

ACP-2022-033

Global Navigation Satellite System Instrument Flight Procedures
at Henstridge Aerodrome, Dorset
to Support
Dorset & Somerset Air Ambulance

CAP 1616 (Part 1c) Stage 3 Stakeholder Engagement Materials



Contents

This pack-up has been produced to meet the CAA's CAP1616 Part 1c stakeholder engagement requirements and covers the following discussion areas, upon which your response is requested:

- Introduction.
- CAP1616 Part 1c Process Requirements.
- Henstridge Location, Airspace, DSAA Tasking and Operations Context.
- ACP-2022-033 Proposed Design Option.
- Anticipated Utilisation.
- Qualitative Statements on Potential Impacts.
- Stakeholder Engagement Process.
- What Happens Next.

Stakeholders may also refer to the [ACP-2022-033 Stakeholder Engagement Strategy](#), which includes - *inter alia* - a Glossary of Terms and Abbreviations.



Specialist Aviation Services



INTRODUCTION



Introduction

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 and, since 2008, has been based at Henstridge Aerodrome, situated on the Dorset/Somerset border in Class G airspace and has no approach control services. Currently, the DSAA helicopter operates between the hours of 0700 and 0200 (local), 7 days a week for 365 days of the year, 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.

The DSAA helicopter is operated under the air operator certificate (AOC) of Specialist Aviation Services Ltd (SAS), the sponsor of this airspace change proposal (ACP).



Introduction

DSAA Operational Capability Enhancement. 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. Currently, DSAA departures from and recoveries to Henstridge can only be undertaken under visual flight rules (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.



CAP1616 PART1C PROCESS REQUIREMENTS



CAP1616 Part 1c Process Requirements

CAP1616 states that the introduction of RNP instrument approach procedures (IAPs) without an approach control (WAC) service will be progressed as a scaled “Level 1” Airspace Change Proposal.

Stage 1. At Stage 1 of the process, DSAA completed the corresponding [DAP1916 \(including Statement of Need\)](#) and attended an Initial Assessment Meeting with the CAA, to confirm the process steps and requirements, including assessment of the proposed ACP timeline. The CAA determined that GNSS PinS ACPs (and, therefore, ACP-2022-033) would be subject to the requirements of [CAP1616, Part 1c](#).

Stage 2. Stage 2 of the CAP1616, Part 1c process DSAA developed and assessed appropriate options that address the Statement of Need and produced an assessment of options considered against the Design Principles (DPs). The Stage 2 submission materials can be found the CAA’s ACP-2022-033 portal page at the following [link](#).

Stage 3. At Stage 3, DSAA conducts targeted engagement activity to ensure that relevant stakeholders’ views can be sought and considered as part of the final proposal.



Specialist Aviation Services



HENSTRIDGE LOCATION, AIRSPACE AND DSAA TASKING AND OPERATIONS CONTEXT

Henstridge Location and Airspace Context

Henstridge is a small, unlicensed, general aviation (GA) aerodrome located in East Somerset, between RNAS Yeovilton and Compton Abbas aerodrome, indicated by the red circle in Figure 1. Henstridge has no aerodrome traffic zone (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.

