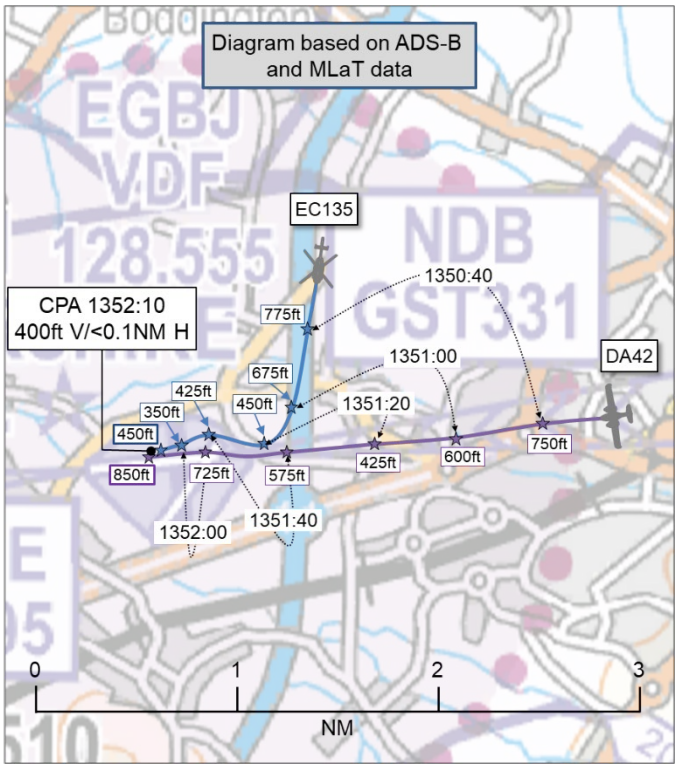
AIRPROX REPORT No 2024285

Date: 22 Nov 2024 Time: 1352Z Position: 5154N 00210W Location: Gloucestershire Airport

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	EC135	DA42
Operator	Civ Comm	Civ FW
Airspace	Gloucester ATZ	Gloucester ATZ
Class	G	G
Rules	VFR	VFR
Service	ACS	ACS
Provider	Gloster Tower	Gloster Tower
Altitude/FL	450ft	850ft
Transponder	A, C, S	A, C, S+
Reported		
Colours	Yellow	White
Lighting	Ldg, nav, anti-colls	Nav & landing
Conditions	VMC	VMC
Visibility	>10km	>10km
Altitude/FL	400ft	NR
Altimeter	QFE (1006hPa)	QNH (1009hPa)
Heading	270°	270°
Speed	60kt	82kt
ACAS/TAS	TAS	TAS
Alert	Information	Information
Separation at CPA		
Reported	100ft V/0m H	300ft V/50m H
Recorded	400ft V/<0.1NM H	



THE EC135 PILOT reports that they were conducting a simulated single engine approach and then go-around to a simulated helipad located at Heli N at Gloucestershire Airport. While on base leg they were notified by ATC of rotary-wing traffic joining them in the helicopter circuit from Point X, and they became aware of [the DA42] being cleared for a go-around after an instrument approach to the runway, although they could not identify that aircraft before they established on their final approach; they commenced their go-around at 140ft, at which point the left-hand side pilot looked over their left shoulder to try and identify [the DA42] going around. On passing approximately 300ft, ATC alerted them to the presence of the conflicting traffic above them. They both looked up and immediately sighted the white twin-engine DA42 directly above and from left-to-right in the process of going around from its approach. They immediately reduced their rate of climb and flew a tight low level circuit back to a landing at Heli N while [the DA42] continued their circuit to land. They reported the Airprox by radio to Gloucester Tower.

The pilot also noted that it was a busy ATC environment with other rotary-wing traffic joining.

The pilot assessed the risk of collision as 'Low'.

