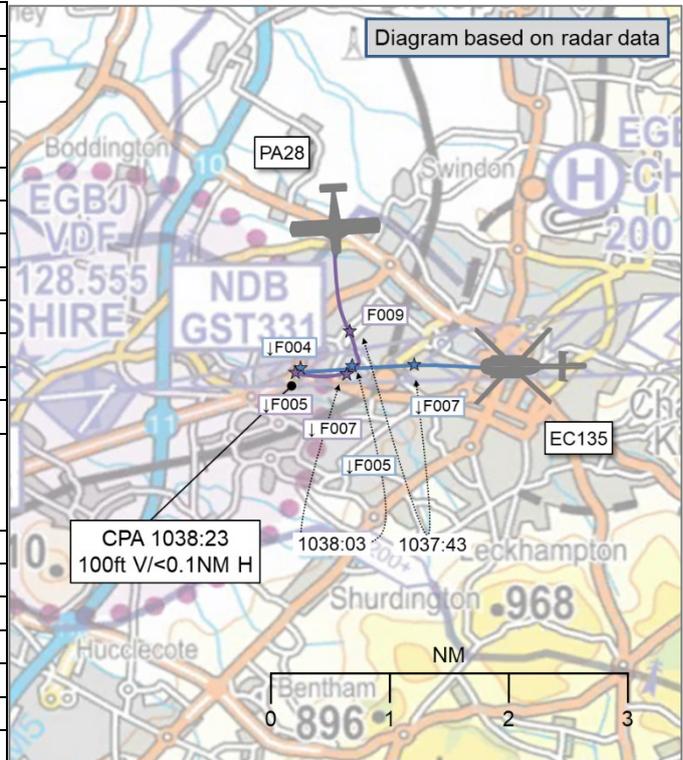


AIRPROX REPORT No 2022185

Date: 05 Aug 2022 Time: 1038Z Position: 5153N 00207W Location: Gloucestershire Airport

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	EC135	PA28
Operator	Civ Helo	Civ FW
Airspace	Gloucestershire ATZ	Gloucestershire ATZ
Class	G	G
Rules	IFR	VFR
Service	ACS	ACS
Provider	Gloucestershire	Gloucestershire
Altitude/FL	FL004	FL005
Transponder	A, C, S	A, C, S
Reported		
Colours	Silver	Grey, White
Lighting	Anti-col, Position, Landing	Landing, Taxi, Nav, Strobes, Beacon
Conditions	VMC	VMC
Visibility	>10km	5-10km
Altitude/FL	1300ft	1000ft
Altimeter	QNH (1022hPa)	QFE
Heading	265°	180°
Speed	100kt	75kt
ACAS/TAS	TAS	Not fitted
Alert	None	None
Separation at CPA		
Reported	0ft V/50-75m H	Not Seen
Recorded	100ft V/<0.1NM H	



THE EC135 PILOT reports that they were on their second NDB approach of the sortie in a particularly busy ATC environment with multiple aircraft on Approach frequency, including gliders and ‘student’ callsigns, and lots of circuit traffic. They had been cleared for the approach, and called ‘base turn complete’ as they rolled out on the final approach at 8.5NM. The descent was normal, although they were ever so slightly to the south of the track. A radio call prevented them getting their 4NM call out until they were at approximately 3.8NM, but the call was made and they transferred to Tower at approximately 3.5NM; again a busy frequency prevented them establishing comms with Tower. They then became aware of a conflicting (possibly blue and white) fixed-wing aircraft (possibly a PA28) in their 2 o’clock turning in onto final approach from the right-hand downwind/base leg position, level and slightly ahead of them. The other aircraft rolled-out on final approximately 100m ahead, at the same relative level as the EC135 and slightly offset to the south of their track. The Tower controller then called to notify them of the potential conflict, although the controller was not sure who was ahead. [The EC135 pilot] told the controller that they were visual. They were obviously faster than the fixed-wing and were overtaking them, so the instructor took control and flared the aircraft to reduce to 70kts as the Tower controller told them that they were to continue the approach and the fixed-wing aircraft was to go around on the deadside. They continued the approach visually, and conducted their go-around departing to the south behind and below the fixed-wing conflict traffic. Overall, they assessed that they were approximately 50-75m away and level with the conflicting traffic at the closest point. They had to take control from the student to prevent them getting even closer. They were not sure the other pilot had seen them as they made their base/final turn (if they had, one would hope they would have altered course to pass behind).

The pilot assessed the risk of collision as ‘High’.

THE PA28 PILOT reports that they were listening to the conversation with the controller and the helicopter who was on final approach. Mindful that they were not visual with the helicopter, they asked the controller if they could extend downwind to give them time to become visual with the helicopter before turning base, but were told 'negative turn base', they then received a call telling them to climb immediately and remain south of RW27. They climbed and re-joined the circuit south of RW27 centreline. They noted that the circuit was extremely busy at the time.

