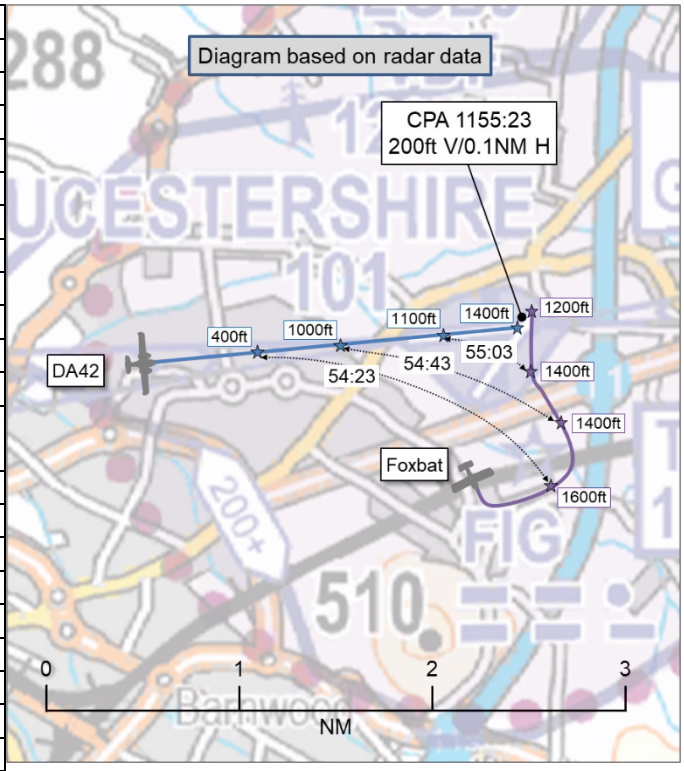
AIRPROX REPORT No 2024251

Date: 03 Oct 2024 Time: 1155Z Position: 5154N 00210W Location: Gloucestershire Airport

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	DA42	Foxbat
Operator	Civ FW	Civ FW
Airspace	Gloucestershire ATZ	Gloucestershire ATZ
Class	G	G
Rules	IFR	VFR
Service	ACS	ACS
Provider	Gloster Tower	Gloster Tower
Altitude/FL	1400ft	1200ft
Transponder	A, C, S+	A, C
Reported		
Colours	White	Red/Silver
Lighting	Strobes, nav and landing light.	Strobes & landing
Conditions	VMC	VMC
Visibility	>10km	>10km
Altitude/FL	800ft	NK
Altimeter	QNH (1022hPa)	NK
Heading	084°	NK
Speed	82kt	NK
ACAS/TAS	TAS	SkyEcho
Alert	TA	None
Separation at CPA		
Reported	0ft V/300m H	Not seen
Recorded	200ft V/0.1NM H	



THE DA42 PILOT reports that, while on a simulated asymmetric approach with an MEIR student under the hood, they were cleared for a low approach and go-around on RW09 at Gloucestershire. A Foxbat aircraft [callsign] was cleared to join overhead and descend downwind, but instructed to report before turning crosswind due to traffic on final (them). They were visual with the aircraft as it joined overhead, the [pilot of the] aircraft did not comply with the ATC join restriction and proceeded to fly onto the crosswind leg in front of them as they commenced the go-around. This resulted in them having to take control of the aircraft to commence a two engine go-around to climb and turn clear of the aircraft. Due to the [clear] conditions they believed that the chance of a collision was very low, as they were aware of the aircraft for the duration of its join and they had maintained visual contact. However, they did have to alter their flightpath to avoid a collision.

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

THE FOXBAT PILOT reports that they were unaware of an Airprox so they were of limited help. They could only assume that the [pilot who] submitted the Airprox was on long final as they turned final from a base leg. They had contacted the Tower to say that they could not see any other approaching aircraft and could they give them any further information. No further information was given and, as they could not see anyone on final, they continued to turn final and land.

THE GLOSTER TOWER CONTROLLER reports that [the Foxbat], a visiting aircraft, was given a standard overhead join for RW09 left-hand by Approach at 1144 from the northwest. The [pilot] reported with Tower at 3NM and was told to report descending deadside. Once the [pilot] reported deadside they were instructed to report before turning crosswind.

