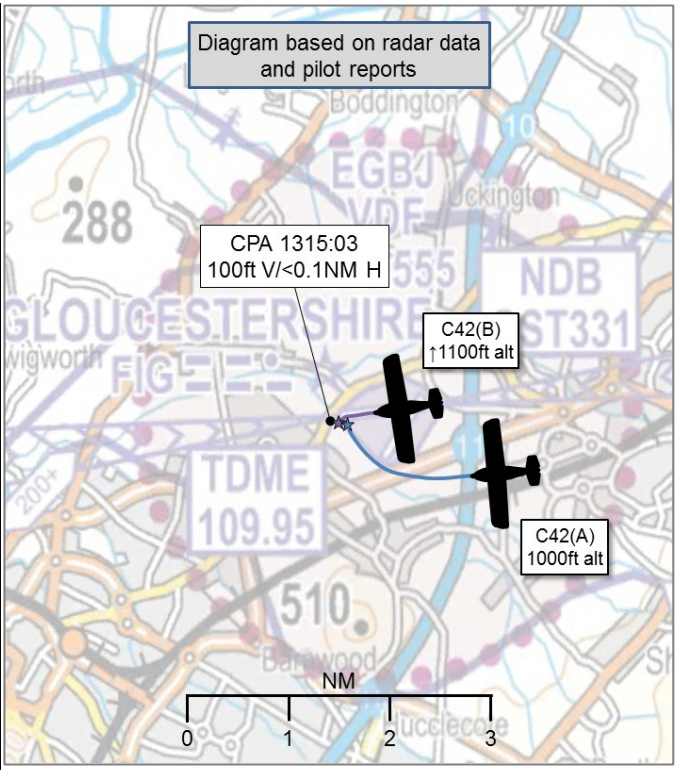
AIRPROX REPORT No 2020085

Date: 02 Aug 2020 Time: 1315Z Position: 5153N 00210W Location: Gloucestershire ATZ

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	C42(A)	C42(B)
Operator	Civ FW	Civ FW
Airspace	Gloucestershire ATZ	Gloucestershire ATZ
Class	G	G
Rules	VFR	VFR
Service	ACS	ACS
Provider	Gloster	Gloster
Altitude/FL	1000ft	1100ft
Transponder	A, C	A, C
Reported		
Colours	White, Blue	Not reported
Lighting	Not reported	Not reported
Conditions	VMC	VMC
Visibility	>10km	NK
Altitude/FL	1000ft	1000ft
Altimeter	QFE (1016hPa)	QFE (1016hPa)
Heading	300°	270°
Speed	70kt	70kt
ACAS/TAS	Not fitted	Not fitted
Separation		
Reported	0ft V/50ft H	Not seen
Recorded	100ft V/<0.1NM H	



THE C42(A) PILOT reports that they were cleared to descend deadside in the overhead. At the end of RW27 they turned right onto crosswind and were informed by ATC that an aircraft would climb out behind them. The aircraft climbed out in front of them which caused them to take avoiding action to the right. The C42 [C/S provided] was right in front of them by about 50ft in the climb.

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

THE C42(B) PILOT reports that they were given clearance to take off by Gloster Tower. After departure the climb continued in a steady manner at approximately 70kts. They note that the coordinates given for this incident are a little past the end of the runway and between 100-150m to the south of it. They would have been at about 1000ft agl as they passed this point, continuously climbing, still at about 70kts, and continued to do so until levelling out at 3000ft QNH, shortly after exiting the Gloucester ATZ. During the climb-out phase, with the aircraft pitched upwards, their view would have been predominantly forward looking out for traffic ahead of them. At no time did they spot any other aircraft whilst within the Gloucester ATZ. They remained on the Tower frequency until nearing the edge of the ATZ when they were transferred to the radar controller. They remained with them, on a Basic Service, for some while, until passing the Severn Bridge. At no point did either controller mention any notification of an incident having occurred.

THE GLOSTER TOWER CONTROLLER reports that the C42(B) pilot had been instructed to comply with noise abatement and then make a left turn to the southeast and cleared for take-off. The C42(A) pilot had been carrying out a standard overhead join and was descending on the deadside. The C42(B) pilot made a rapid climb rate and the C42(A) pilot was alerted and passed behind.

Factual Background

The weather at Gloucestershire Airport was recorded as follows:

METAR EGBJ 021250Z 21006KT 170V260 9999 FEW032 FEW036TCU 22/10 Q1016

Analysis and Investigation

CAA ATSI

At 1254:08 the C42(A) pilot called the Gloucestershire approach controller advising that they were inbound. The controller agreed a Basic Service with the pilot and advised them it would be a *"standard overhead join Runway 27 right-hand"*, passed them the QFE and requested a call at 3 miles. At 1309:10, the pilot reported at 3 miles. The approach controller advised them that the helicopter circuit was active and instructed them to contact the Tower, which was all read back correctly (Figure 1).