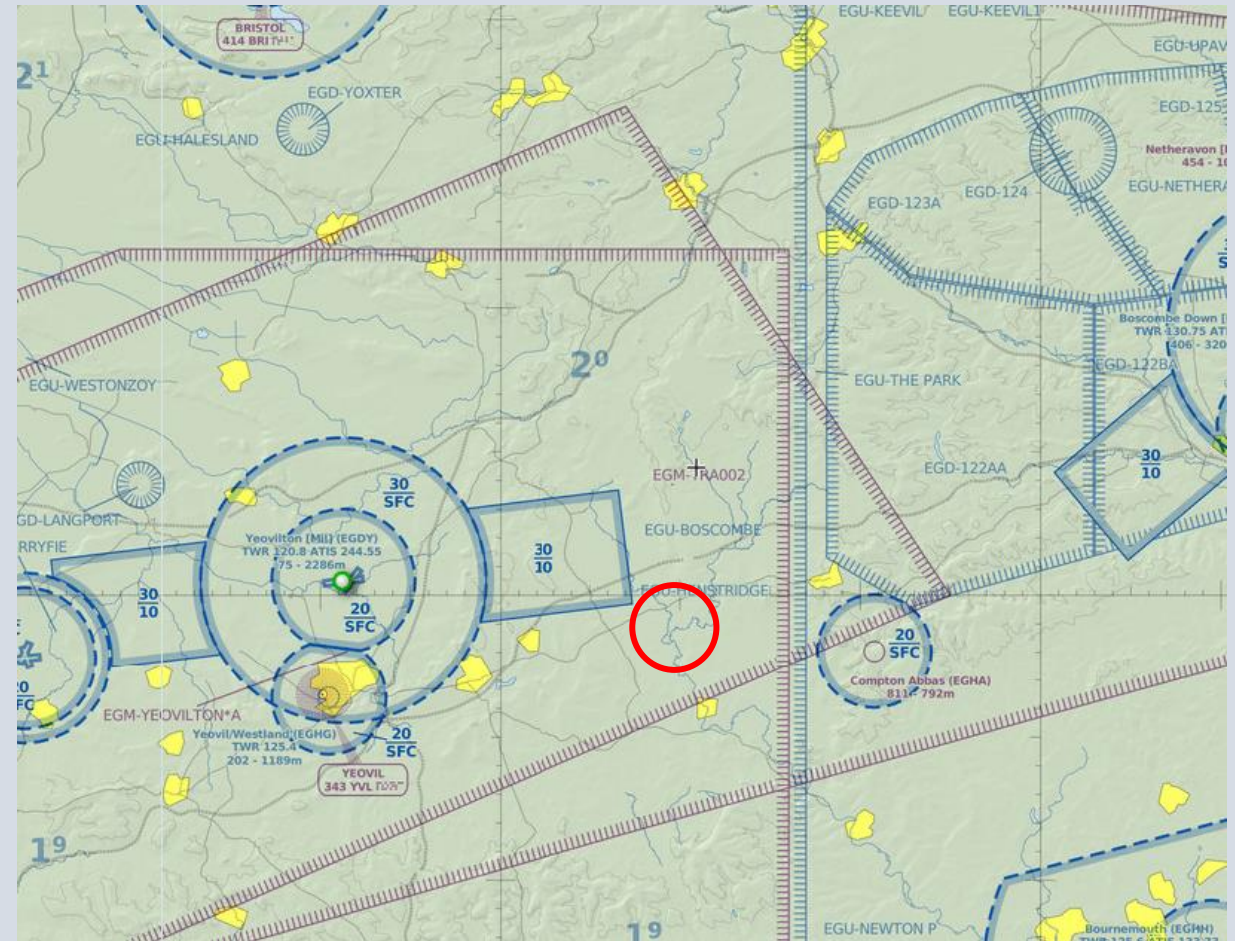


Figure 1 - Henstridge Aerodrome Airspace Context

Image Source: SkyVector

Henstridge Location and Airspace Context

Henstridge has no air traffic services (ADV or AFISO) and a limited AGCS (weekend 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.

An air traffic service (ATS) is available from RNAS Yeovilton, during their operating hours, capacity and coverage, and a limited ATS is available from BRS and BOH ATC. Where no surveillance-based ATS is available, a Basic Service can be obtained from “London Information”.

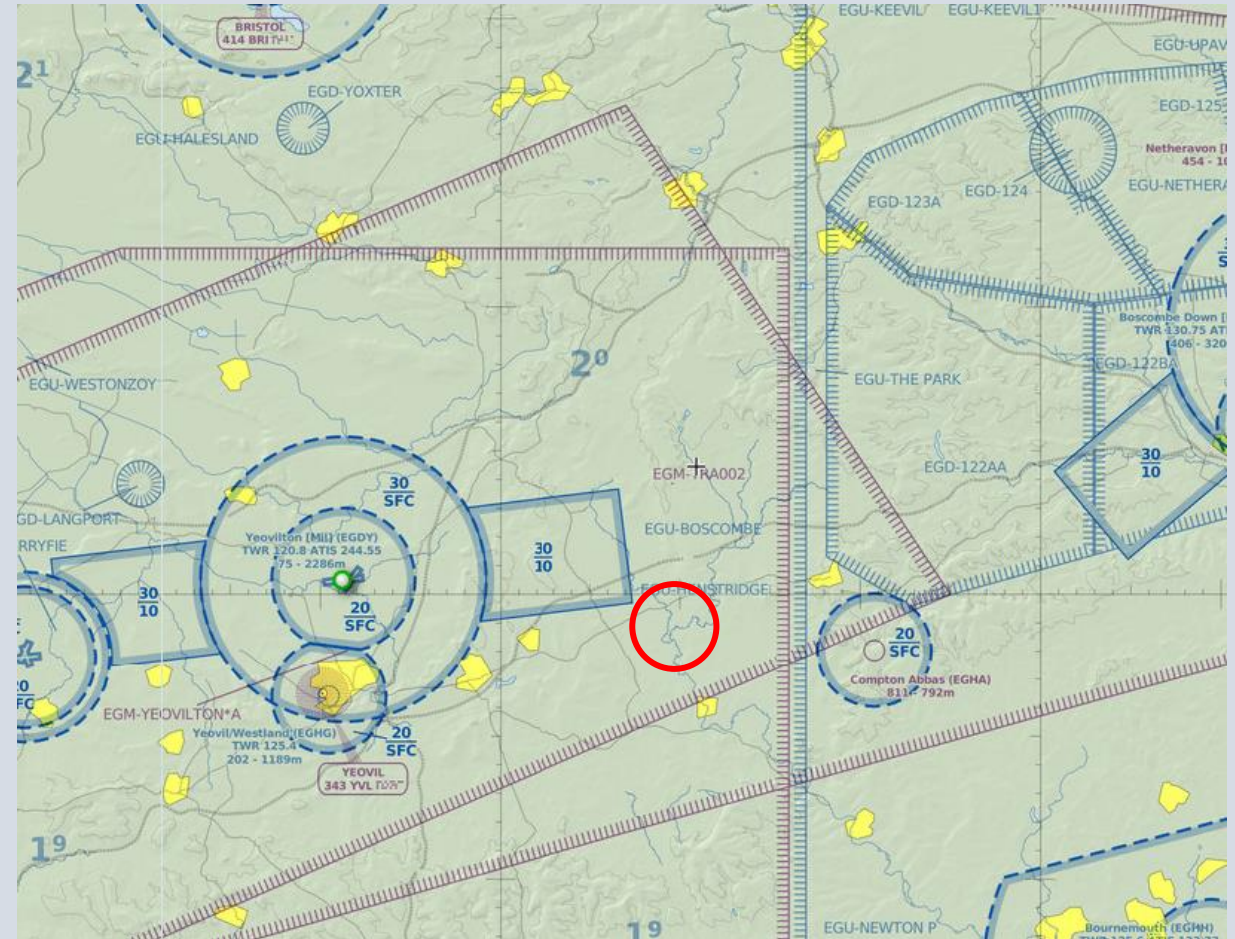


Figure 1 - Henstridge Aerodrome Airspace Context

Image Source: SkyVector

DSAA Tasking

Figure 2 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.