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

THE GLOSTER CONTROLLER reports that they were the ADI ATCO with a UT controller who was operating with ADI rating only. The Approach controller was a newly rated APP with a few years of ADI experience. The frequency was fairly busy for both Tower and the APP controller. It was a busy session with one in the circuit and a stream of inbounds VFR and outbounds VFR, with maybe one IFR. The ATM/radar was not in service and they had nothing shown on the screen to aid situational awareness. The APP controller gave the UT a coordination strip to highlight an IAP arrival, the [EC135 C/S]. It showed the callsign, type, type of approach, the time the aircraft went outbound on the procedure and its intentions on completion of the approach. Due to traffic and intensity loading, the Instructor elected to take the frequency from the UT with them continuing with the strip movement and marking. The APP ATCO informed them that the [EC135 C/S] had completed the procedure turn and was now inbound, typically 7-8NM final. The co-ord strip was moved into the live bay as appropriate by the UT controller to aid the situational awareness and to "block" traffic turning base-leg. They believed that [PA28 C/S] reported ready for base-leg, so they told them to continue downwind until instructed (so they could coordinate with APP the landing order). As Approach was fairly busy, they couldn't hear the request for a range check or even if they had, there was no "time" to do so as it was a busy freq. As only moments earlier APP had given the base turn complete check, and [PA28 C/S] typically being about 2NM downwind when ready for base, a scan of final approach yielded no traffic so they turned [PA28 C/S] assuming there would be approximately 3NM between [PA28 C/S] and the [EC135 C/S] once both were established on final. This would allow the distance erode to about 2NM as [PA28 C/S] was landing and the [EC135 C/S] going around. Without wanting to orbit multiple aircraft downwind and/or extend [PA28 C/S] out over Cheltenham at 1000ft QFE, and even beyond (due to high terrain) they elected to turn [PA28 C/S]. At about this point of turning [PA28 C/S], APP called "4D(ME)" and so they told APP about [PA28 C/S] on base ahead of [EC135 C/S]. They did not recall if the APP ATCO acknowledged this consciously or unconsciously. They believed they asked [PA28 C/S] whether they were visual with the helicopter (and if not, they should have). They didn't recall the answer. [EC135 C/S] checked in on Tower and they believed they passed Traffic Information. They didn't recall with enough clarity or detail the rest of the events except the [EC135 C/S] pilot mentioning "it was a bit close". [PA28 C/S] is their flying instructor and, later in the evening, they had spoken about other flying related topics and the pilot mentioned they had extended to about 3/3.5NM by the time the base leg commenced which they [the controller] had been unaware of, expecting them to be no more than 2/2.25NM. Again, without the use of the ATM and in such busy environment, it hindered the operation to provide adequate service.

Factual Background

The weather at Gloucestershire was recorded as follows:

METAR EGBJ 051020Z 30006KT 260V320 9999 SCT042 18/08 Q1023=

Analysis and Investigation

CAA ATSI

The EC135 [pilot] had been conducting a number of procedural approaches and was returning to the hold in preparation for their final approach, a procedural NDB/DME. The pilot had been offered the choice of a Procedural or Basic Service by the Gloucestershire Approach controller when they had originally called, and had requested a Basic Service. The PA28 had been operating VFR to the north and reported ready for re-join on the Approach frequency at 1025:18. The pilot was cleared for a "*standard overhead join, runway 27 righthand*", given the QFE and requested to report with 3

miles to run to the overhead. At the time of the Airprox both aircraft were in receipt of an Aerodrome Control Service.

At 1026:12, the EC135 pilot, who was now in the hold, reported ready for their approach next time over the NDB, and was given a clearance to commence the approach maintaining 3000ft until advised. The Approach controller then dealt with a number of other aircraft both inbound and outbound, before the pilot of the PA28 reported at 3 miles at 1031:21 (Figure 1).



Figure 1 – 1031:21

The Approach controller passed Traffic Information to the pilot of the PA28 on another PA28 (PA28(2)), inbound from the south, and then transferred them to the Tower frequency. The PA28 pilot reported on the Tower frequency at 1031:38 and was instructed by the Gloucestershire Tower controller to report in the overhead and when ready to descend on the deadside, which the pilot acknowledged.

At 1032:50 the pilot of a DA42 requested a direct join from the north with the Approach controller, who advised that the Tower was too busy for them to coordinate that and so they were to join via the overhead. At 1033:25 the pilot of an AC11 which had previously been transferred by the Approach controller called the Tower controller inbound from the west. The Tower controller instructed them to report in the overhead *“when ready to descend”* and passed Traffic Information on the PA28; *“traffic yet to descend from the northwest is a Cherokee”*. The controller then dealt with traffic ready for departure and traffic ready to taxi.

At 1033:30 the PA28 pilot reported ready to descend. The Tower controller cleared them to descend on the deadside, advising that an RV6 was due to depart from RW27 to the north, which was acknowledged. Reciprocal Traffic Information was then passed to the RV6 pilot (Figure 2).

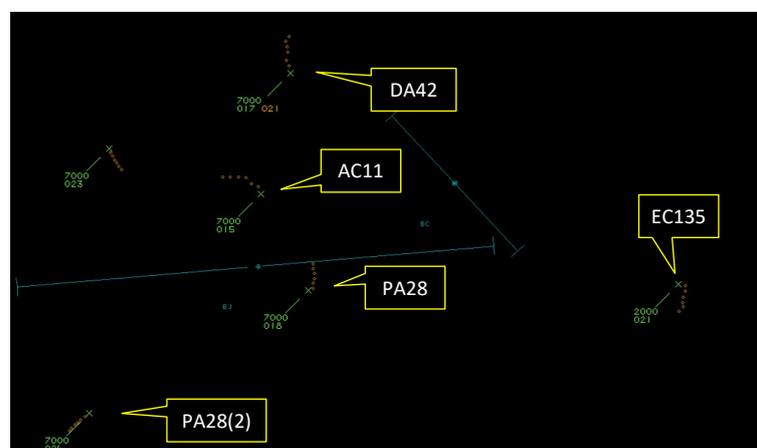


Figure 2 – 1033:30

On the Approach frequency, the pilot of the EC135 reported their base turn complete at 1034:00, and was instructed to report at 4DME by the Approach controller (Figure 3).

