from Henstridge.

4.1.4. Existing DSAA Local (VFR) Approach and Departure Procedures.

In addition to Para 4.1.3, due to the prevailing Henstridge visual activity, DSAA VFR arrivals are usually from the north east of the aerodrome, avoiding known and publicised noise sensitive areas around local villages. Departures are predominantly to the south west, again avoiding noise sensitive areas, before proceeding on task. VFR approach and departure routings are depicted in Figure 4, below.

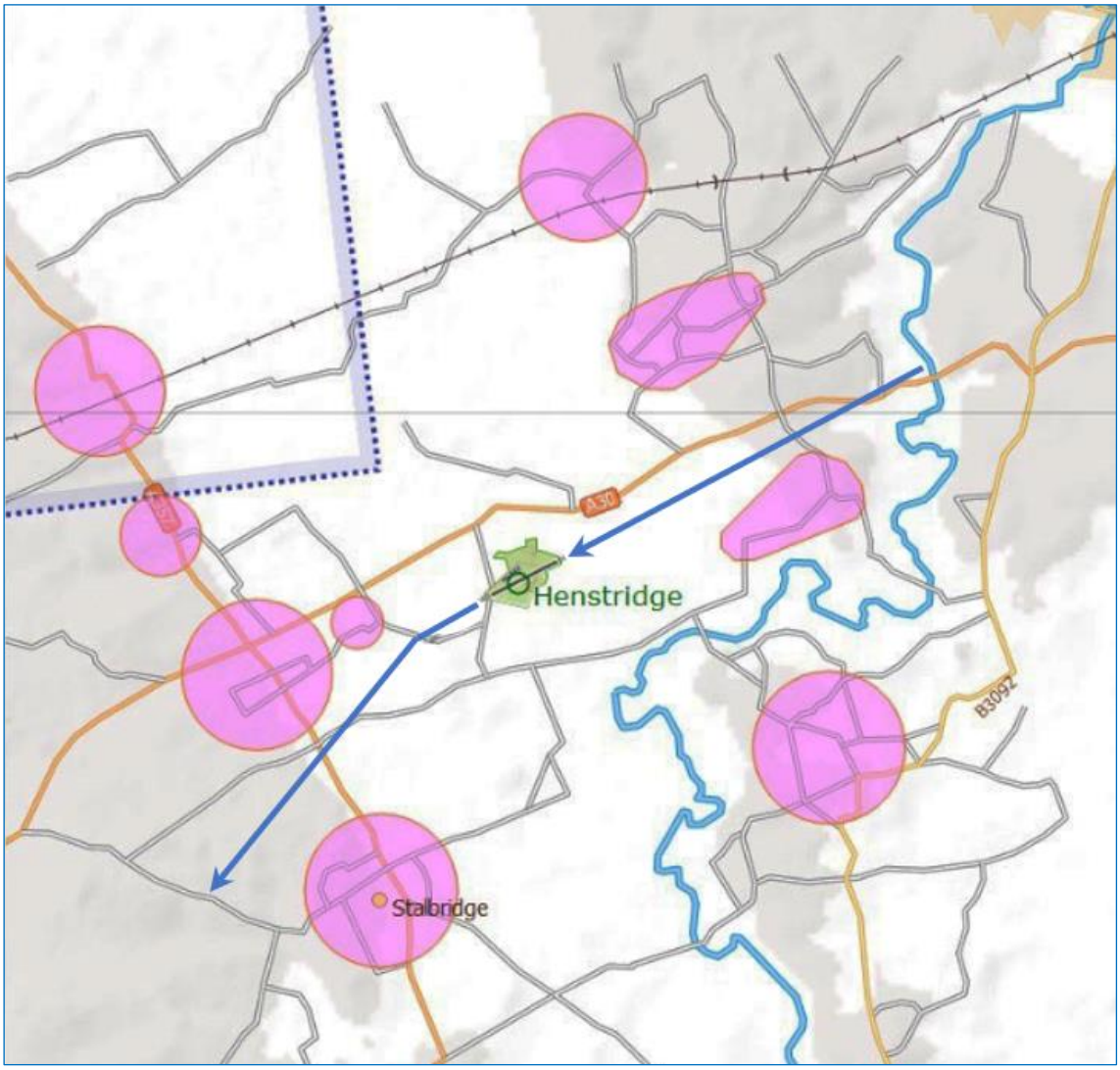

Image source: https://henstridgeairfield.com/forpilots/

Figure 4 - Existing DSAA Local (VFR) Approach and Departure Procedures

4.2. Detailed Description of the Changes to Airspace Design and Operation.

4.2.1. Airspace Design Evolution.

DSAA conducted extensive discussions with Pildo Wessex Ltd, the UK CAA-approved procedure design organisation (APDO), including an APDO site visit to Henstridge.

Local flying activity, DSAA's neighbouring aviation stakeholders' activities and the potential frequency of DSAA's utilisation of the implemented design were instrumental to the evolution of the proposed IFP design. DSAA's VFR operations (i.e. Figure 4, above) and operational requirements for the proposed IFP design were captured by the APDO.

As evidenced in Figure 2, above, the nature of HEMS operations is such that the DSAA helicopter is tasked to any location within its area of responsibility (AOR) and beyond; consequently, recovery to Henstridge can be from any direction. At this early juncture of GNSS IFP development and implementation in the UK, it was considered more amenable from a regulatory perspective to align and design the proposed IFPs to the RW at Henstridge. The prevailing winds in the Henstridge area are westerly; accordingly, aligning and designing the proposed IFPs to Henstridge's RW24 is preferrable.