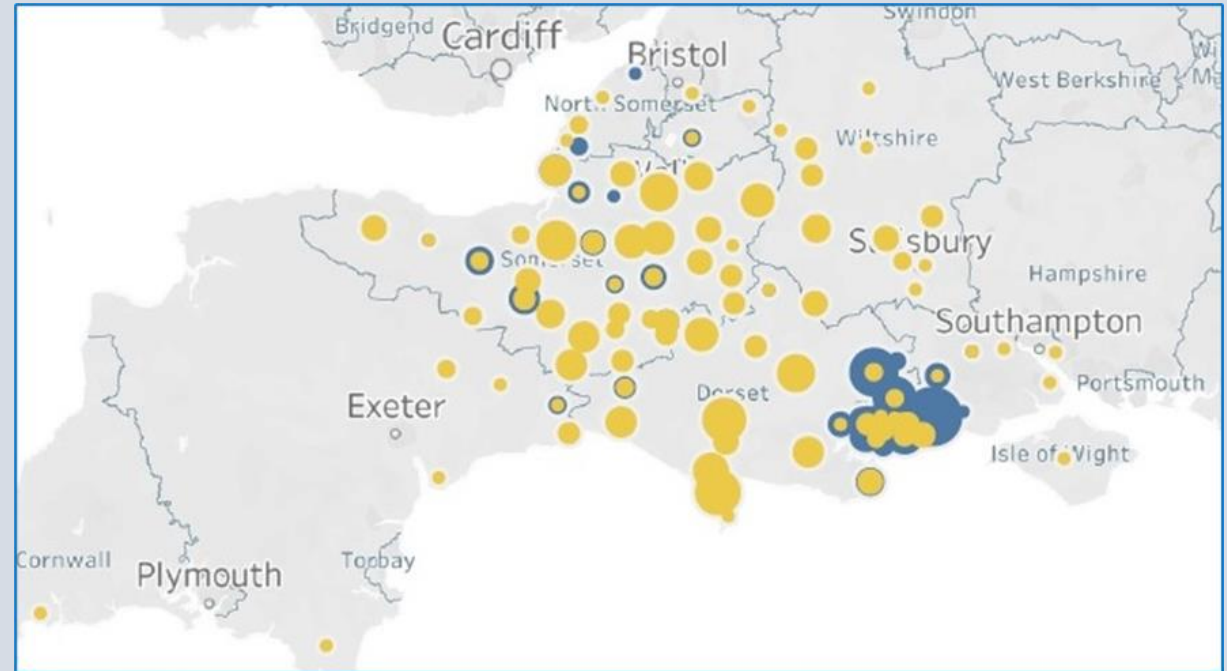


Image: © 2023 Mapbox © OpenStreetMap
Figure 2 - DSAA Tasking Apr 22 to Mar 23

DSAA Tasking

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. 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 DSAA's annual activities.

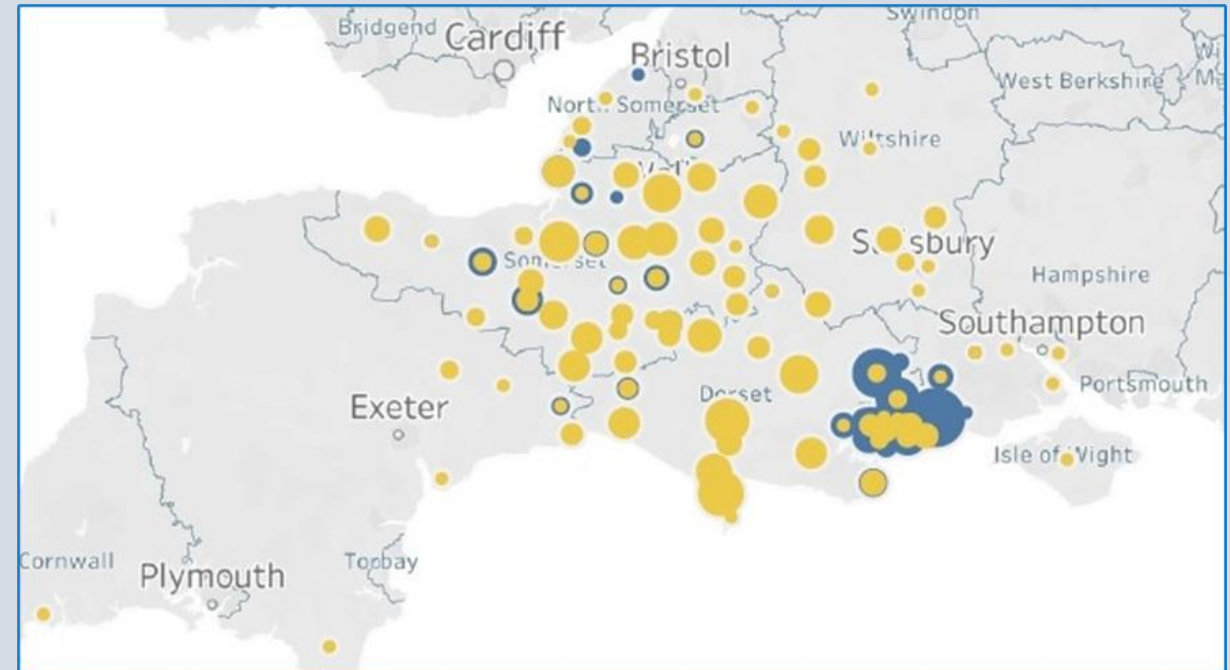


Figure 2 - DSAA Tasking Apr 22 to Mar 23

Image: © 2023 Mapbox © OpenStreetMap

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).