The DA42 on an RNAV approach for RW09 went around at 1155. A moment later [the Foxbat] reported on the crosswind leg and was advised by the Tower controller the instruction was to report before

turning. They believed the aircraft passed in front of [the DA42], they were unable to see due to the VCR ceiling.

The [DA42] pilot rang later on to report they were filing an Airprox, they claimed they had the aircraft visual and there was no risk of collision. The workload in the Tower at the time was high with 1-2 in the circuit, 2 to the overhead, traffic on the instrument approach plus multiple at the hold and taxying out.

Factual Background

The weather at Gloucestershire Airport was recorded as follows:

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METAR EGBJ 031150Z 06005KT 030V120 9999 FEW032 15/08 Q1022
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Analysis and Investigation

Gloucestershire Airport

The report includes information from the following sources; an interview with the instructor [from the DA42], R/T recordings, and a discussion with the ADC ATCO.

Findings and observations were: For the period leading up to the Airprox, both the ADC and the Approach positions were very busy. From approximately 1143 to 1155 the ADC communicated with 13 different aircraft (in approximately 12min) comprising ground movements, arrivals and departures (plus vehicles). The Approach controller spoke to a similar number of inbound, outbound and transiting aircraft. Both the ADC and Approach ATCOs were dual valid i.e. hold unit endorsements in both Approach and ADC.

The Gloster MATS 2 and the “Gloucestershire Airport Guide to VFR Flying To & From The Airport” (as published on the Airport website) both detail the Standard Overhead Join as the default join, and RW09 left-hand was in use.

[The Foxbat] was joining VFR from the north and was given a Standard Overhead Join at 2000ft QFE and [the DA42] was making an IFR RNP approach for RW09.

The Approach controller did not give specific Traffic Information to the [Foxbat pilot] on [the DA42].

The ADC controller did not give specific Traffic Information to [the Foxbat pilot] on [the DA42]. However, the ADC controller did give specific Traffic Information to [the DA42 pilot] on the Foxbat and [the DA42 pilot] reported visual at 1153:35.

[The Foxbat pilot] subsequently reported downwind and had to ask for Tower broadcasts to be repeated, they could not identify the traffic ahead of them and had to ask for additional Traffic Information and left their PTT R/T broadcast open for approximately 5sec after reporting final.

[The Foxbat] landed at 12:00.

The R/T standard of [the Foxbat pilot] included a number of ‘ums and errs’ and, on occasion, needed several broadcasts to be repeated. They [did not] contact the ADC controller in a timely manner when transferred from Approach and made their first broadcast to Tower, already descending on the deadside.

This last point meant that the Tower was afforded little opportunity to pass Traffic Information to the [Foxbat pilot] on the [DA42].

The ADC controller instructed [the Foxbat pilot] to report before turning crosswind but the [Foxbat pilot did not] make that report and instead reported crosswind. The ADC controller immediately updated Traffic Information to [the DA42 pilot] on the Foxbat being crosswind although a reply was

not received (possibly was a stepped on transmission at 1155:03). However [the DA42 pilot] had already been passed Traffic Information on [the Foxbat] and had reported visual.

The Instructor of [the DA42] was interviewed about the incident. The Instructor said that both ADC and Approach seemed busy. They believed there was one RNP [traffic] ahead and one behind. Their student was wearing "foggles" to represent IMC, however, the instructor was keeping a lookout. The instructor said they were visual with [the Foxbat] when [the DA42] was at about 2NM final for RW09. The instructor had heard the ADC controller advise [the Foxbat pilot] to report before turning crosswind but they were vigilant and "kept an eye on them". [The DA42] was asymmetric in the go-around and the instructor took control when they were aware that [the Foxbat] had turned crosswind, and increased their rate of climb and turned slightly to the left so they could see [the Foxbat] from the right-hand seat. The instructor said [the Foxbat] crossed right-to-left at about 50kts and they said that [the Foxbat] was "very close" (approximately 100ft vertically and 300m horizontally) but that the risk of collision was low as they were visual.