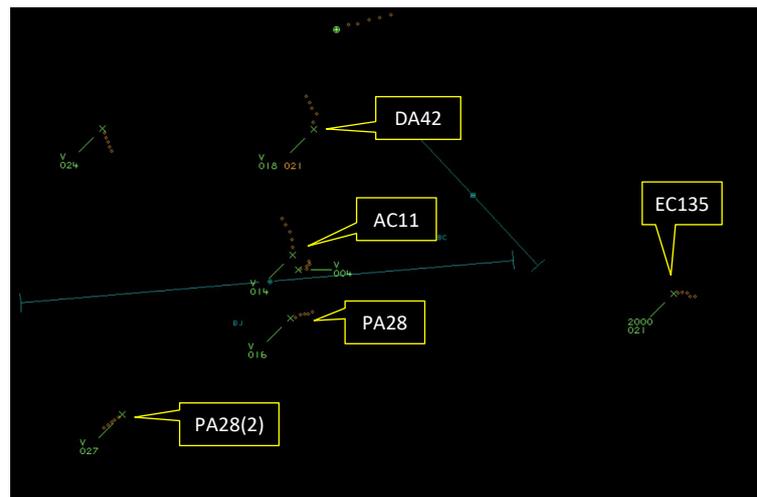


Figure 3 – 1034:00 EC135 at 8.5NM

At 1034:10 on the Tower frequency, the pilot of the AC11 reported descending on the deadside and advised that they were visual with the PA28 (Figure 4).

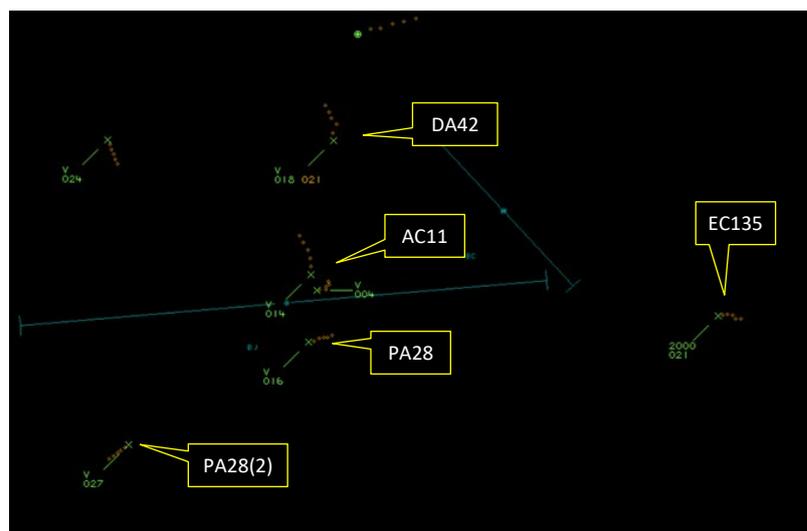


Figure 4 – 1034:10

The Tower controller instructed the AC11 pilot to follow the PA28 and advised them of the departing RV6. At 1034:30, on the Approach frequency, the pilot of the PA28(2) inbound from the southwest reported 3 miles to run to the overhead. The Approach controller passed Traffic Information on the DA42 inbound from the north, and advised them that the instrument approach was also active. They were then transferred to the Tower frequency.

On the Tower frequency two pilots called simultaneously. The controller cleared a helicopter pilot for a ground run and transferred the pilot of the RV6 – now airborne – to Approach.

At 1035 a controller handover of the Approach position took place.

At 1035:20 the Tower controller instructed the pilot of the PA28(2), inbound from the southwest, to remain in the overhead. They then passed Traffic Information to them on the inbound DA42 with a request that they report when they had that traffic visual (Figure 5).

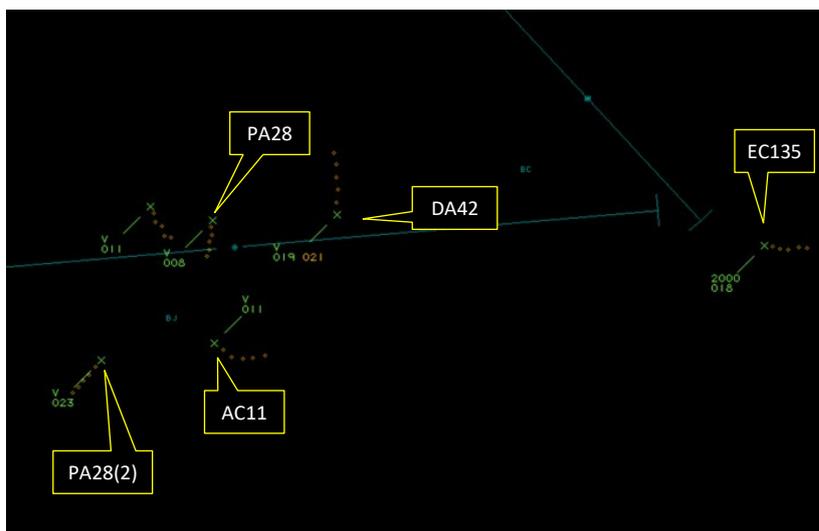


Figure 5 – 1035:20 EC135 6.3NM

At 1035:48 the pilot of the DA42 made their first call on the Tower frequency advising that they were ready to descend deadside (Figure 6).

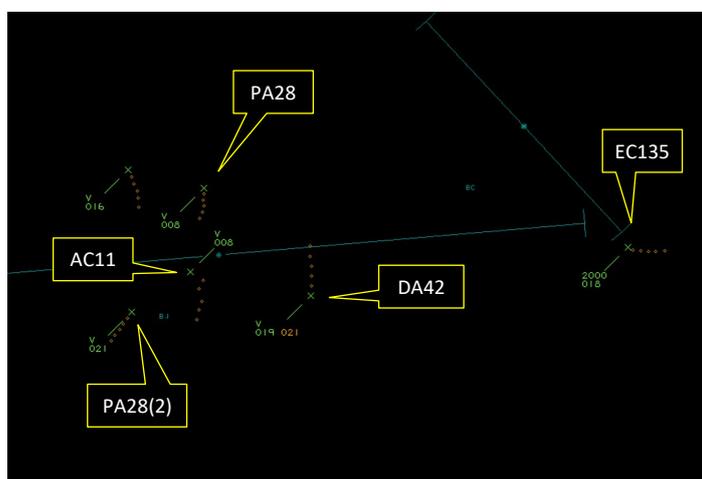


Figure 6 – 1035:48

The Tower controller requested a position check from the AC11 pilot who reported crosswind, about to turn downwind. The Tower controller then asked the DA42 pilot “*you visual with an AC11 on the crosswind leg, live side?*” The DA42 pilot initially didn’t see the aircraft but then very quickly reported visual and was instructed by the Tower controller to; “*descend on the deadside, and the quickest you can get to the north side the better, got instrument traffic on about a 4 mile final is an EC135 helicopter for a low approach*”, to which the DA42 pilot responded “*wilco – do my best*”.