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

DSAA HEMS helicopter arrivals are normally flown to the runway (i.e. the final approach and take-off area (FATO)) followed by a hover transition to the DSAA helipad (i.e. the touchdown and lift-off (TLOF) area) to land (the reverse for departures). If, however, the visual circuit is busy, or use the runway is precluded, then approaches can be made directly to the helipad (TLOF).



Figure 3 - DSAA Operating Location at Henstridge

Image Source: Google Earth

Henstridge Aerodrome Flying Operations

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 air-to-ground radio frequency (“Henstridge Radio”). When Henstridge Radio is unmanned, pilots in the visual circuit area make “blind” air-to-air calls to enable situational awareness for all.

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.



Image Source: Google Earth

Figure 3 - DSAA Operating Location at Henstridge

DSAA VFR Approach and Departure Profiles

VFR approach and departure routings are depicted in Figure 4.

Subject to the prevailing Henstridge visual activity, DSAA VFR arrivals approach 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.

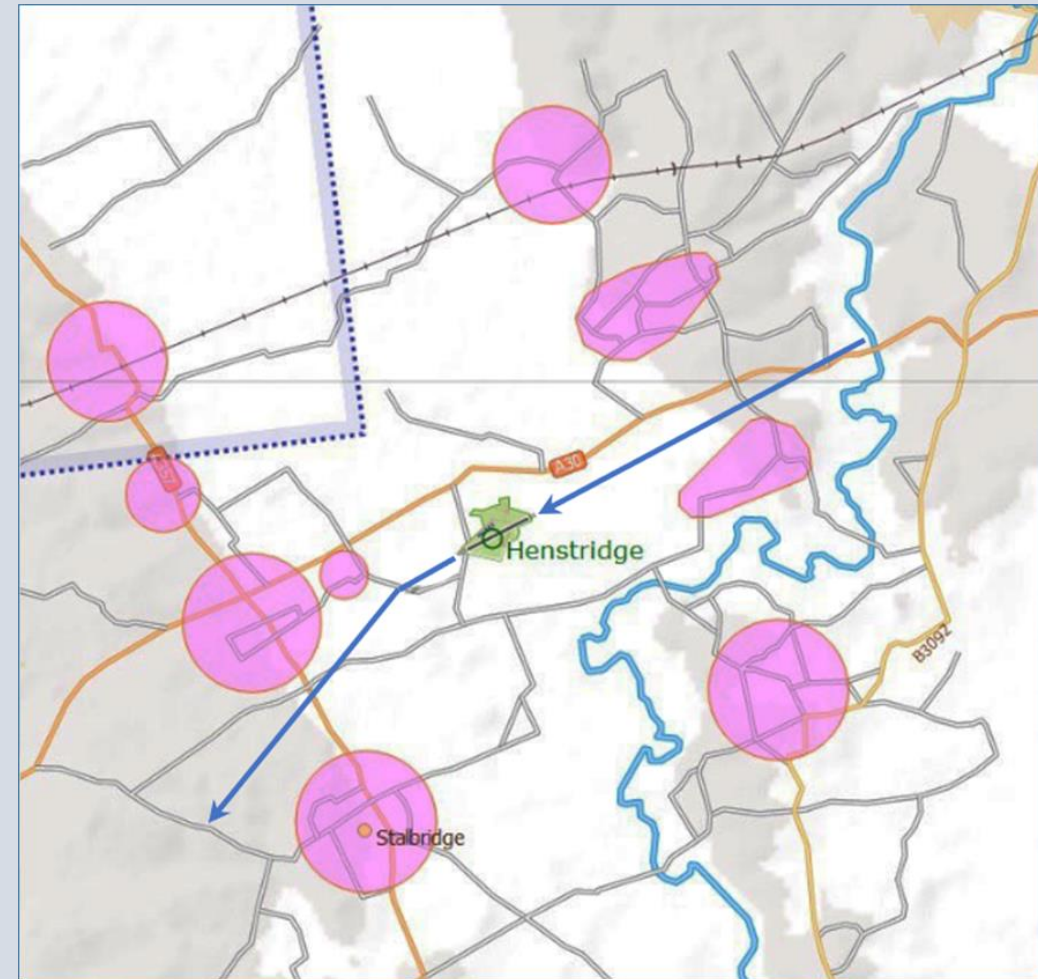


Image source: <https://henstridgeairfield.com/forpilots/>

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



ACP-2022-033 PROPOSED DESIGN OPTION



ACP-2022-033 Design Principles

The ACP-2022-033 Design Principles (DPs) are:

- *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.

DPs 1 and 2 are drawn from CAP1616, Part 1c and must be included in the application; DPs 3 and 4 are additional DPs created by the sponsor to reflect local considerations and/or impacts to other airspace users.



ACP-2022-033 Proposed IFP Design Option

Baseline. Acknowledging that HEMS is a demand-led service, between Apr 22 and Mar 23, DSAA conducted 1168 AA missions - an average of 3 missions per day. Over the same period, 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.

DSAA Operational Capability Enhancement. DSAA, therefore, seeks to implement a proposed IFP design that would enhance HEMS operational capability at Henstridge and deliver an additional 72 AA missions, *per annum*, in turn delivering more critical prehospital care for patients in the existing DSAA 19-hour operation.