An observation of the Investigator (Gloster MATS) would be that [the DA42] instructor did well to consider it necessary "to keep an eye" on the Foxbat.

Section 3, Chapter 2, 2.2.2 of the Gloster MATS 2 states:

> Due to the high volume of IFR and VFR traffic that requires integration into the circuit, In addition to passing routine Traffic Information, controllers should employ defensive controlling techniques to minimise the likelihood of a confliction. Particular attention must be paid to instrument traffic executing a missed approach and aircraft carrying out a standard overhead join. Depending on the runway configuration, examples of these techniques can include, but are not limited to, "report before turning crosswind/downwind/base", "report before descending on the dead side", "report before turning towards the live side", "orbit", "extend downwind" etc. Note: All aircraft have varying rates of climb and performance depending on their training requirements and type.

Clearly, the ADC controller did employ one of these defensive controlling techniques ("report before turning crosswind") but the pilot [did not] adhere to the request. It is worth noting that when the ADC ATCO instructed the Foxbat pilot to report before turning crosswind, that pilot merely responded "roger" and did not read back the instruction.

Following another Airprox on the 4th June 2024 at Gloster, MATS issued a Safety Notice.

(ATC_SN_2024_02 - Standard Overhead Joins vs. Instrument Approaches).The final paragraph of the Safety Notice states:

> In addition to the above defensive controlling techniques and to emphasize the MATS entry (5.1) above, it is highly recommended that only direct joining clearances are given whilst a risk of confliction would exist between an aircraft on an IAP and an aircraft carrying out a Standard Overhead Join.

In this instance this advice was not followed, however, the number of aircraft requesting rejoin may have made the issuing of only direct joins very challenging for Approach and ADC ATCOs. It must also be noted that the primary radar that feeds the Aerodrome Traffic Monitor was unserviceable and had been since the end of August. Additional traffic management measures were in place which were distributed to home-based operators via an Airport Advice Notice (AAN24 - 1130) which stated:

To all Operators:

> The Aerodrome Traffic Monitor (ATM) remains unserviceable meaning that our ATCOs' 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.

Despite this AAN there are times at Gloucestershire Airport when traffic levels exceed these restricted levels for various reasons e.g. aircraft deviating from PPR times, weather delays, traffic delays elsewhere, free-calling traffic etc.

The pilot of [the Foxbat] had not been contacted but reference to [aircraft tracking software] may suggest that the pattern that was flown by [the Foxbat pilot] for the Standard Overhead Join was not what would be expected as per the "Gloucestershire Airport Guide to VFR Flying To & From The Airport". The third party data cannot be verified but, if it is representative of the route that [the Foxbat pilot] flew, then they did not cross RW09 final approach track just west of the runway as would have been expected, did not descend parallel to the runway on the deadside and descended to below 1000ft far too early. This evidence cannot be corroborated, but if even partly true would suggest that a "non-standard" pattern was flown.

[In the opinion of the investigator] the overall R/T standard and airmanship of [the Foxbat pilot] would suggest that it played a part in causing the Airprox and increased the workload of already busy controllers.

In summary the investigation found that the root causes of the Airprox were:

1. Failure of the pilot of [the Foxbat] to report before turning crosswind as requested.
2. [The Foxbat pilot] making initial contact on Tower frequency whilst already in the descent on the deadside.
3. Volume of traffic and associated workload.
4. ATM unserviceable making situational awareness harder for ATCOs
5. Failure of ATC to follow advice given in local Safety Notice.

UKAB Secretariat

An analysis of the NATS radar replay was undertaken and both aircraft were positively identified. CPA was assessed to have occurred at 1155:23 with 200ft vertical and 0.1NM lateral separation (Figure 1). The Foxbat's track was verified by aircraft navigation equipment GPS data supplied by the pilot.