Ultimately, this approach to the development of the proposed design enables alignment with the existing DSAA VFR flight profiles, while remaining cognisant of associated flying operations at RNAS Yeovilton, Yeovil (Westland), MOD Boscombe Down and Compton Abbas and, therefore, minimising potential impact(s) on local airspace users.

These overarching tenets informed the approach to the design of the proposed IFPs to support DSAA operations at Henstridge.

4.2.2. Description of Proposed Changes - Airspace Design.

- *Proposed Design - Approach (Plan View Detail)*. Figure 5, below, provides the detail of the plan view of the ACP-2022-033 IFP design approach. The full approach plate is provided at Annex A.

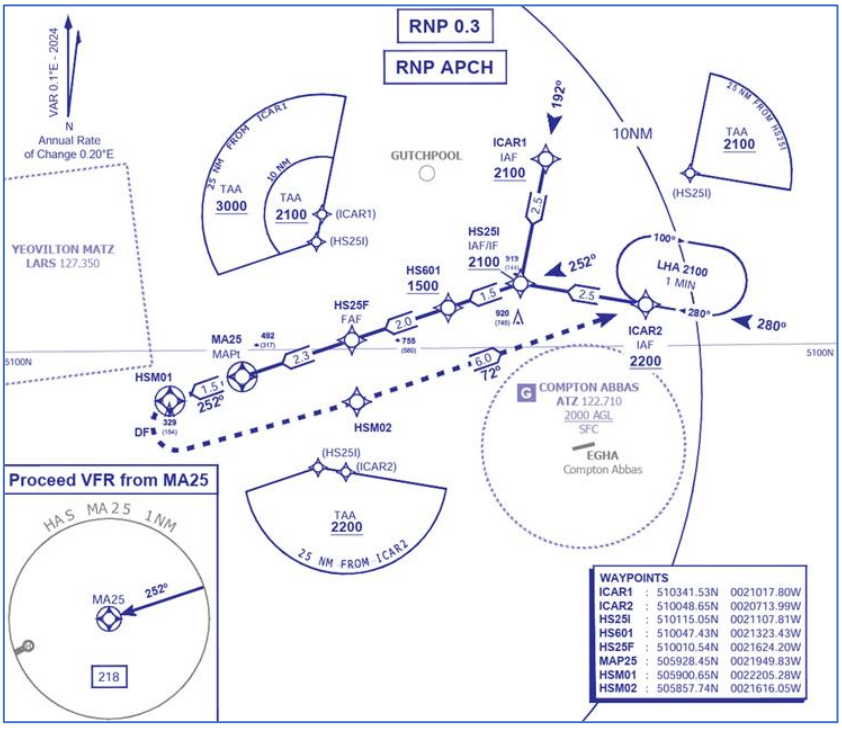

Image Source: Pildo Wessex Ltd

Figure 5 - ACP-2022-033 Proposed IFP Design - Approach (Plan View Detail)

- *Proposed Design - Approach (Elevation View Detail)*. Figure 6, below, provides the detail of the elevation view of the ACP-2022-033 IFP design approach. The full approach plate is provided at Annex A.

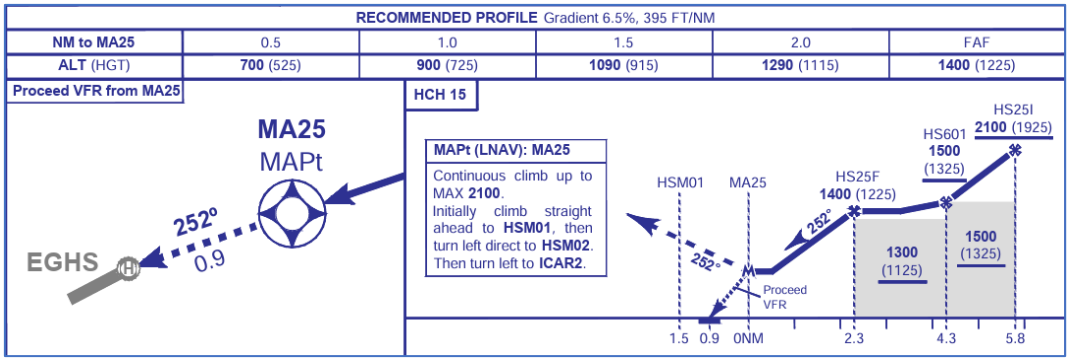

Image Source: Pildo Wessex Ltd

Figure 6 - ACP-2022-033 Proposed IFP Design - Approach (Elevation View Detail)

- *Proposed Design - Departure (Plan View Detail)*. Figure 7, below, provides the detail of the plan view of the ACP-2022-033 IFP design departure. The full departure plate is provided at Annex A.