“Do Nothing” Option. A “Do Nothing” option (i.e. maintaining the extant operational *status quo*) neither enhances DSAA HEMS operational capability at Henstridge, nor does it meet the application’s DAP1916 and associated Statement of Need (see [ACP-2022-033 portal](#)).

Accordingly, a “Do Nothing” option is not being presented.



ACP-2022-033 Proposed IFP Design Option

Developing the Proposed Design Option. A PinS procedure is exactly as described (i.e. to a specific point in space). As evidenced in Figure 2 (Slide 10), 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 PinS development and implementation in the UK, however, it was considered more amenable from a regulatory perspective to align and design the proposed IFPs to the RW at Henstridge. This overarching tenet informed the approach to the design of the proposed IFPs to support DSAA operations at Henstridge.

The prevailing winds in the Henstridge area are westerly; therefore, aligning and designing the proposed IFPs to Henstridge's RW24 is preferable. Accordingly, IFPs aligned to RW06 and other non-RW-aligned directions have been considered but discounted ([see ACP-2022-033 Stage 2 Submission, Section 7](#)).

Ultimately, this approach to the development of the proposed IFP design (i.e. to RW24) enables alignment with the existing DSAA VFR flight profiles, while remaining cognisant of associated flying operations at RNAS Yeovilton, Yeovil (Leonardo), MOD Boscombe Down and Compton Abbas and, therefore, minimising potential impact(s) on local airspace users.

Design Option 1 - Approach Azimuth

A preliminary azimuth view of the ACP-2022-033 Design Option 1 concept is provided at Figure 5 and will be subject to further refinement and amendment.

Design Option 1's approach and departure profiles broadly replicate current DSAA VFR routings, thereby avoiding any unnecessary complexity and potential disruption to existing local airspace users.

A second missed approach transition fix has been incorporated into the downwind leg to ensure lateral displacement from the Compton Abbas ATZ, if carrying out a second approach following a missed approach.

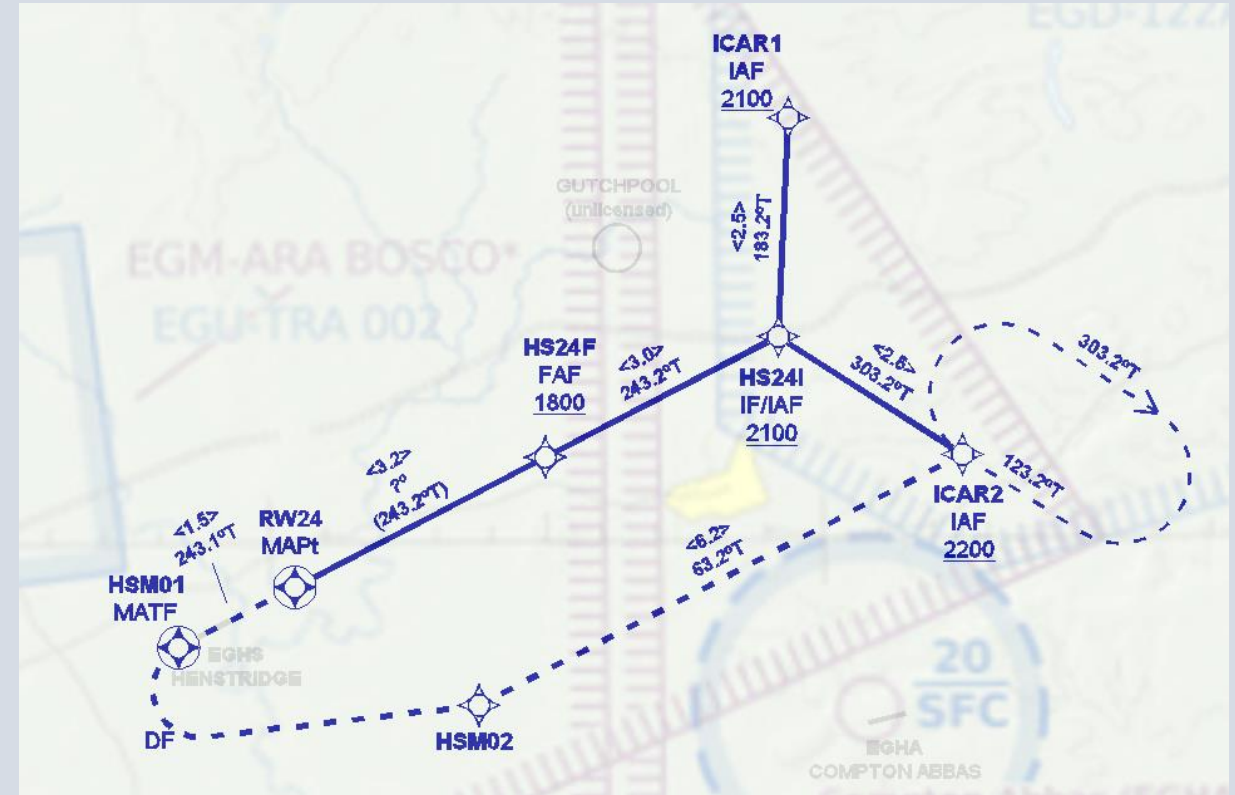


Image Sources: SkyVector & Pildo Wessex

Figure 5 - ACP-2022-033 Design Option 1 Concept - Azimuth

Design Option 1 - Approach Azimuth

Design Option 1 would be accessible from the north (i.e. the Bristol area) and the south-east (i.e. the Bournemouth/Southampton areas), which is consistent with Figure 2 and would ensure that recoveries remained clear of RNAS Yeovilton operations. Recoveries from westerly directions could easily be coordinated with flying operations at RNAS Yeovilton and Yeovil (Leonardo) during their respective operating hours.