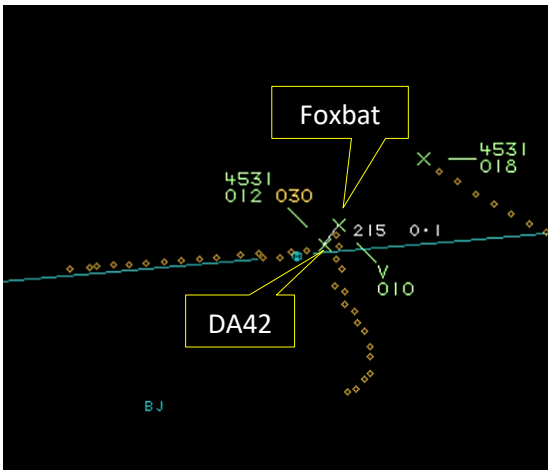


Figure 1. Time 1155:23 CPA 0.1NM and 200ft separation.

The DA42 and Foxbat 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 a DA42 and a Foxbat flew into proximity at Gloucestershire Airport at 1155Z on Thursday 3rd October 2024. The DA42 pilot was operating under IFR in VMC in receipt of an ACS from Gloster Tower and the Foxbat pilot was operating under VFR in VMC, also 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, GPS track data, a report from the air traffic controller involved and reports 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 DA42 pilot and noted that they had been passed timely Traffic Information on the Foxbat by the Gloster controller and agreed, therefore, that they had had sufficient situational awareness of the presence of the Foxbat, supplemented by the information received from their TAS (**CF10**). The Board further noted that the DA42 pilot had sighted the aircraft joining overhead and had continued to monitor its progress. However, it had become apparent to the DA42 pilot that the Foxbat pilot had not been proceeding as instructed and, when the Foxbat pilot had turned onto the crosswind leg the DA42 pilot had, justifiably, become concerned by its proximity (**CF13**).

The Board then turned their attention to the actions of the Foxbat pilot. In the absence of any specific Traffic Information to the Foxbat pilot on the DA42, members agreed that the pilot had only had generic situational awareness of the presence of the DA42 (**CF8**), based on general R/T and Traffic Information passed to the DA42 pilot on the Foxbat. Members discussed the Foxbat pilot's understanding of the instructions passed by the controller, noting that the pilot had been requested to call before turning crosswind and had acknowledged the call with *'Roger'.* The Board agreed that, although the pilot had acknowledged the ATC instructions, they had not complied with them (**CF7**). The Board then discussed whether the R/T could have been improved with either a full read back of the instructions or the use of the term *'Wilco'* instead of *'Roger'*. Some members wondered if the pilot had felt pressured to keep the call short, due to the busy R/T, while controller members agreed that they would normally accept *'Roger'* as an acknowledgement of understanding the instruction, particularly within the circuit environment. The requirements of CAP 413[3] were referred to during the discussion, and members expressed concern that there is no requirement for pilots to receive specific R/T refresher training after the CAP413 is updated or R/T procedures changed. The Board agreed that while pilots are responsible for keeping themselves up to date with current procedures, an occasional review of CAP413 and R/T Safety Sense[4] publications to refresh their R/T knowledge could increase their confidence and radio skills. The Board further agreed that the Foxbat pilot had not executed the crosswind join as directed (**CF5**), by not following the request from ATC to call them before doing so, and that this had led to the Foxbat pilot not conforming with or avoiding the pattern of traffic already formed in the circuit (**CF6**), by flying across the path of the DA42 during its go-around. Members wondered how this could have come to pass, and surmised that the Foxbat pilot had clearly not assimilated the information available from the R/T regarding the presence and flight profile of the DA42 (**CF9**). Turning to the subject and use of electronic conspicuity equipment, members noted that Foxbat's electronic conspicuity equipment would have been expected to have detected the presence of the DA42 and considered it unfortunate that it had not

[1] (UK) SERA.3205 Proximity.
[2] (UK) SERA.3225 Operation on and in the Vicinity of an Aerodrome.
[3] CAP 413: Radiotelephony Manual | UK Civil Aviation Authority
[4] safetysense22-radiotelephony.pdf

done so (**CF11**). Finally, the Board agreed that the Foxbat pilot had not sighted the DA42 in the go-around and that this has also been contributory to the Airprox (**CF12**).