THE DA42 PILOT reports that they were conducting a CPL skill test culminating with the circuit detail at Gloucestershire Airport. From a straight in approach to RW27, 2 touch-and-go landings were performed. Following the second touch-and-go they initiated a simulated engine failure after take-off. A further circuit led to an asymmetric go-around at 300ft QNH (200ft AGL). During the climb the Aerodrome controller told the helicopter [pilot] that there was a DA42 going around above them. It was difficult to see their track over the ground with the nose-up pitch, and they asked the candidate if they could see the runway. They said they could *'just see the 09 numbers'*, so they must have drifted slightly onto the live side. The examiner looked down and saw the helicopter to the north of them at low level. At this point they judged their altitude to be approximately 700ft QNH. They could not recall if they had

been advised on either Approach or Aerodrome frequency that the helicopter circuit was active; the fixed-wing circuit pattern was very busy and they had to orbit twice on their final circuit to land.

The pilot assessed the risk of collision as 'Low'.

THE GLOSTER TOWER CONTROLLER reported in response to a statement on the R/T by [the EC135 pilot] that they intended to report an Airprox regarding the following incident. The helicopter circuit was active with [the EC135]. The fixed-wing circuit was active with multiple aircraft. [The DA42] was cleared for a low approach in the right-hand fixed-wing circuit. After the low approach, they observed [the DA42] over 'Heli Northwest' towards the east-northeast aerodrome boundary, directly above [the EC135], which had lifted into the helicopter circuit, so [the DA42] had turned right before the upwind end of RW27. Both aircraft were slowly climbing at approximately the same rate in a north-westerly direction. They advised [the EC135 pilot] that there was a DA42 above them. They acknowledged and expressed gratitude. After landing off that circuit, [the EC135 pilot] advised on the RT that they would be filing an Airprox report for this incident.

Factual Background

The weather at Gloucestershire Airport was recorded as follows:

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METAR at 1350: 25008KT 9999 FEW028 07/02 Q1010.
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The 'Heli Northwest' referred to is represented on the Gloucestershire Aerodrome Chart (Figure 1).