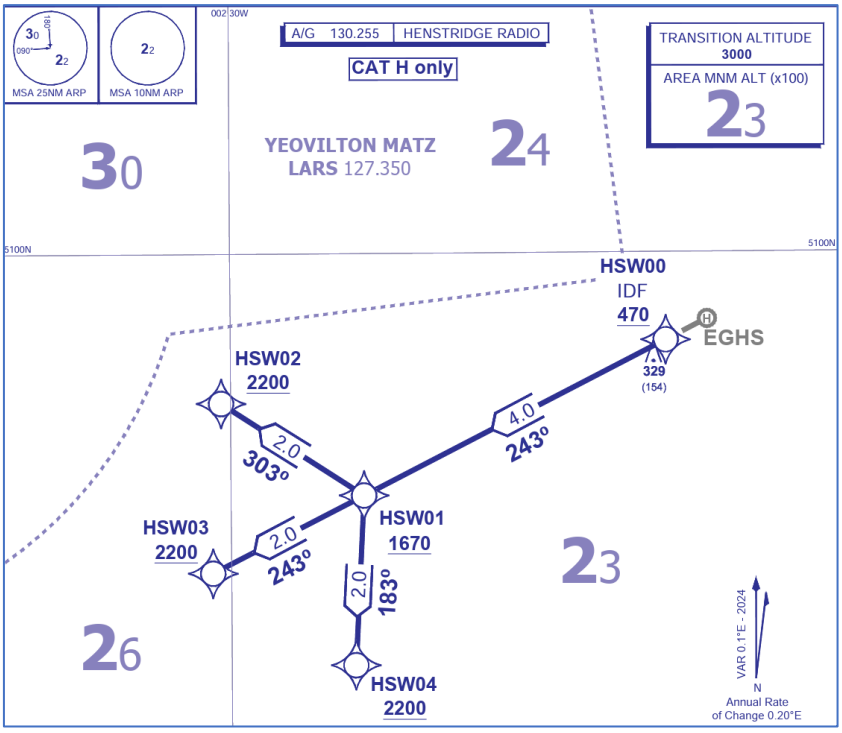

Image Source: Pildo Wessex Ltd

Figure 7 - ACP-2022-033 Proposed IFP Design - Departure (Plan View Detail)

4.2.3. *Description of Proposed Changes - DSAA HEMS Movements.* Acknowledging that HEMS is a demand-led service, the introduction of the proposed IFP design could deliver an additional 72 AA missions, *per annum*, in the existing DSAA 19-hour operation, which corresponds to a 6.16% increase in DSAA HEMS movements. The nature of HEMS operations is such that an additional 72 missions cannot simply be distilled down to a specific number of sorties per calendar month/week.

4.2.4. *Description of Proposed Changes - Henstridge Aerodrome Movements.* The introduction of the proposed IFP design would not introduce a corresponding variance in the aircraft types in operation at

Henstridge. The additional potential 72 HEMS missions (i.e. 144 aircraft movements) would correspond to a 1.52% increase in Henstridge Aerodrome movements.

4.3. Aviation Stakeholder Engagement Activities.

4.3.1. Early (Pre-Stage 3) Aviation Stakeholder Engagement.

Since 2008 and over the course of its operation at Henstridge, DSAA has established and continues to maintain strong relationships with its aviation and non-aviation neighbours (i.e. the application's stakeholders), with whom DSAA enjoys regular and cordial dialogue.

Prior to its Stage 3 aviation stakeholder activities, DSAA had engaged with a range of its neighbouring stakeholders to discuss the application and its early airspace design concepts. DSAA met with ATC staffs at Royal Naval Air Station (RNAS) Yeovilton and Ministry of Defence (MOD) Boscombe Down. Additionally, DSAA attended the South West Regional Airspace Users' Working Group (SW RAUWG) at MOD Boscombe Down, at which the proposal was outlined and discussed with a range of aviation stakeholders adjacent to Henstridge.

Accordingly, DSAA was well placed to conduct its Stage 3 stakeholder engagement activities as it had already well-established and open relationships with its neighbouring aviation stakeholders and had engaged many of them as part of the early stages of the ACP-2022-033 process.

4.3.2. Stage 3 Aviation Stakeholder Engagement.

As part of Stage 3 of the CAP1616 Part 1c process, DSAA considered and engaged relevant aviation stakeholders to ascertain what impact(s), if any, the proposed IFP design might have on stakeholders' operations.

The engagement activities took place between 6 Dec 23 and 30 Jan 24. All stakeholder engagement was proactive, cordial and informative and there was overwhelming support for the application and its promulgated statement of need. Moreover, there was no direct feedback that either impacted or influenced the proposed IFP design.

Discussions with neighbouring aviation stakeholders centred around notification and communication procedures, and all relevant parties supported the development of operational level letters of agreement (LOAs)/memoranda of understanding (MOUs) to ensure that relevant parties' notification and coordination requirements would be met. All parties were keen to continue dialogue, and DSAA undertook to continue engaging stakeholders across the ACP timeline and on into the operation of the proposed IFP design.

4.3.3. ACP-2022-033 Stakeholder Engagement Summary Report.

The ACP-2022-033 Stakeholder Engagement Summary Report summarises the engagement activities, stakeholder responses and DSAA's analyses of the latter. Stakeholder feedback and responses prompted neither changes to, nor revision of the proposed IFP design, notification and coordination of the operation of the proposed IFPs was an obvious theme.

Managing the operation of the proposed IFP design within the existing neighbouring airspace infrastructure and operation has been a consistent focus for DSAA throughout the ACP process, and DSAA continues to work with the relevant parties to progress the necessary letters of agreement (LOAs) and memoranda of understanding (MOUs).

The ACP-2022-033 Stakeholder Engagement Summary Report is at Attachment 1 and can be found on the application's ACP portal.