The Board next moved their attention to the actions of the Gloucestershire Airport's Approach (APP) and Tower (ADC) controllers, noting in particular that the controllers had been working without the use of an ATM which had been unserviceable for some time (**CF1**). Although members were pleased to note that procedures had been put into place to account for working without the ATM, some of the controller members questioned why they had directed the Foxbat to join overhead when there had been instrument approach traffic due to initiate an approach and go-around. The Board discussed potential alternative options, such as asking the Foxbat pilot to have remained deadside or outside the ATZ until after the DA42 had completed its approach. The Board recognised that the controllers had been managing a high workload but members were, nonetheless, disappointed that neither the Approach controller nor the ADC had provided the Foxbat pilot with specific Traffic Information on the DA42 (**CF2**). The Board noted that the controller's expectation had been for the Foxbat pilot to have called before turning crosswind, as directed, and that this expectation had not been met (**CF3**), therefore, the Board agreed that the controller had had inaccurate situational awareness of the Foxbat's position once it had turned crosswind without the pilot announcing as such (**CF4**).

Concluding their discussion, the Board noted that all participants had been operating in a busy environment which had needed to be carefully managed. Members agreed that the DA42 pilot had been concerned by the proximity of the Foxbat but had been adequately informed of the Foxbat's position from Traffic Information, general R/T and TAS. The Board commended the DA42 pilot for monitoring the Foxbat's join and for taking timely and effective action to prevent the aircraft from coming into close proximity. As such, members were satisfied that there had not been a risk of collision and assigned a Risk Category C to this event.

PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK

Contributory Factors:

	2024251			
CF	**Factor**	**Description**	**ECCAIRS Amplification**	**UKAB Amplification**
	Ground Elements			
	• Manning and Equipment			
1	Technical	• Radar Coverage	Radar Coverage	Non-functional or unavailable
	• Situational Awareness and Action			
2	Human Factors	• ANS Traffic Information Provision	Provision of ANS traffic information	TI not provided, inaccurate, inadequate, or late
3	Human Factors	• Expectation/ Assumption	Events involving an individual or a crew/ team acting on the basis of expectation or assumptions of a situation that is different from the reality	
4	Contextual	• Traffic Management Information Action	An event involving traffic management information actions	The ground element had only generic, late, no or inaccurate Situational Awareness
	Flight Elements			
	• Tactical Planning and Execution			
5	Human Factors	• Action Performed Incorrectly	Events involving flight crew performing the selected action incorrectly	Incorrect or ineffective execution
6	Human Factors	• Monitoring of Environment	Events involving flight crew not to appropriately monitoring the environment	Did not avoid/conform with the pattern of traffic already formed
	• Situational Awareness of the Conflicting Aircraft and Action			
7	Human Factors	• Flight crew response to communications	An event related to the flight crew taking the incorrect action following communication	
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

9	Human Factors	• Understanding/ Comprehension	Events involving flight crew that did not understand or comprehend a situation or instruction	Pilot did not assimilate conflict information
	• Electronic Warning System Operation and Compliance			
10	Contextual	• Other warning system operation	An event involving a genuine warning from an airborne system other than TCAS.	
11	Human Factors	• Response to Warning System	An event involving the incorrect response of flight crew following the operation of an aircraft warning system	CWS misinterpreted, not optimally actioned or CWS alert expected but none reported
	• See and Avoid			
12	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
13	Human Factors	• Perception of Visual Information	Events involving flight crew incorrectly perceiving a situation visually and then taking the wrong course of action or path of movement	Pilot was concerned by the proximity of the other aircraft

Degree of Risk: C.

Safety Barrier Assessment[5]

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

Ground Elements:

Manning and Equipment were assessed as **ineffective** because the Aerodrome Traffic Monitor (ATM) system was not functioning.