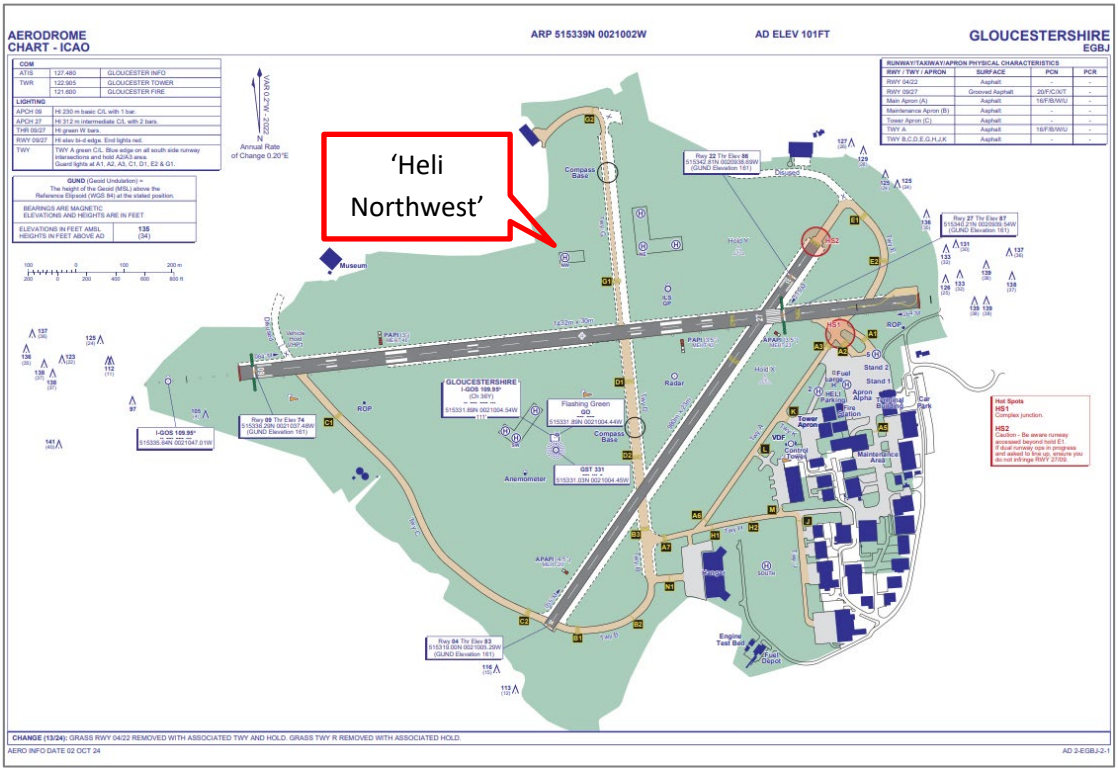

Figure 1 Gloucestershire Aerodrome Chart

Analysis and Investigation

Gloucestershire Airport

The investigation report included interviews with both pilots and the ADC ATCO, reviews of the METAR, Flight Progress Strip (FPS) and watch log entry.

The ADC controller involved in the Airprox had successfully passed an ADC Dedicated Practical Assessment with the Assessor on the 13th November. Between then and the Airprox date, they carried out 5 operational ADC shifts [in accordance with their CAA ATC requirements].

The Primary Radar was out of service (since 28/08/2024), and therefore the Aerodrome Traffic Monitor (ATM) was not available for use.

An Airport Advice Notice (AAN 24-1130) was active and distributed to all staff and home-based operators stating:

> "To all Operators:
>
> The Aerodrome Traffic Monitor (ATM) remains unserviceable meaning that our ATCO's situational awareness is significantly reduced which, in turn, increases their workload. To help manage this situation and help ensure safe operations, the following restrictions and instructions must be adhered to and will be in place until further notice:
>
> · Only one aircraft in the fixed wing and helicopter circuit at a time.
>
> · Non-home-based arrivals may be restricted.
>
> · All movements are subject to PPR, and times allocated must be adhered to.
>
> · Direct joins may not be available.
>
> · Home based operators shall book returns/arrivals as this helps reduce workload for ATCOs.
>
> · You may be asked for position reports more frequently than usual. Please ensure you pass accurate range reports or position reports.
>
> · Cross runway operations may be restricted.
>
> · Ad hoc IAPs may not be permitted or may be subject to significant delays.
>
> We will advise when the ATM is returned to service."

During the period leading up to the Airprox, several of these restrictions were not closely adhered to and the resultant volume of traffic and associated workload may have contributed to the Airprox.

The Gloster Approach and Tower radio communications were reviewed and the following noted:

[The EC135] did not lift into the helicopter circuit until 1340 so the Approach controller did not need to advise [the DA42 pilot] that the helicopter circuit was active at the time of transfer of communication to Tower.

[The DA42 pilot] contacted Gloster Tower at 1334:05. [They were] cleared into right-hand circuits RW27 at time 1335:27.

[The DA42 pilot] did not read back the right-hand circuits clearance although Tower had not used the term "cleared".

Traffic levels and workload were very high throughout this period. Stations were frequently stepped on by other stations. Some Traffic Information was passed by Tower to [the EC135] and [DA42 pilots] but they did not receive generic or specific Traffic Information about each other.

Gloster MATS 2, Section 3, Chapter 2 states:

2.12. Information to Circuit Aircraft

2.12.1. ADC should advise all arriving traffic and departures joining the circuit of the number of aircraft in and joining the fixed-wing and helicopter circuits. Additional position information may be passed as required to assist pilots.

2.13. Non-Standard Circuits

2.13.1. ADC is to ensure that sufficient information is passed to both fixed-wing and helicopter pilots, to enable them to position themselves appropriately when non-standard circuits, such as low level, EFATO, glide and crosswind approaches, are in use. It may be possible to alter the pattern of the helicopter circuit to accommodate certain types of flight. For example, when Runways 27 and 22 are in use, helicopters may be instructed to 'remain north' of both runways by flying an abbreviated circuit pattern.

After 1335 [the DA42 pilot] continued in the right-hand circuit. [They were] not given Traffic Information about the aircraft in the helicopter circuit as 2.12.1 above.