4.4. Detailed Description of Anticipated Operational Impacts.

As part of Stage 3 of ACP process, DSAA engaged relevant neighbouring and national aviation stakeholders to ascertain what impact(s), if any, the proposed IFP design might have on stakeholders' operations. DSAA, however, acknowledges that stakeholder engaged is a continuum across the ACP timeline and on into the operation of the proposed IFP design.

All stakeholder engagement was proactive, cordial and informative and there was overwhelming support for the application and its promulgated statement of need. Moreover, there was no direct feedback that either impacted or influenced the proposed IFP design, nor was feedback received that indicated any operational impacts on stakeholders within the airspace and aerodrome environment around Henstridge Aerodrome.

Discussions with neighbouring aviation stakeholders centred around notification and communication procedures, and all relevant parties supported the development of operational level LOAs/MOUs to ensure that relevant parties' notification and coordination requirements are met. DSAA and the relevant parties were keen to continue dialogue.

DSAA undertook to continue engaging its stakeholders across the ACP timeline and on into the operation of the proposed IFP design.

The ACP-2022-033 Summary Engagement Report is at Attachment 1 and on the application's ACP portal.

4.5. Supporting Infrastructure and Resilience.

The proposed airspace design, its operation and the ability to mitigate the anticipated relatively low operational impacts are such that there are no anticipated impacts of the proposal on supporting infrastructure and resilience.

4.6. Safety.

DSAA's primary driver for applying for GNSS IFPs under CAP1616[9] to support the HEMS operations at Henstridge Aerodrome is that it would allow the operation of the DSAA helicopter (particularly its recovery) under IMC, offering significant safety benefits over VFR flight in marginal VMC conditions, in turn, delivering vital continuity of this critical care service.

DSAA and the Henstridge Aerodrome owner propose to establish operating procedures that will confirm that the aerodrome and visual circuit area are unavailable for all other aircraft during those daylight hours that weather conditions determine the HEMS helicopter's use of the proposed IFP design.

In such instances and during routine HEMS operations at night, the DSAA operation effectively becomes a *de facto* helicopter operating to an unlicensed landing site with a FATO and TLOF. In the absence of unequivocal CAA guidance on this matter, DSAA has, therefore, developed this safety case on this assumption.

The overarching goal of ACP-2022-033 Alternative Top-level Strategy and Baseline Safety Goals is that the proposed IFP design to support DSAA HEMS operation at Henstridge will be operated with an acceptable degree of safety.

DSAA believes that local area weather and air traffic analyses and the local Henstridge Aerodrome visual circuit management procedures demonstrate that any new risk(s) associated with the introduction and operation of the proposed IFP design could be considered ALARP. In addition, an emergent LOA/MOU between DSAA, RNAS Yeovilton and Yeovil (Westland) can support the safe and coordinated use of the proposed IFP design within the immediate airspace construct surrounding Henstridge Aerodrome.

Thus, DSAA contends that through its data and traffic analyses, assessment of the appropriate risk areas and development of the corresponding mitigations solutions, the risks associated with the implementation,

[9]. CAA (2021), "*CAP1616*", Part 1c, (online) accessed 12 Nov 23.

introduction and through-life operation of the proposed IFP design to support HEMS operations at Henstridge Aerodrome are acceptable and - demonstrably - *as low as reasonably practicable* (ALARP), given the generally benign aviation environment around Henstridge and the limited times the procedure will be used.

The ACP-2022-033 Safety Case document is at Attachment 2.

4.7. Environmental Assessment.

4.7.1. Environmental Impact.

The introduction of the proposed PinS to support DSAA operations at Henstridge do not constitute a significant change from the extant DSAA operations at the airfield and, as such, would have minimal environmental impact. Accordingly, undertaking a full/detailed environmental assessment and associated analyses for this Level 1 airspace change, as detailed in CAP1616, is not required.[10]

4.7.2. Justification for No Additional Environmental Assessment Requirement.

As set out in Para 4.2.4, above, DSAA assess the potential number of aircraft movements resulting from the introduction of the proposed IFP design to be in the order of 144 (i.e. 72 HEMS missions), which corresponds to a 1.52% increase in Henstridge Aerodrome movements and, therefore, well below the 10% or more value quoted in CAP1616 (4th Edition).[11]

CAP1616 (4th edition) stated that "[n]o further environmental assessment will be necessary if:

- [T]he change sponsor can reasonably demonstrate that the introduction of the RNP IAP is not expected to increase the total number of aircraft movements at the aerodrome in the first two years after introduction, by 10% or more (by at least a minimum of 3,650 movements per year), and;
- [T]he proposal does not change the final approach path of aircraft to the runway within 1nm from the runway end.
- [T]he proposal will not change the environmental impact of aircraft utilising other aerodromes"[12]

The DSAA responses to CAP1616 (4th Edition) codicils cited above are that the introduction of the proposed IFPs to support DSAA HEMS operations at Henstridge:

- Could correspond to a 1.52% increase in Henstridge Aerodrome movements, which is well below the 10% value quoted in CAP1616 (4th Edition).
- Does not change the final approach path of aircraft to the runway within 1nm of the runway end.
- Will not change the environmental impact of aircraft utilising other aerodromes.

DSAA can, therefore, demonstrate that undertaking a full/detailed environmental assessment of the proposal is not required.