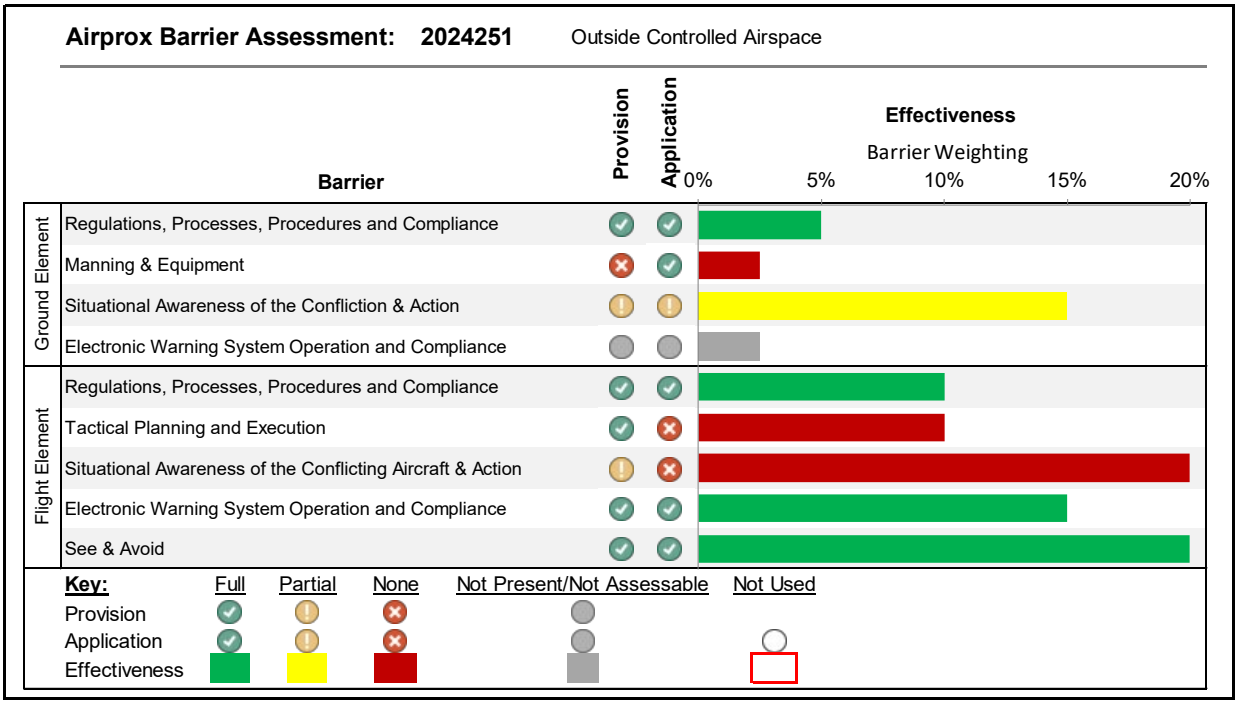
Situational Awareness of the Confliction and Action were assessed as **partially effective** because neither the Approach controller nor the ADC passed specific Traffic Information to the Foxbat pilot on the DA42. Furthermore, the ADC had inaccurate situational awareness on the Foxbat's position when the Foxbat pilot omitted to make a call prior to turning crosswind, as instructed.

Flight Elements:

Tactical Planning and Execution was assessed as **ineffective** because the Foxbat pilot had not followed ATC instructions to call before turning crosswind and had subsequently not avoided the pattern of traffic already formed with the DA42 in its go-around phase.

Situational Awareness of the Conflicting Aircraft and Action were assessed as **ineffective** because, the Foxbat pilot had only had generic situational awareness of the DA42 from R/T calls and Traffic Information given to the DA42 pilot on the Foxbat, but had not assimilated the conflict information from the R/T.

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


Airprox Barrier Assessment: 2024251
Outside Controlled Airspace
Barrier
Provision
Application
Effectiveness
Barrier Weighting
0%
5%
10%
15%
20%
Ground Element
Regulations, Processes, Procedures and Compliance
Manning & Equipment
Situational Awareness of the Confliction & Action
Electronic Warning System Operation and Compliance
Flight Element
Regulations, Processes, Procedures and Compliance
Tactical Planning and Execution
Situational Awareness of the Conflicting Aircraft & Action
Electronic Warning System Operation and Compliance
See & Avoid
Key:
Full
Partial
None
Not Present/Not Assessable
Not Used
Provision
Application
Effectiveness