During a period of intense R/T loading between Tower and multiple aircraft, an Airport Ops vehicle called Tower and this may have used up valuable seconds and been a slight distraction to the ADC ATCO regarding their primary objective of preventing collisions between aircraft.

It was clear that, in the build-up to the closest point of the Airprox, R/T loading and workload were very high with a broadcast made approximately every 3sec. This included 2 simultaneous broadcasts which can be disconcerting and a distraction in a busy ATC environment.

The ADC ATCO eventually gave specific Traffic Information to [the EC135 pilot] about [the DA42] but, at interview, [the controller] believed this was passed as [the DA42] was passing about 50m laterally from [the EC135].

The ADC ATCO believed that [the EC135] and [DA42] were climbing at similar rates as [the DA42] overflew [the EC135] and that [the EC135] was at approximately 200ft (climbing away from a helicopter touch-and-go in the helicopter circuit) and [the DA42] was at approximately 300ft climbing away from a low approach and go-around.

It should be mentioned that, at the time, there was no requirement for helicopters in the VFR helicopter circuit to give position reports (i.e. it was "negative RT"). It had already been actioned by MATS (several weeks before) to introduce "partial RT" for helicopters in the helicopter circuit and, as of the 28th of November (AIRAC update), the AIP requires helicopter pilots to report lifting. Extracted from UK AIP:

Each time a helicopter lifts, including lifting each time into circuit, they shall report lifting e.g. *"Helicopter-AA lifting"*.

It is also now a requirement for helicopters at Gloucester to use the prefix "helicopter" in all transmissions to aid the spatial awareness of all airspace users. UK AIP extract:

Helicopters communicating with Gloster Air Traffic Control should prefix each transmission of their call sign with the word *"Helicopter"* e.g. *"Helicopter G-AB (or Helicopter AB) downwind"*, *"Gloster Tower, Helicopter 123B, on the tower apron request start-up"*, *"Gloster Approach, Helicopter GABCD inbound".*

An observation by the investigator would be that these new elements introduced just after this incident may have helped reduce the probability of it happening.

The ADC ATCO could not remember if they were aware if [the DA42] was conducting the low approach and go-around in an asymmetric configuration. They thought [the Approach controller] would have given Traffic Information on the helicopter circuit being active, however, it was not active when APP transferred [the DA42] to Tower so there may been an element of expectation bias here.

At interview, the Instructor of [the EC135] explained that they were carrying out a competence check on another helicopter pilot (existing instructor). They thought it was busy but that they were the only helicopter in the helicopter circuit at the time. They said that whilst they were on base leg they were passed Traffic Information on another helicopter joining. They heard [the DA42 pilot] cleared for a go-around. As they were on final they said they looked over their left shoulder to look for [the DA42] but could not see it. They thought that [the DA42] had drifted right from an expected go-around position. They also thought that [the DA42] turned right before the end of the runway. They stated that without the Traffic Information from Tower (1352:22) it *"could have been close"*. They thought there was a medium risk of collision. It was their opinion that ATC *"did a great job"*.

Whilst [secondary aircraft tracking software] cannot be relied upon as a reliable source of evidence, the investigator [noted] at the time of the Airprox [the DA42 appeared] to have drifted well to the north of the centreline of RW27.

The Examiner on [the DA42] reported at interview that a CPL skills test was being undertaken. They noted that it was busy at Gloucestershire circuit and there seemed to be lots of non-standard R/T. They explained that they carried out the low approach and go-around that led to the Airprox in an asymmetric configuration. They admitted this led to them drifting right. They said they went around at 300ft QNH. They said the visibility was good and the drift to the right was gentle. They said they had not been told about the helicopter circuit. They said they had looked down and seen [the EC135] and that they did not consider it to be an Airprox. They thought the risk of collision was low as *"we were going up"*. They think the starboard engine was cut and that caused drift to the right and also mentioned that the surface wind was also from the left. They said at interview "*hands up we did drift".*

It is clear that [DA42] did drift to the right of RW27 as they carried out a low approach and go-around and this brought them in to conflict with the area normally utilised by helicopters for VFR circuits when RW27 is in use. Having said that, they had not received Traffic Information (generic or specific) on the helicopter circuit being active or the activity of [the EC135]. [The EC135 pilot] had received generic Traffic Information on the right-hand fixed wing circuit being active on RW27 but [the EC135 pilot] could have reasonably expected for a fixed-wing aircraft not to drift right to such a degree that a confliction point would have been created.