4.8. Final Options Appraisal.

The ACP-2022-033 Stage 2 Submission contains the application's design options appraisal. No feedback from Stage 3 stakeholder engagement activities and responses prompting a change to the design; thus, the Stage 2 options appraisal is the *de facto* final options appraisal.

Following the conclusion of its stakeholder engagement activities at Stage 3, DSAA's discussion with the APDO during the latter and final stages of the production of the final IFP design identified that direction of the approach leg was rotated clockwise (from 243°T to 252°T); this adjustment to the design allowed a lower procedure minimum, by shifting the approach away from local terrain.

10. CAA (2021), Page 99 (online), accessed on 31 Jan 24.
11. *ibid*.
12. *ibid*.

While affording HEMS flights greater operational capability (i.e. being able to descend to a lower altitude on the approach), DSAA assessed that this subtle change did not represent a significant departure from that which was engaged upon at Stage 3; thus, no subsequent engagement was deemed necessary.

4.8.1. Potential Economic Impact.

Given the limited scope of the proposal (potentially an increase of 144 Henstridge Aerodrome movements, i.e. 1.52%), that the proposed procedure replicates, to a great extent, the current operation and the nature or air ambulance operations, monetising and quantifying the potential economic impact of the proposed airspace change in line with CAP1616 (4th Edition), Table E2, it is neither proportionate, nor possible. Moreover, DSAA assess that any economic impact(s) associated with the implementation and utilisation of the proposed IFP design would be internal to the DSAA.

Accordingly, an assessment of any potential economic impacts has not been included.

4.8.2. Cost-benefit Analysis.

For the same reasons set out in Para 4.8.1, above, a cost-benefit analysis of the proposal has not been included.

5. SUMMARY

DSAA is a key part of the emergency services network in the south west region and, since 2008, has been based at Henstridge Aerodrome, situated on the Dorset/Somerset border in Class G airspace and operates without approach control (WAC) services.

DSAA, therefore, seeks to introduce GNSS IFPs to enhance its HEMS operational capability at Henstridge Aerodrome during DSAA's existing operating hours and, in turn, DSAA's delivery of critical patient care. This capability enhancement is also consistent with the DSAA Charity's ambition to transition the HEMS operation at Henstridge to H24 in the future.

Henstridge is a small, unlicenced GA aerodrome with no ATZ, located in East Somerset, within Class G airspace and has one runway. Flying activity in the vicinity of Henstridge is military and GA. Henstridge has no air traffic service (ATS) but is supported by a limited air-ground communications service (AGCS) at weekends. Currently, there are no instrument approaches at Henstridge and the introduction of the proposed IFP design would not constitute a significant change to the existing airfield operations.

DSAA and the Henstridge Aerodrome owner propose to establish operating procedures that will confirm that the aerodrome and visual circuit area are unavailable for all other aircraft during those daylight hours that weather conditions determine the HEMS helicopter's use of the proposed IFP design.

In such instances and during routine HEMS operations at night, the DSAA operation effectively becomes a *de facto* helicopter operating to an unlicensed landing site with a FATO and TLOF. In the absence of unequivocal CAA guidance on this matter, DSAA has, therefore, developed this safety case on this assumption.

The predominance of flying activity in the vicinity of Henstridge is either military or GA; the latter is undertaken under VFR. DSAA assess that the introduction of the proposal would not result in any positive or negative impacts for other airspace users using the surrounding airspace. Thus, were the need to arise to use the proposed PinS procedure in IMC, then the likelihood of either conflict or displacement of GA is assessed as minimal to zero. Similarly, military flying in the local area would invariably be associated with either RNAS Yeovilton or MOD Boscombe Down and supported by their respective ATSUs, from whom the DSAA already receive an ATS when available.

DSAA remained cognisant of the existing local airspace infrastructure and users, in turn, proffering a safe and assured IFP design that avoided unnecessary complexity, had minimal impact on local airspace users, replicated existing HEMS VFR routing and continued to avoid overflight of densely-populated areas.

All of the application's stakeholder engagement was proactive, cordial and informative and there was overwhelming support for the application and its promulgated statement of need. There was no direct feedback that either impacted or influenced the proposed IFP design.

Discussions with neighbouring aviation stakeholders centred around notification and communication procedures, and all relevant parties supported the development of operational LOAs/MOUs to ensure that relevant parties' notification and coordination requirements can be met.

DSAA contends that through its data and traffic analyses, assessment of the appropriate risk areas and development of the corresponding mitigations solutions, the risks associated with the implementation, introduction and through-life operation of the proposed IFP design to support HEMS operations at Henstridge Aerodrome are acceptable and - demonstrably - *as low as reasonably practicable* (ALARP), given the generally benign aviation environment around Henstridge and the limited times the procedure will be used.

Accordingly, the ACP-2022-033 proposed IFP design is submitted to the CAA at Stage 4.

ANNEXES

A. ACP-2022-033 Proposed IFP Design Plates.
B. Emergent LOA Between DSAA, RNAS Yeovilton and Yeovil (Westland) Covering the Management, Notification and Coordination of the DSAA Henstridge GNSS IFPs.
C. Early Draft Henstridge Aerodrome Operating Instructions Covering the Operational Use of the DSAA Henstridge GNSS IFPs.