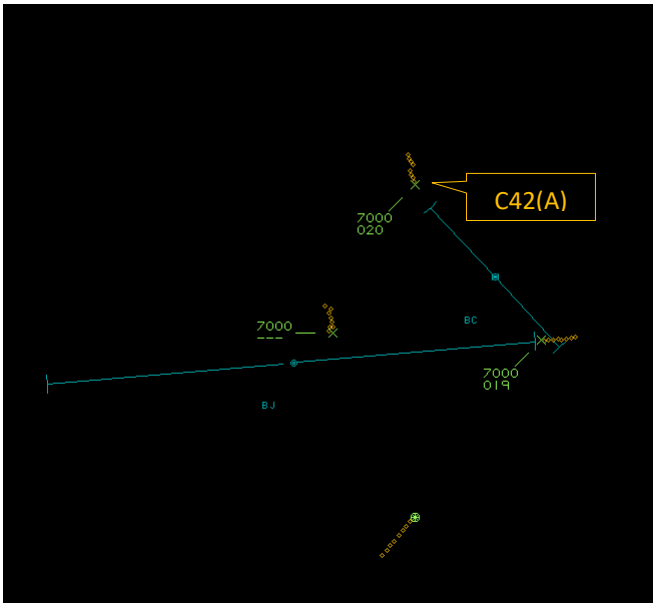


Figure 1 – 1309:10 – C42(A) reports at 3 miles (aircraft is 4.5NM north).
Note – area radar displaying aircraft levels as Flight Levels, add 80ft for altitude.

At 1308:38, the C42(B) pilot called the tower controller, requesting the airfield information for their return flight. The controller advised them that Runway 27 was in use and passed the wind and QNH which were read back correctly. The pilot of the C42(B) then asked for clarification of the turn after departure to the southeast, asking the controller to confirm that it would be a right turn. The controller advised them it would be a left turn.

At 1309:40 the C42(A) pilot reported on the Tower frequency. The Tower controller instructed them to report in the overhead, advising that there was a Eurocopter to make a go around. The pilot went on to say, at 1310:00, that they were overhead Tewkesbury and believed that they were approaching the deadside. The Tower controller repeated the instruction to report the overhead. (Note, the aircraft was just approaching the outskirts of Cheltenham some 5NM to the south-east of Tewksbury – Figure 2).

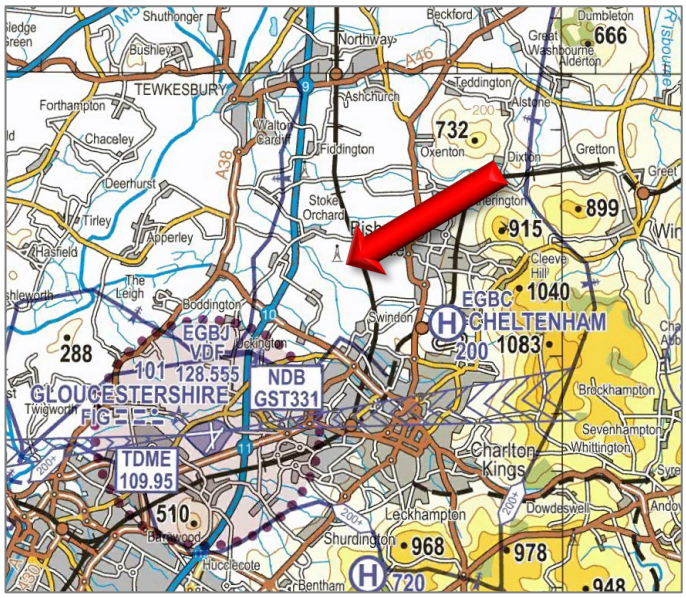


Figure 2 – C42(A)'s position at 1310:00 (arrowed)

At 1312:30 the C42(A) crossed the Runway 27 final approach, and at 1312:45 the pilot reported in the overhead. The Tower controller cleared them to descend on the deadside and instructed them to report downwind.

At 1313:30, having reported ready for departure, the Tower controller advised the C42(B) pilot that the helicopter circuit was active and cleared them for take-off.

At 1314:39 the C42(B) became visible on the area radar replay (Figure 3).