The local investigation finds the root causes to be:

1. [The DA42] drifted to the right during a low approach and go-around to RW27. It was reasonable to expect such a flight to maintain runway track during this manoeuvre and then to turn right back into the circuit subject to any noise abatement restrictions. Considering the amount of R/T congestion and the traffic levels at the aerodrome it would have been reasonable to place even more importance on [the DA42] adhering to a centreline approach and climbout.

2. Gloster Tower did not give generic or specific Traffic Information to [the DA42 pilot] on the helicopter circuit being active or specifically about [the EC135].

3. Volume of Traffic. Traffic levels and workload were very high throughout this period for the ADC. This made the routine passing of Traffic Information more challenging.

4. The AAN regarding traffic restrictions due to the ATM being out of service was not closely adhered to. Too many aircraft were given rejoin permission within a relatively short timeframe.

5. There was no local requirement for [the DA42 pilot] to advise Tower that it would be an asymmetric configuration. [Had there been a requirement to announce asymmetric approaches], this may have prompted Tower to pass Traffic Information due the increased risk of drift.

6. The ADC ATCO had only recently returned to the Unit and may have been a little out of practice with such intense traffic loadings.

As a result of the investigation the following actions are being considered; fitting DF equipment for the ADC, fitting a FID. The UK AIP was updated regarding the helicopter partial R/T and traffic capacity limits are being actioned and will be recorded.

UKAB Secretariat

An analysis of the NATS radar replay was undertaken and, although the EC135 only appeared briefly, both aircraft were positively identified using Mode S data, mostly after CPA.

Further analysis was undertaken using ADS-B and aircraft tracking software from which both aircraft were positively identified, the DA42 from ADS-B sources and the EC135 using multilateration (MLAT). The tracks for both aircraft were visible throughout and the CPA was assessed to have been at 1352:10 as the DA42 passed the EC135 during its go-around, with 400ft vertical and less than 0.1NM lateral separation (Figure 2). The DA42 tracks were further supported by the GPS navigation data provided by the pilot of the DA42.

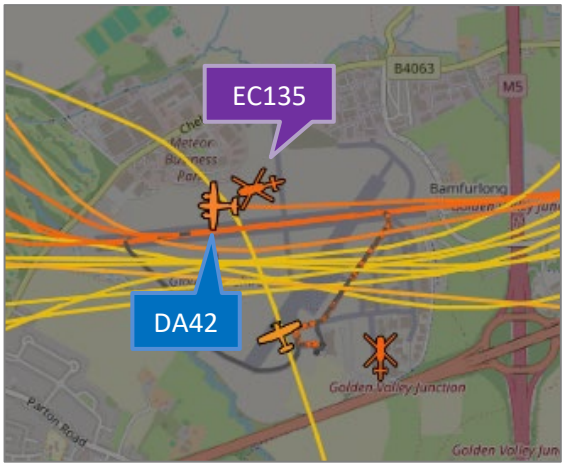

Figure 2 - Time 1352:10 400ft vertical and less than 0.1NM lateral separation.

The EC135 and DA42 pilots shared an equal responsibility for collision avoidance and not to operate in such proximity to other aircraft as to create a collision hazard.[1] An aircraft operated on or in the vicinity of an aerodrome shall conform with or avoid the pattern of traffic formed by other aircraft in operation.[2]

Summary

An Airprox was reported when an EC135 and a DA42 flew into proximity at Gloucestershire Airport at 1352Z on Friday 22nd November 2024. Both the EC135 and DA42 pilots were operating under VFR in VMC and in receipt of an ACS from Gloster Tower.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of reports from both pilots, radar photographs/video recordings, ADS-B sourced track information, GPS track data for the DA42's flight, a report from the air traffic controller involved and a report from the appropriate operating authority. Relevant contributory factors mentioned during the Board's discussions are highlighted within the text in bold, with the numbers referring to the Contributory Factors table displayed in Part C.