ATTACHMENTS

1. ACP-2022-033 Stage 3 Engagement Summary Report (online).
2. ACP-2022-033 Safety Case (not ACP portal version).

REFERENCES AND BIBLIOGRAPHY

1. CAA (2021), "*CAP1616, 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*", Edition 4 (online).
2. CAA (October 2023), "*CAP1616, Airspace Change Process"*, Edition 5 (online).
3. CAA (November 2023), "*CAP1616f, Guidance on Airspace Change Process for Permanent Airspace Change Proposals*" (online).
4. CAA (November 2023), "*CAP1616h, Guidance on Airspace Change Process for Level 3 and Pre-Scaled Airspace Change Proposals*" (online).

Annex A to
ACP_2022_033_Stage_4_Submission_V1_0_FINAL
Dated 28 Mar 24

ACP-2022-033 PROPOSED IFP DESIGN PLATES

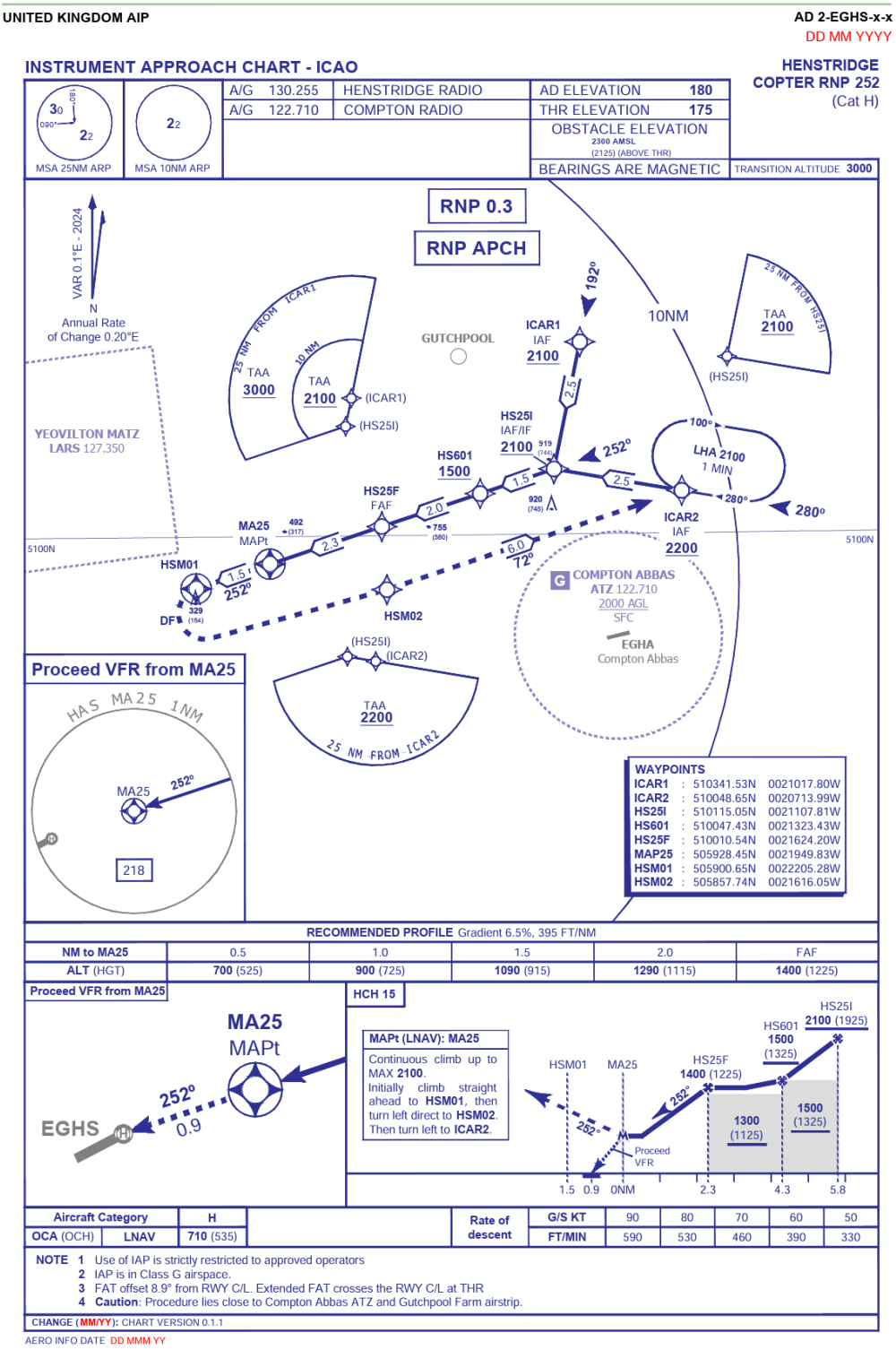

Image Source: Pildo Wessex Ltd

Figure 8 - ACP-2022-033 Proposed IFP Design - Approach

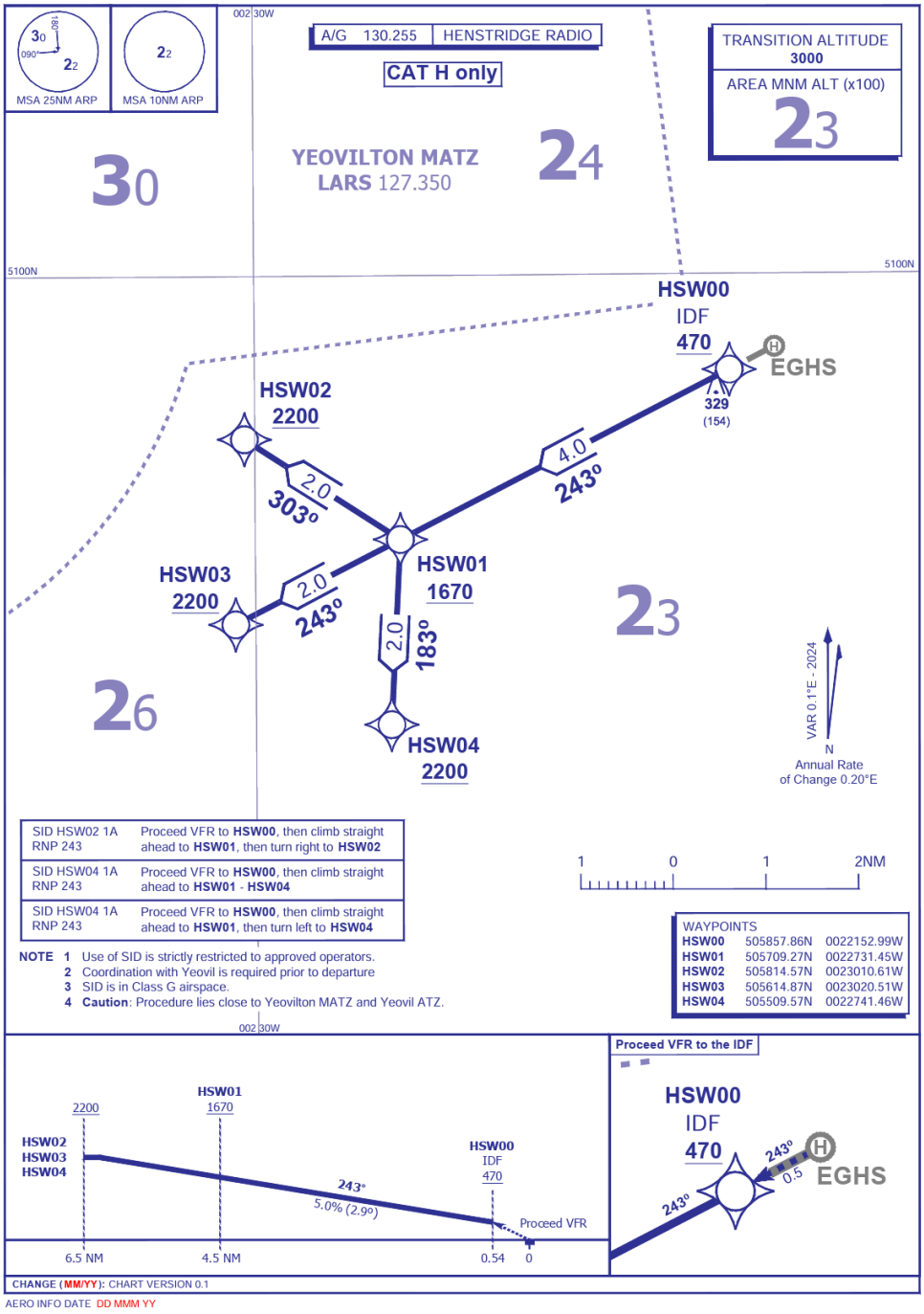

Image Source: Pildo Wessex

Figure 9 - ACP-2022-033 Proposed IFP Design - Departure

Annex B to
ACP_2022_033_Stage_4_Submission_V1_0_FINAL
Dated 28 Mar 24

EMERGENT LOA BETWEEN DSAA, RNAS YEOVILTON AND YEOVIL (WESTLAND) COVERING THE MANAGEMENT, NOTIFICATION AND COORDINATION OF THE DSAA HENSTRIDGE GNSS IFPS

1. Following bilateral engagements between DSAA and the relevant parties, an initial tripartite discussion between DSAA and RNAS Yeovilton and Yeovil (Westland) ATSUs staffs was held on Tue 20 Feb 24 at DSAA's base at Henstridge.