At 1036:25 the Tower controller went back to the pilot of the PA28(2), gave them the position of the DA42 and asked if they were visual with it, to which the pilot of the PA28 said they weren’t. The controller replied “*when you are visual with the Twinstar, descend on the deadside but remain on the deadside*”.

At 1036:48 the pilot of the PA28 reported late downwind and was told to standby by the Tower controller.

At 1036:55, on the Approach frequency, the pilot of the EC135 reported just passing 4DME and was transferred to the Tower frequency (Figure 7).

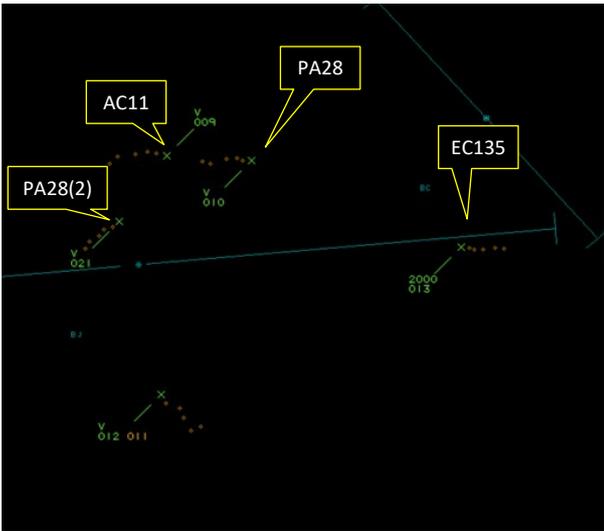


Figure 7 – 1036:55 EC135 3.9NM

At 1037:00 a pilot reported ready for departure on the Tower frequency. The Tower controller ignored that call and instructed the PA28 pilot to “turn base leg. Keep it tight, traffic at 4 miles is an EC135. You’re Number 1” to which the PA28 pilot replied “yeah roger – Number 1” (Figure 8).

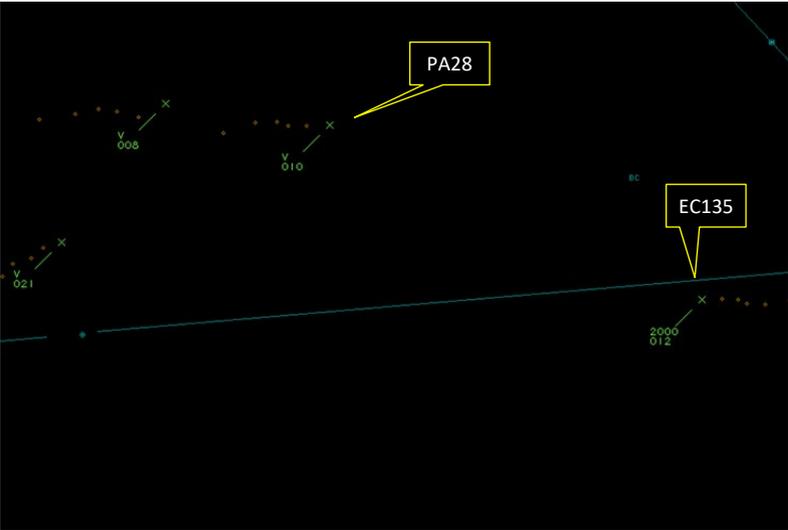


Figure 8 – 1037:00

The turn by the PA28 was not observed to have commenced on the area radar replay until 1037:15 (Figure 9).

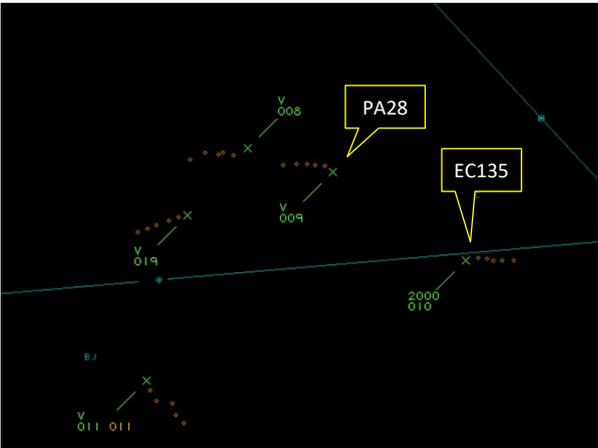


Figure 9 – 1037:15

The Tower controller then lined-up an aircraft, instructing the pilot to be ready for an immediate departure. At 1037:30 the controller passed Traffic Information to the PA28 pilot on the departing aircraft, then broke the transmission to clear the pilot of the aircraft lined-up for an immediate take-off (Figure 10).