The Board first considered the actions of the EC135 pilot and noted that the pilot had been conducting a single engine approach and go-around. Members noted that the EC135 had appeared to have drifted left during their approach to land and wondered if there had been sufficient clearance between the rotary and fixed-wing landing areas, but this was considered as quite usual by those experienced in

[1] (UK) SERA.3205 Proximity.
[2] (UK) SERA.3225 Operation on and in the Vicinity of an Aerodrome.

operating in such areas. Members also noted that the pilot had not been required to make any circuit calls, other than the initial 'lifting' call to initiate a departure, but that they had monitored the R/T and therefore agreed that the pilot had had generic situational awareness of the presence and position of the DA42 (**CF8**) on the approach. On further considering the use of R/T, helicopter pilot members felt that, despite there being no requirement for them to have made circuit calls, the instructor had missed a training opportunity to demonstrate the advantages of making specific general awareness calls, such as 'going-around'. However, the Board was pleased to note that the EC135's electronic conspicuity equipment had also provided the pilot with information on the DA42 (**CF9**) and that the left-hand pilot had attempted to sight the DA42 by looking over their shoulder but, as the DA42 had been situated behind the EC135, their view had been obscured (**CF11**). Members agreed that the EC135 pilot had not seen the DA42 until it had passed above them from left-to-right, at or around the moment of CPA, and that this had been effectively a non-sighting (**CF10**).

The Board next considered the actions of the DA42 pilot and noted that the pilot had been conducting a flight examination whilst on an asymmetric approach where the aircraft had drifted to the right during the go-around. Because they had not received Traffic Information on the EC135 from the Gloster controller, members agreed that the DA42 pilot had had no situational awareness of the EC135's presence (**CF8**). Members wondered why the DA42 pilot had not heard earlier transmissions from the EC135 pilot and noted that the DA42 had likely been on a different frequency when the EC135 pilot had lifted. Nonetheless, the Board noted that the DA42 pilot had actively looked for the EC135 on hearing a transmission to the EC135 pilot stating that the DA42 had gone-around above them. Members agreed that at the point of CPA the DA42 pilot had been unsighted on the EC135 (**CF10**) until after passing it and looking down to their right. The Board also noted that the DA42 had received information on their TAS regarding the EC135 (**CF9**), but considered that, in such a busy circuit, this had not enhanced the DA42 pilot's situational awareness in any way.

The Board discussed the topic of training asymmetric approaches at length, and agreed that the DA42's procedure, although drifting to the right during the go-around, had been within acceptable parameters. The Board noted that some training organisations, airfields and military bases required the aircraft commanders to provide calls such as 'asymmetric approach for go-around' etc with specific terminology used in some military stations, while some members noted that this was not necessarily the standard everywhere and wondered how it would be addressed when a simulated engine failure was unannounced to the student. Instructor members explained that the controller can be briefed prior to the flight to set their expectations, while the R/T call would happen after the asymmetric scenario had been achieved, while some members felt that the controller should already have certain expectations when working within a training environment.

Moving on from the conversation on asymmetric approaches and ATC expectations, the Board turned their attention to the actions of the Gloster controllers because members felt that the Gloucestershire Airport procedures had not given consideration to certain aircraft operations (**CF1**), for example the training requirement to practice asymmetric approaches and go-arounds with potential drift and the lack of R/T in the helicopter circuit. Both of these topics were of concern to members who felt that resolving this combination of factors may prevent a repetition of similar issues and fulfil the necessity for all pilots to be aware of the surrounding traffic. Members were heartened to learn that Gloucestershire Airport had reviewed some of its procedures and has since resumed calls in the helicopter circuit. The Board noted that the controllers had been working with an unserviceable ATM (**CF4**), had had a high workload with multiple transmissions, and more than one aircraft in the circuit. Members agreed, therefore, that the Gloucestershire Airport AAN24-1130 procedures had not been complied with (**CF2**) and that the ADC tasking had not been appropriately managed (**CF3**). Members were concerned that the overloaded frequency had reduced the effectiveness of communication (**CF7**), particularly as the controller had missed providing Traffic Information on the EC135 to the DA42 pilot (**CF5**) and some transmissions had been 'stepped on'. Overall, members were disappointed that the ADC's detection of the DA42 in the go-around whilst passing over the EC135 had been too late (**CF6**) for them to have been able to assist in resolving the conflict.