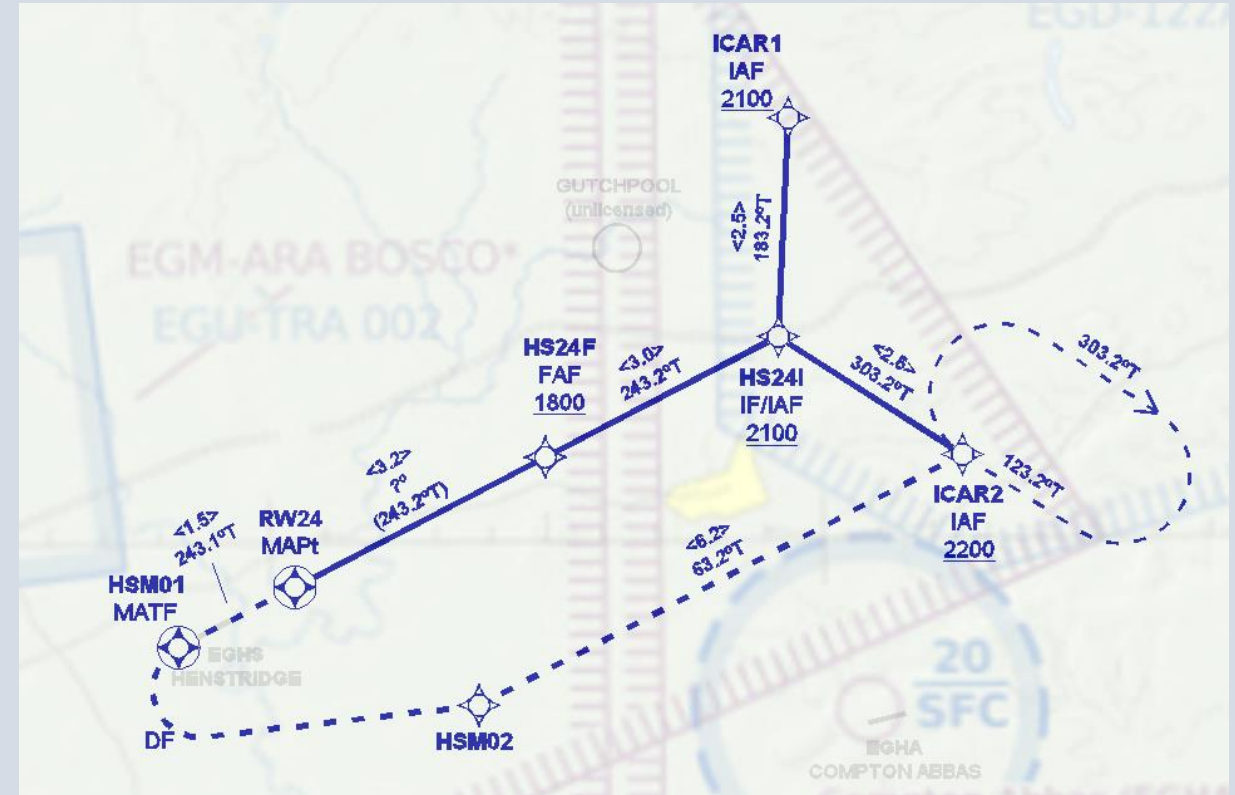


Image Sources: SkyVector & Pildo Wessex

Figure 5 - ACP-2022-033 Design Option 1 Concept - Azimuth

Design Option 1 - Departure Azimuth

In addition, the proposed approach and departure routes continue to avoid overflight of densely-populated areas.

Departures in reduced weather minima during RNAS Yeovilton operating hours would be pre-notified to “Yeovil Radar”, which would include a brief outline of the preferred transit direction and destination.



Image Sources: SkyVector & Pildo Wessex

Figure 6 - ACP-2022-033 Design Option 1 Concept - Azimuth

Design Option 1 - Approach Elevation

A preliminary elevation view of the ACP-2022-033 Design Option 1 approach concept is provided at Figure 6 and will be subject to further refinement and amendment.