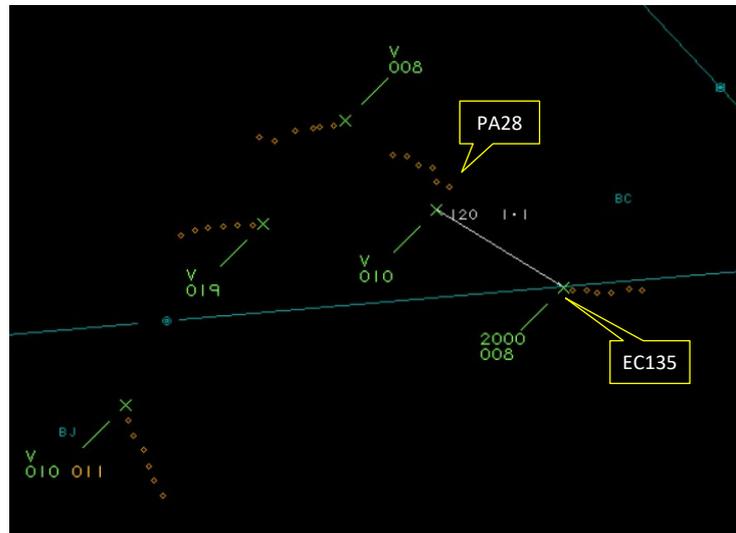


Figure 10– 1037:30

At 1037:45 the Tower controller called an aircraft on the ground but received no reply. At 1037:55 the controller called the pilot of the EC135 (which had not yet called). The EC135 pilot responded 2 seconds later (Figure 11).

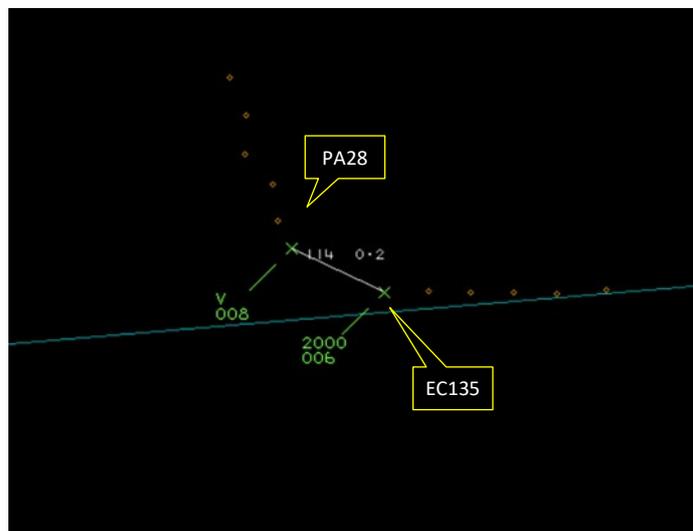


Figure 11 – 1037:55

The controller asked the pilot “are you visual with the Cherokee just turning ahead of you? Oh sorry – just behind...no he’s behind you”. The EC135 pilot did not reply.

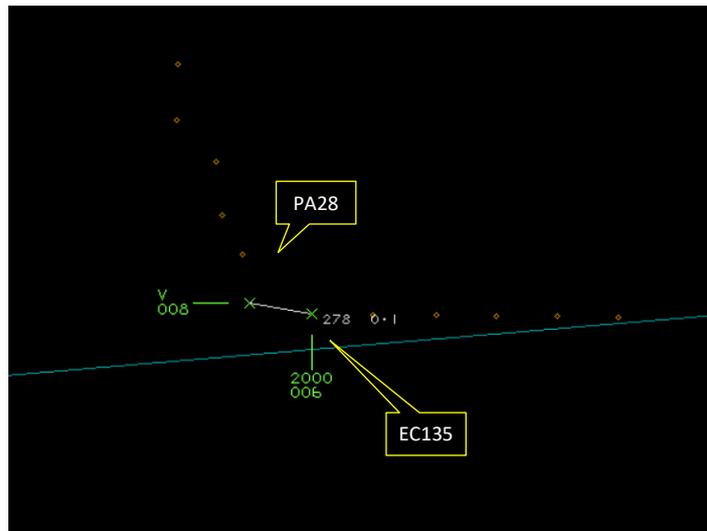


Figure 12 – 1037:58

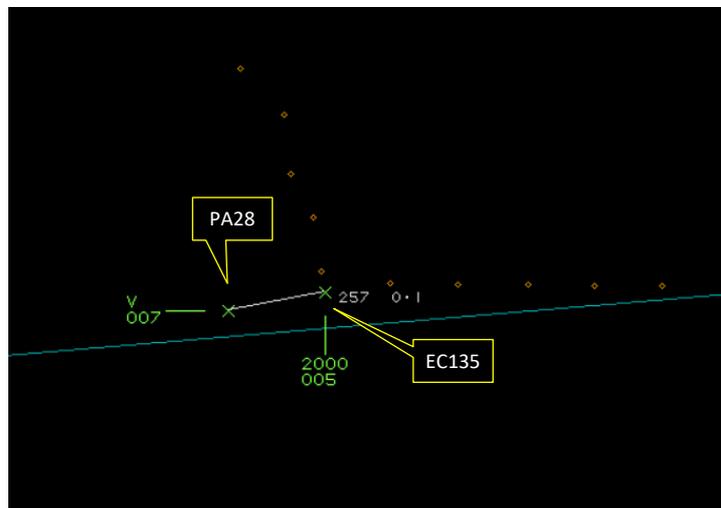


Figure 13 - 1038:03

At 1038:05 the controller asked the PA28 pilot “*you visual with the EC135 now on a 2 mile final?*” The pilot replied “*negative, but looking*” (Figure 14).

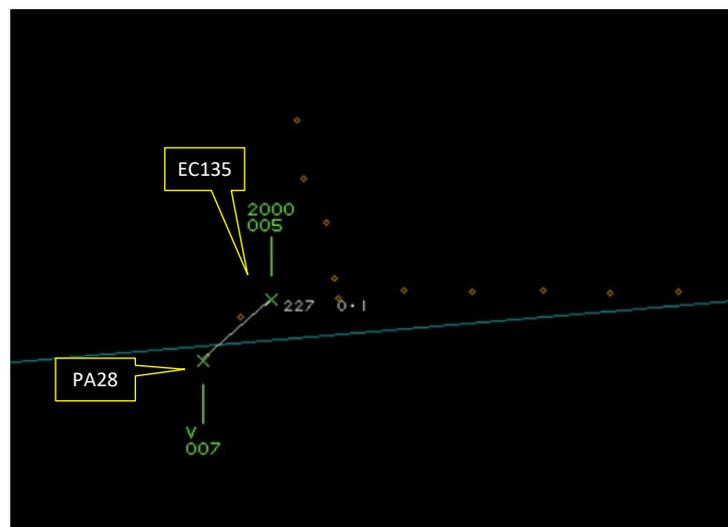


Figure 14 – 1038:05

At 1038:10 the controller instructed the PA28 pilot to “*Go around – break off to the south*” which was acknowledged by the pilot (Figure 15).