In concluding their discussion the Board agreed that, although safety was degraded, the EC135 pilot had been able to reduce their rate of climb and monitor the situation sufficiently to prevent the aircraft coming into close proximity. As such, the Board assigned a Risk Category C to this event.

PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK

Contributory Factors:

	2024285			
CF	**Factor**	**Description**	**ECCAIRS Amplification**	**UKAB Amplification**
	Ground Elements			
	• Regulations, Processes, Procedures and Compliance			
1	Organisational	• Aeronautical Information Services	An event involving the provision of Aeronautical Information	The Ground entity's regulations or procedures were inadequate
2	Human Factors	• ATM Regulatory Deviation	An event involving a deviation from an Air Traffic Management Regulation.	Regulations and/or procedures not fully complied with
	• Manning and Equipment			
3	Human Factors	• ATM Leadership and Supervision	An event related to the leadership and supervision of ATM activities.	
4	Technical	• Radar Coverage	Radar Coverage	Non-functional or unavailable
	• Situational Awareness and Action			
5	Human Factors	• ANS Traffic Information Provision	Provision of ANS traffic information	TI not provided, inaccurate, inadequate, or late
6	Human Factors	• Conflict Detection - Detected Late	An event involving the late detection of a conflict between aircraft	
7	Contextual	• Frequency Congestion	An event involving frequency congestion that reduces the effectiveness of communications	
	Flight Elements			
	• Situational Awareness of the Conflicting Aircraft and Action			
8	Contextual	• Situational Awareness and Sensory Events	Events involving a flight crew's awareness and perception of situations	Pilot had no, late, inaccurate or only generic, Situational Awareness
	• Electronic Warning System Operation and Compliance			
9	Contextual	• Other warning system operation	An event involving a genuine warning from an airborne system other than TCAS.	
	• See and Avoid			
10	Human Factors	• Monitoring of Other Aircraft	Events involving flight crew not fully monitoring another aircraft	Non-sighting or effectively a non-sighting by one or both pilots
11	Contextual	• Visual Impairment	Events involving impairment due to an inability to see properly	One or both aircraft were obscured from the other

Degree of Risk: C.

Safety Barrier Assessment[3]

In assessing the effectiveness of the safety barriers associated with this incident, the Board concluded that the key factors had been that:

Ground Elements:

Regulations, Processes, Procedures and Compliance were assessed as **ineffective** because Gloucestershire Airport Advice Notice, AAN24–1130, was not fully complied with. In addition, the Gloucestershire Airport procedures did not give consideration to certain aircraft operations such as multi-engine asymmetric training, and there was no requirement for the EC135 to make calls in the helicopter circuit.

[3] The UK Airprox Board scheme for assessing the Availability, Functionality and Effectiveness of safety barriers can be found on the UKAB Website.

Manning and Equipment were assessed as **ineffective** because the ATM was unserviceable and associated task reduction for the circumstances were not appropriately managed.

Situational Awareness of the Confliction and Action were assessed as **ineffective** because no Traffic Information was passed by the Gloster ADC to the DA42 pilot on the EC135, and the Tower controller passed late Traffic Information to the EC135 pilot on the DA42's go-around. The effectiveness of communications was reduced by the overloaded frequency.

Flight Elements:

Situational Awareness of the Conflicting Aircraft and Action were assessed as **ineffective** because the DA42 pilot had no situational awareness of the presence of the EC135, and the EC135 pilot had only generic situational awareness of the presence and position of the DA42.

See and Avoid were assessed as **ineffective** because the EC135 pilot had not seen the DA42 until CPA and the DA42 pilot had not sighted the EC135 until after CPA.