3. Indicative Timeline for Completion of the DSAA, RNAS Yeovilton and Yeovil (Westland) LOA/MOU. Table 2Table 3, below, offers an indicative timeline for the completion of the DSAA, RNAS Yeovilton and Yeovil (Westland) LOA/MOU.

Ser	Activity	Indicative Date (NLT)	Remarks/Comments
1	Initial outline draft to RNAS Yeovilton and Yeovil (Westland) ATSU POCs.	Mid-Apr 24	DSAA (SAS/Gama) lead.
2	Proposed amendments for discussion.	Apr/May 24	
3	Agreement of final draft.	May/Jun 24	Update to CAA, as required.
4	Finalised version ready for incorporation into aerodrome operators' guidance notes.	Jun 24	Awareness briefing to all parties' staffs.
5	Implementation of LOA/MOU.	A/R	Subject to CAA Stage 5 decision and implementation conditions.

Table 2 - Indicative Timeline for DSAA, RNAS Yeovilton and Yeovil (Westland) LOA/MOU

Annex C to
ACP_2022_033_Stage_4_Submission_V1_0_FINAL
Dated 28 Mar 24

EARLY DRAFT HENSTRIDGE AERODROME OPERATING GUIDANCE COVERING THE OPERATIONAL USE OF THE DSAA HENSTRIDGE GNSS IFPS

1. Draft EGHS HEMS IFP SOP. The early draft iteration of the Henstridge Aerodrome operating guidance for the management of the aerodrome and visual circuit during those instances when the HEMS flight will be utilising the proposed IFP design during daylight hours in inclement weather and at night is at Figure 10, below.