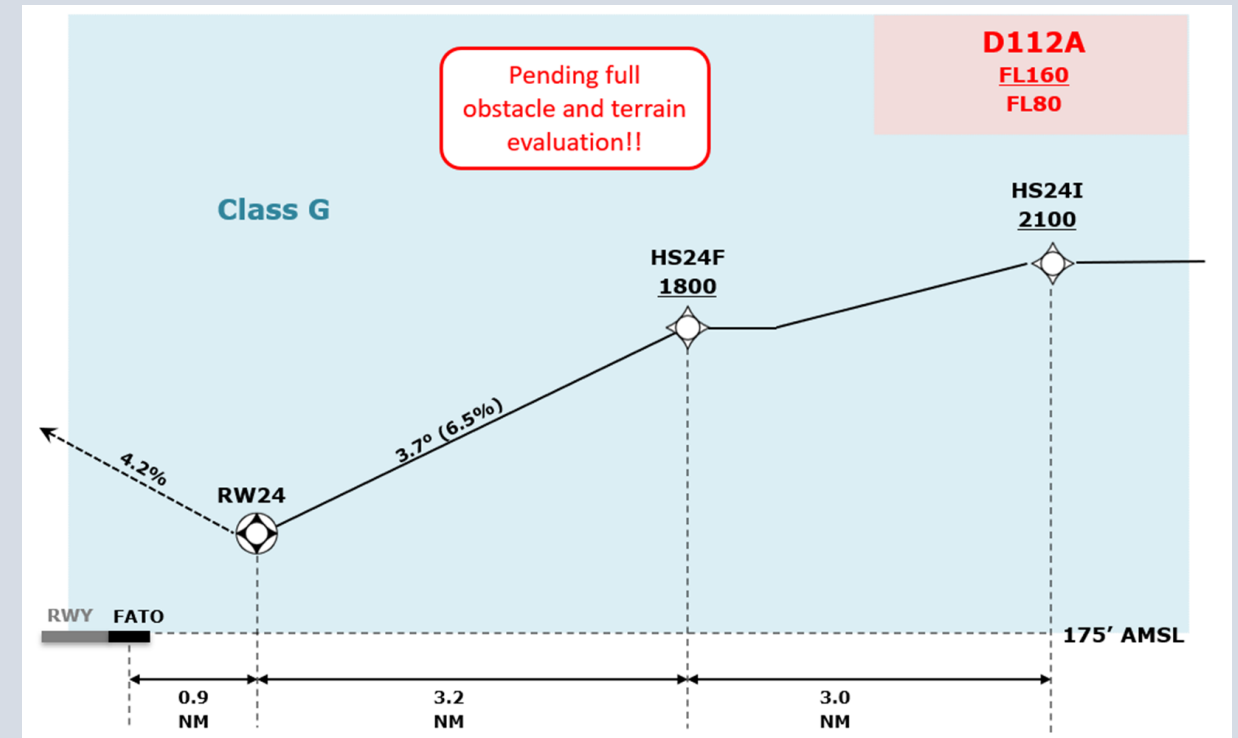


Image Source: Pildo Wessex

Figure 7 - ACP-2022-033 Design Option 1 Concept - Elevation

Design Option 1 - Departure Elevation

A preliminary elevation view of the ACP-2022-033 Design Option 1 departure concept is provided at Figure 6 and will be subject to further refinement and amendment.

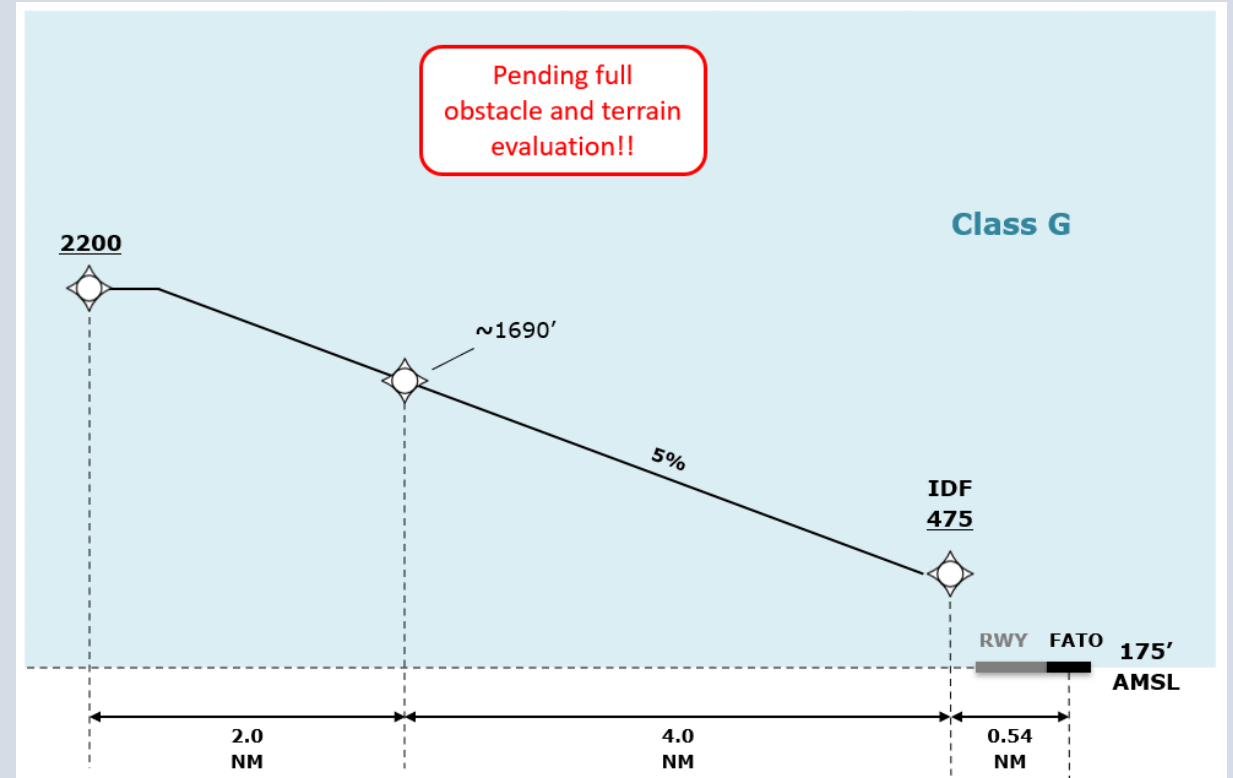


Figure 8 - ACP-2022-033 Design Option 1 Concept - Elevation Image Source: Pildo Wessex



ANTICIPATED UTILISATION



Anticipated Utilisation

One of the critical drivers is being able to recover to Henstridge (i.e. having completed the HEMS task) in inclement weather and being available for subsequent HEMS tasking.

As outlined earlier, the introduction of the proposed IFP design could deliver an additional 72 DSAA HEMS missions, *per annum*.

Restrictions on Use. Use of the proposed IFPs would be restricted to DSAA aircraft and crews only. In addition, only one DSAA HEMS aircraft operating on any one occasion further reduces risk.