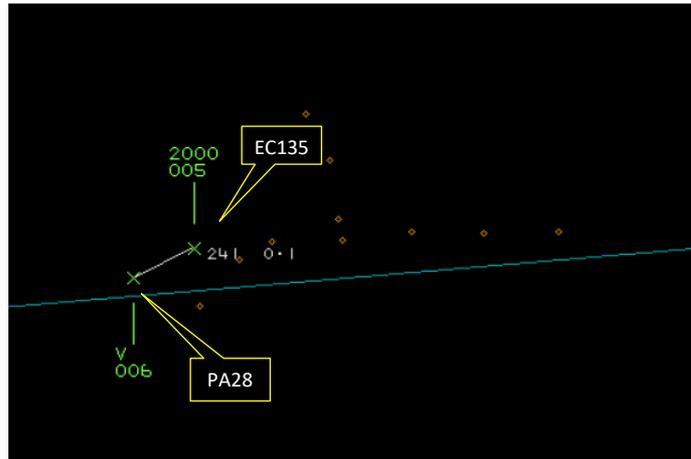


Figure 15 – 1038:10

At 1038:18 the EC135 pilot reported “we’re visual with him”. The controller instructed them to continue, advising that they were No1 (Figure 16).

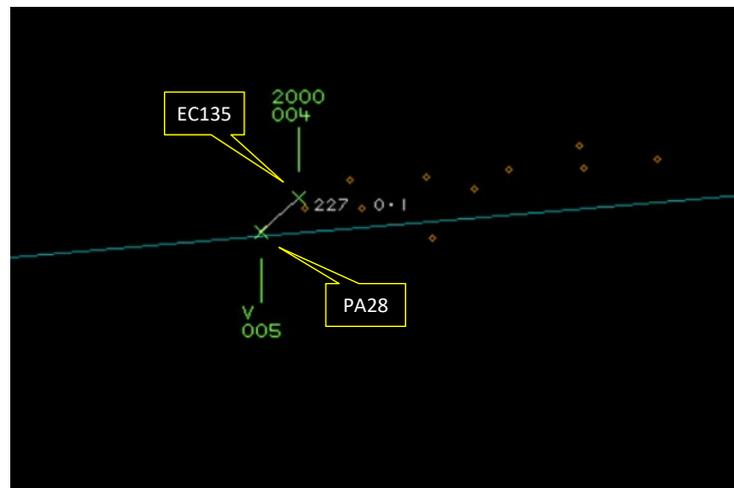


Figure 16 – 1038:18

With both aircraft having effectively been within 0.1NM and 100ft of each other for nearly 10sec, CPA then occurred at 1038:23 when the lateral distance on the area radar was seen to reduce further (Figure 17).

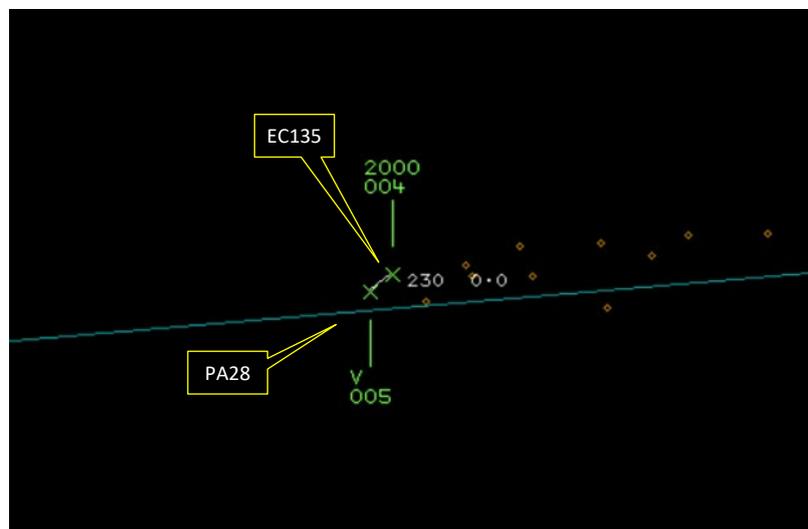


Figure 17 – 1038:23 CPA

ATSI received reports from both pilots and the Gloucestershire Tower controller. A review of both Gloucestershire Approach and Tower RTF was completed, and area radar replay was used to provide screenshots. Although Gloucestershire Airport has a primary radar, it was not serviceable that day, which also meant the controllers had no Aerodrome Traffic Monitor.

Both frequencies were busy, but both controllers were handling the traffic effectively. Good Traffic Information was being passed to pilots by both controllers.

It was apparent that a couple of aircraft calls were not made by the pilots, particular from the EC135 pilot i.e. making a 4DME call and “checking-in” on the Tower frequency on their procedural NDB/DME approach. It was likely that the near continuous transmissions on both frequencies during this period prevented them from doing so, and was remarked upon by the EC135 pilot.

Five seconds after the EC135 pilot had been transferred to the Tower frequency from Approach at 3.8NM, the Tower controller instructed the pilot of the PA28 to turn on to base-leg, advising they were No1. They also requested that the pilot “*keep it tight*” giving the reason “*traffic at 4 miles is an EC135*”. Even with the benefit of the radar replay it cannot be determined with any great certainty if that plan would have worked or not. However, as they were an experienced controller, familiar with operations at Gloucestershire and it was their judgement at the time, they must be given the benefit of the doubt. Ultimately, by the time the PA28 was observed to have commenced the turn onto base, 15sec later, it was clear that it would conflict with the EC135 on final approach. However, the Gloucestershire Tower controller did not have access to any surveillance-derived information.