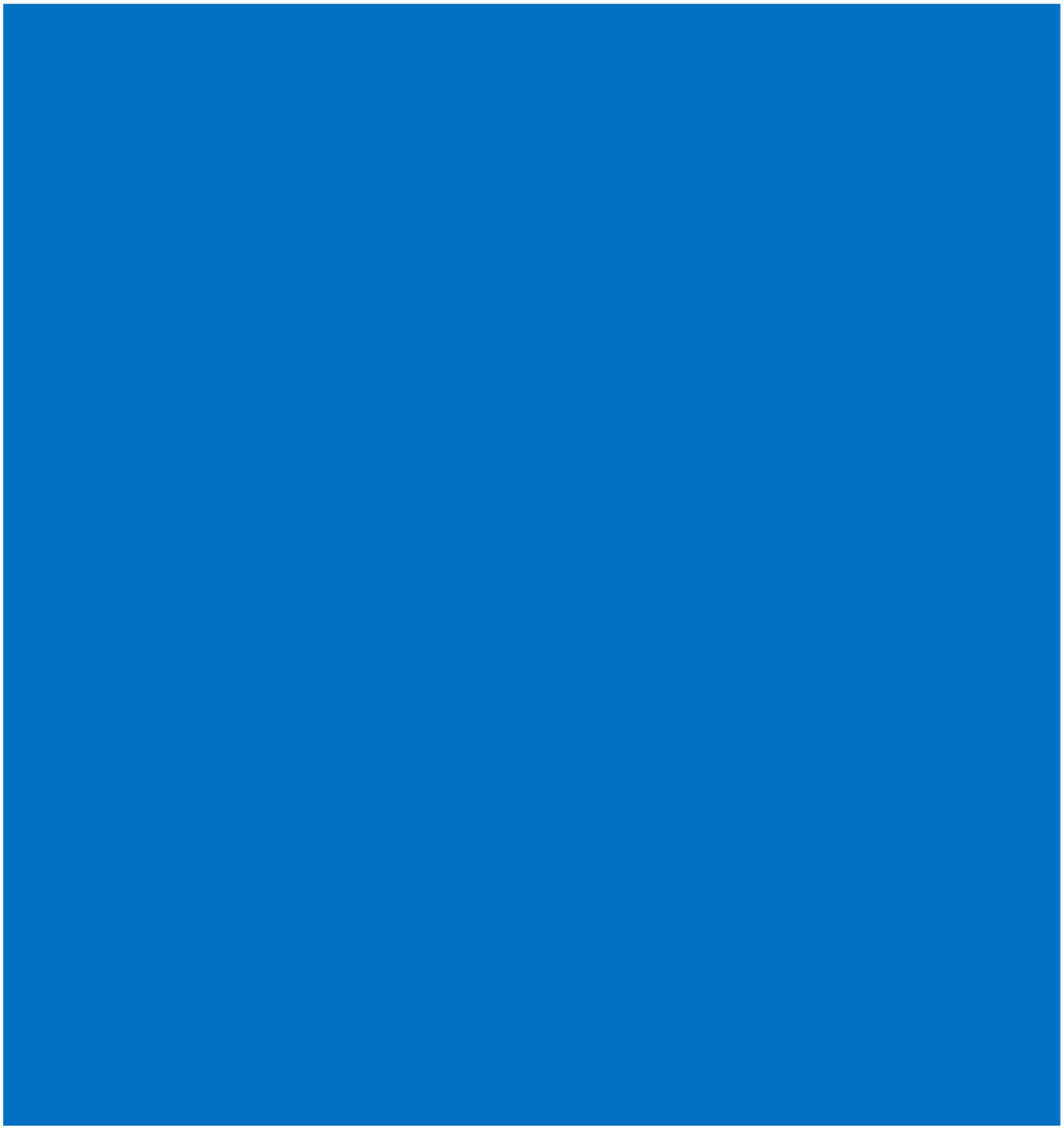

Figure 10 - Draft Henstridge Aerodrome SOP - HEMS IFP Arrivals V1.0

2. The draft SOP at Figure 10 has been shared with the Henstridge Aerodrome owner and DSAA awaits initial feedback and proposed amendments for collective discussion, amendment and agreement, as required over the period March-June 2024.

3. **Indicative Timeline for Completion of the EGHS DSAA HEMS IFP SOP**. Table 3, below, offers an indicative timeline for the completion of the EGHS DSAA HEMS IFP SOP.

Ser	Activity	Indicative Date (NLT)	Remarks/Comments
1	Initial draft SOP to Henstridge Aerodrome owner.	Mar 24	
2	Proposed amendments for discussion.	Apr 24	
3	Agreement of final draft.	May 24	Update to CAA, as required.
4	Finalised version ready for incorporation into aerodrome operators' guidance notes.	Jun 24	Awareness briefing to EGHS AGCS staffs.
5	Implementation of SOP.	A/R	Subject to CAA Stage 5 decision and implementation conditions.

Table 3 - Indicative Timeline for EGHS DSAA HEMS IFP SOP

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