DSAA's Future Aspirations. Whilst DSAA's future aspirations (i.e. 2-3 years) are for a second airframe, only one would be in operation at any one time.



QUALITATIVE STATEMENTS ON POTENTIAL IMPACTS



Qualitative Statement on Potential Impact on Safety

From ACP-2022-033's Stage 2 Submission:

“9.2.1. Safety of the Proposed Procedure Design.

Design Option 1's approach and departure profiles broadly replicate current DSAA HEMS helicopter VFR routings (Figure 4, above) and the development of the design is being undertaken by a UK CAA-approved procedure design organisation with extensive and demonstrable IFP and PinS design pedigree (Pildo Wessex Ltd). The design is being conducted in IAW PANS-OPS, and, at this stage, no safety issues or concerns have been identified or are anticipated.”

“9.2.2. CAP2304-related HAZID and Risk Analyses.

If CAP2304-related HAZID and risk analyses and assessments highlight a need for further operational agreements associated with the implementation of the proposed PinS procedures warrants, DSAA will work with the relevant parties to establish the requisite LOAs/MOUs.

Ultimately, any CAP2304-related HAZID and risk analyses and assessments would dictate the level of discussions, mitigation actions and, where necessary, agreements required between DSAA and the relevant parties.”



Qualitative Statement on Potential Environmental Impact

Updated data from Henstridge shows that they recorded 2,248 non-DSAA aircraft movements during the period 1 Apr 22-31 Mar 23. During the same period, DSAA recorded 2,336 helicopter movements.

The implementation of the proposed IFPs could deliver an additional 72 HEMS missions, per annum, which would correspond to a 6.16% increase in DSAA annual movements. In turn, this corresponds to a 3.14% increase in overall Henstridge Aerodrome movements. Therefore, introducing the proposed IFPs to support DSAA operations at Henstridge does 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, as the potential increase (i.e. 3.14%) is well below the 10% or more value quoted in CAP1616.



Qualitative Statement on Potential Economic Impact(s)

From ACP-2022-033's Stage 2 Submission:

"9.3.3. Economic Impact.

Given the limited scope of the proposal (potentially an increase of 144 Henstridge Aerodrome movements, i.e. [3.14]%) and that the proposed procedure replicates, to a great extent, the current operation, monetising and quantifying the potential impact of the proposed airspace change in line with CAP1616, Table E2, it is neither proportionate, nor possible."



Qualitative Statement on Potential Impact on Airspace Users

The introduction of the proposed IFPs to support DSAA operations at Henstridge constitutes no significant change to the extant Henstridge airfield operations.

The predominance of flying activity in the vicinity of Henstridge is either military or GA; the latter is undertaken under VFR. 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.

At this stage, the impact - positive or negative - on other airspace users is not known and will be determined by stakeholder engagement feedback/responses.



Qualitative Statement on Potential Impact on Airspace Users

From ACP-2022-033's Stage 2 Submission:

“Extant Operational Agreements. Extant arrangements, which include letters of agreement (LOAs) and/or memoranda of understanding (MOUs), with local stakeholders (e.g. RNAS Yeovilton, Yeovil (Leonardo) and Compton Abbas) are being reviewed and, where necessary, corresponding revisions reflecting the addition of proposed PinS procedures at Henstridge proffered to act as the catalyst for the appropriate discussions between DSAA and the relevant parties.

Should a potential issue arise from the proposed airspace change, it will be discussed and, where appropriate, mitigated through engagement with those parties potentially impacted.”



STAKEHOLDER ENGAGEMENT PROCESS



Stakeholder Engagement Process

An ACP-2022-033 stakeholder engagement response proforma is available on the CAA's ACP-2022-033 portal at the following [link](#). Having considered the foregoing stakeholder engagement materials, we request that you complete a corresponding response proforma from your organisation.

Once completed, please convert your organisation's response proforma to PDF format and submit it to the DSAA by email to the following address: airspace@avigation.co.uk. "Nil Return" responses are also requested.

Stakeholders seeking to engage DSAA and discuss matters pertaining to this ACP and their respective organisations' operations are requested to contact DSAA at the earliest opportunity on the following email address: airspace@avigation.co.uk.

Similarly, should any stakeholders have questions relating to either the CAP1616 Stage 3 process, the application and/or the information contained within these materials, please do not hesitate in contacting DSAA at the email address above.

Stakeholder response proformas are requested no later than Tuesday 30 January 2024.



Specialist Aviation Services



NEXT STEPS



What Happens Next...?

Your feedback and responses will be collated, reviewed and, where appropriate, inform the finalised IFP design. During the ensuing activity, DSAA will:

- Undertake an analysis of stakeholder feedback and a determination of what influence, if any, these might have on the proposed IFP design.
- Compile the corresponding Stakeholder Engagement Report for submission to CAA.
- Prepare the final application documentation.

Stage 4 - ACP Submission. DSAA anticipates submitting its final application documentation in March 2024.

Stage 5 - CAA Decision. The corresponding CAA decision (i.e. Stage 5) is anticipated in June 2024.

Stage 6 - Implement. Stage 6, including flight validation is anticipated in the summer/autumn 2024.

Target AIRAC. The target AIRAC is 10/2024, but this may be subject to change.

In anticipation of your feedback, thank you for your engagement with DSAA on this application.

Conclusion



- Introduction.
- CAP1616 Part 1c Process Requirements.
- Henstridge Location, Airspace, DSAA Tasking and Operations Context.
- ACP-2022-033 Proposed Design Option.
- Anticipated Utilisation.
- Qualitative Statements on Potential Impacts.
- Stakeholder Engagement Process.
- What Happens Next.