The Tower controller’s recollection of the events in their report does not entirely match the transmissions made, as they believed they had received a call from the pilot of the PA28 advising they were ready for base-leg, and that they had instructed them to continue downwind. In fact the pilot reported late downwind and was instructed by them to standby. The Tower controller reported that this was to allow them time to scan the final approach for the EC135. The controller reported requesting a range check on the EC135 from the Approach controller but who did not hear that request. The Tower controller also believed the frequency would have been too busy to have obtained one in time anyway. As they did not see the EC135 on final approach, they elected to turn the PA28 onto base-leg. They reported that they were then provided with a 4DME check from the Approach controller. No written report was received from the Approach controller.

The other options available to the controller were either to extend the PA28 downwind or obtain a visual call with the EC135. The two aircraft behind could then have held behind in orbits, or indeed the PA28 could have orbited, although the available space for the following traffic to do so would be much reduced. The controller reported being reluctant to do either and so committed to the turn onto base with the PA28.

Gloucestershire Airport is a busy environment and on this day both rotary and fixed-wing circuits were active, there were multiple inbound and outbound VFR and IFR flights, and an active instrument approach. Without an ATM, the frequent use of range checks is critical in maintaining good situational awareness for both controller and pilot, and to allow the controllers to continue to provide an expeditious and orderly flow of air traffic. Whilst both controllers were doing their best to provide this, and the Approach controller was obtaining frequent range checks from their aircraft, the Tower controller might have benefited from more range information on the EC135. Controllers are trained on defensive controlling methods and without an ATM in such a busy environment, a “belt and braces” approach would have been considered appropriate.

The Gloucestershire ATC investigation report concluded that ultimately the decision by the Tower controller to turn the PA28 onto base when they did, without knowing the exact range of the EC135, was the wrong decision. The unit issued a reminder to controllers to obtain DME ranges from aircraft when either localiser established or base turn complete when the ATM is unavailable, or at any other time they feel it necessary.

The pilot of the EC135 reported seeing the PA28 turn onto final approach ahead of them, and as they were a helicopter, took control from the student and flared the aircraft to reduce their speed. They assessed the distance between them continued to reduce to as little as 50m.

The PA28 pilot stated in their report that they had requested to extend downwind as they were aware of, but not visual with, the EC135, but that the controller had instructed them to turn onto base. The pilot actually only made a “late downwind” call.

Without assuring themselves that it was safe to do so, the Tower controller instructed the PA28 pilot to turn onto base-leg with the EC135 established at an unknown distance on final approach.

UKAB Secretariat

The EC135 and PA28 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 PA28 flew into proximity in the vicinity of Gloucestershire airport at 1038Z on Friday 5th August 2022. The EC135 pilot was operating under IFR in VMC and the PA28 in under VFR in VMC. Both pilots were in receipt of an ACS from Gloucestershire ATC.

PART B: SUMMARY OF THE BOARD’S DISCUSSIONS

Information available consisted of reports from both pilots, radar photographs/video recordings, reports from the air traffic controllers involved and reports from the appropriate operating authorities. 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 looked at the actions of the Tower controller. It had been a busy session in both the Tower and Approach controlling positions at the time. The lack of radar, and therefore the ATM, had made it difficult for the Tower controller to know the range of the instrument traffic and therefore difficult to integrate the visual circuit traffic with the instrument traffic; members agreed that this had been a contributory factor in this Airprox (**CF2**). Although the Tower controller had called across to the Approach controller (who had been in the same room) asking for a position update on the EC135, the Approach controller had either not heard the request, or been too busy to respond; consequently, the Tower controller had only had generic situational awareness on the position of the EC135 (**CF6**). Believing that they could fit in the PA28 ahead of the EC135, the Tower controller had told the PA28 pilot to turn onto base. The controller had outlined reasons why they had not wanted to orbit the aircraft late downwind, and whilst members acknowledged that the controller had made the call in good faith that the plan would work, still they thought that this instruction, given without full knowledge of the position of the EC135, had contributed to the Airprox (**CF1, CF4, CF7**). When the instruction had been issued to the PA28 pilot to turn onto base, the controller had told the PA28 pilot that the instrument traffic was at 4 miles (because they believed it had been); however, in reality the EC135 had been closer than this (**CF3**). Some controlling members wondered why, given that the Tower controller had reported not being visual with the EC135 themselves, and not having an ATM to check the geometry of the two aircraft, the Tower controller had not asked the PA28 pilot whether they had been visual and put the onus on the pilot to continue downwind until visual, especially because the EC135 would have been faster than the PA28 and therefore would have caught it up on final. However, it was acknowledged that members had the benefit of hindsight not available to the controller at the time. As the two aircraft had become closer, the frequency congestion had prevented the EC135 pilot from making their call on the Tower frequency and so it wasn’t until the controller had called the pilot that

¹ (UK) SERA.3205 Proximity.

² (UK) SERA.3225 Operation on and in the Vicinity of an Aerodrome.

they had been able to give Traffic Information to the EC135 pilot (**CF5**), by which point the controller had been unsure which aircraft had been ahead.

Members noted that operations at Gloucestershire Airport were incredibly busy and that this day had not been any different, with aircraft joining from all directions and multiple circuits active. They thought that the controllers were put in an invidious position in that they were expected to maintain the safe and expeditious flow of air traffic despite everything that had been thrown at them and without the usual tools to help, such as the radar or ATM, and some members thought that circuit numbers should be restricted on such occasions. They noted that they had previously made a number of recommendations to Gloucestershire Airport about reviewing procedures particularly with regard to mixing IFR and VFR procedures but, noting that Gloucestershire had made a recommendation for a change in procedures when the ATM is not in use, they stopped short of making a further recommendation on this occasion.

Turning to the actions of the PA28 pilot, they had been told to turn onto base by the controller and had been given inaccurate situational awareness on the position of the EC135 (**CF9**). Members accepted that the pilot should have had every confidence that the controller had everything under control, but urged pilots to remain alert to the notion that mistakes can be made. Their recollection of the event had been that they had requested that they extend downwind in order to become visual with the EC135 and that this had been denied, but in fact the RT recording had revealed that this had not been the case. Whether this had been discussed in-cockpit at the time but not put into action was not known, but members agreed that, whilst not advocating that pilots question all ATC instructions, given that they had not been visual with the EC135, the PA28 pilot should have requested more information prior to turning onto base (**CF8**). Having turned onto base and continued with their approach as cleared, the PA28 pilot had not seen the EC135 and had been instructed to go-around by the controller (**CF12**).

The EC135 pilot had been conducting an IFR approach, had not been on the Tower frequency and so had not been given full situational awareness on the visual circuit situation and the PA28 turning ahead (**CF9**). They had switched over to the Tower frequency, but then struggled to make the initial call, so the first information they had had from the controller had been more or less at CPA. The pilot described seeing the PA28 as it had turned onto final in their 2 o'clock and so members agreed that this had been a late sighting by the EC135 pilot (**CF11**). Noting that the EC135 had been fitted with a CWS, members agreed that this should have alerted to the PA28, which had been transponder equipped, but no alert had been reported (**CF10**) compounding the lack of prior situational awareness available to the pilot.

When assessing the risk of the Airprox, the Board took into consideration the reports from the pilots and controller, together with the radar replay and RT recordings. Although the PA28 pilot had not seen the EC135, the EC135 pilot had become visual with the PA28 with enough time to slow down and increase the separation. However, members thought that the late nature of the avoiding action and the final separation described a situation where a risk of collision had existed and safety had been much reduced; Risk Category B (**CF13**).

PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK

Contributory Factors:

2022185				
CF	Factor	Description	ECCAIRS Amplification	UKAB Amplification
Ground Elements				
• Regulations, Processes, Procedures and Compliance				
1	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				
2	Technical	• Radar Coverage	Radar Coverage	Non-functional or unavailable
• Situational Awareness and Action				
3	Human Factors	• ANS Traffic Information Provision	Provision of ANS traffic information	TI not provided, inaccurate, inadequate, or late

4	Human Factors	• Inappropriate Clearance	An event involving the provision of an inappropriate clearance that led to an unsafe situation	
5	Contextual	• Frequency Congestion	An event involving frequency congestion that reduces the effectiveness of communications	
6	Contextual	• Traffic Management Information Action	An event involving traffic management information actions	The ground element had only generic, late, no or inaccurate Situational Awareness
7	Human Factors	• Traffic Management Information Provision	An event involving traffic management information provision	The ANS instructions contributed to the Airprox
Flight Elements				
• Situational Awareness of the Conflicting Aircraft and Action				
8	Human Factors	• Lack of Communication	Events involving flight crew that did not communicate enough - not enough communication	Pilot did not request additional information
9	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				
10	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				
11	Human Factors	• Identification/Recognition	Events involving flight crew not fully identifying or recognising the reality of a situation	Late sighting by one or both pilots
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
• Outcome Events				
13	Contextual	• Near Airborne Collision with Aircraft	An event involving a near collision by an aircraft with an aircraft, balloon, dirigible or other piloted air vehicles	

Degree of Risk: B.

Safety Barrier Assessment³

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 **partially effective** because the controller told the PA28 pilot to turn onto base-leg without knowing the position of the EC135.

Manning and Equipment were assessed as **ineffective** because the radar, and therefore the ATM, were not serviceable.

Situational Awareness of the Confliction and Action were assessed as **ineffective** because the Tower controller had inaccurate SA on the position of the EC135.

Flight Elements:

Situational Awareness of the Conflicting Aircraft and Action were assessed as **partially effective** because the PA28 pilot had inaccurate SA on the position of the EC135 and, although not

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

visual with it, did not ask for more information prior to turning onto base. Furthermore, the EC135 pilot did not have any prior situational awareness on the PA28 until they became visual.

Electronic Warning System Operation and Compliance were assessed as **ineffective** because it was reported that the TAS on the EC135 did not alert.

See and Avoid were assessed as **partially effective** because the EC135 pilot saw the PA28 and was able to slow down to remain clear, albeit late.

Airprox Barrier Assessment: 2022185		Outside Controlled Airspace		Effectiveness				
Barrier		Provision	Application	Barrier Weighting				
				0%	5%	10%	15%	20%
Ground Element	Regulations, Processes, Procedures and Compliance	✓	⚠	[Yellow bar to 5%]				
	Manning & Equipment	✗	✓	[Red bar to 5%]				
	Situational Awareness of the Confliction & Action	⚠	✗	[Red bar to 15%]				
	Electronic Warning System Operation and Compliance	⊖	⊖	[Grey bar to 5%]				
Flight Element	Regulations, Processes, Procedures and Compliance	✓	✓	[Green bar to 10%]				
	Tactical Planning and Execution	✓	✓	[Green bar to 10%]				
	Situational Awareness of the Conflicting Aircraft & Action	⚠	⚠	[Yellow bar to 20%]				
	Electronic Warning System Operation and Compliance	⚠	✗	[Red bar to 15%]				
	See & Avoid	⚠	⚠	[Yellow bar to 20%]				
Key:		Full	Partial	None	Not Present/Not Assessable	Not Used		
Provision	✓	⚠	✗	⊖	○			
Application	✓	⚠	✗	⊖	○			
Effectiveness	■	■	■	■	□			