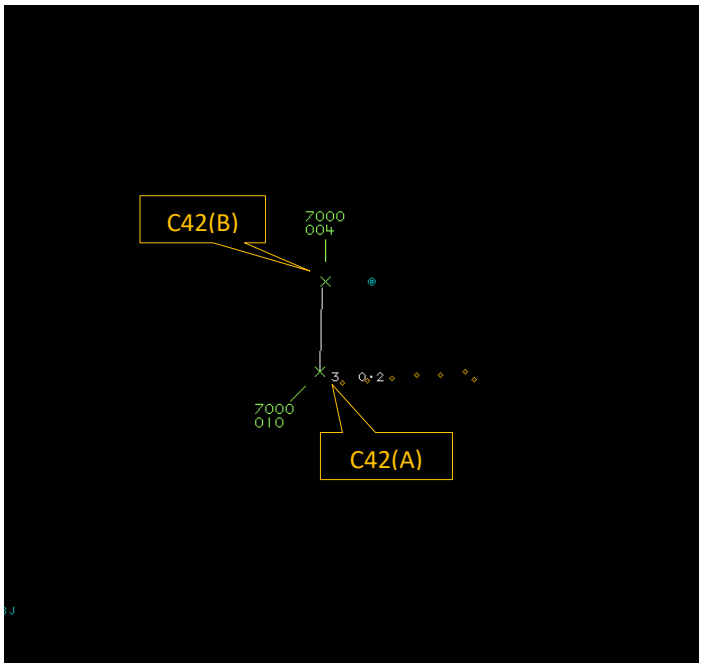


Figure 3 – 1314:39

At 1314:44 the Tower controller advised the C42(A) pilot *"just to caution, the Ikarus on the climb out ahead I think you will go behind but he is for a left turn"*. The C42(B) pilot responded, *"looking out for traffic"* (Figure 4).

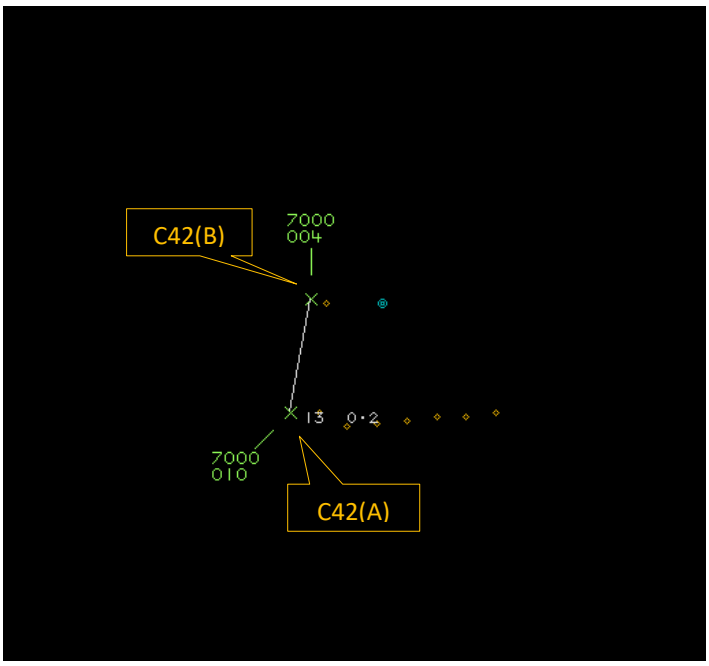


Figure 4 – 1314:44

CPA occurred at 1315:02 (Figure 5).

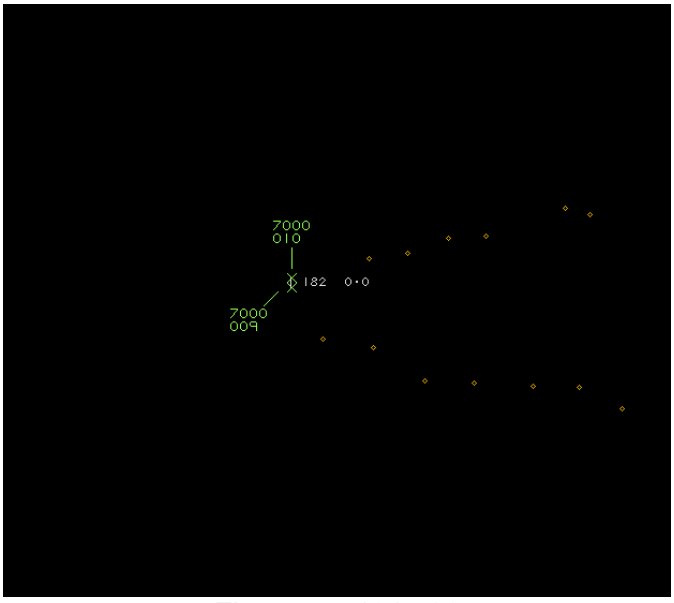


Figure 5 – 1315:02

The pilot of the C42(A) reported seeing the departing C42(B) climbing out ahead of them after having turned crosswind, forcing them to take avoiding action. In their report they stated that they thought the controller had said that the C42B would pass behind them, which was not the case. The pilot of the C42(B) reported being unaware of any other traffic at the time.

Although the Tower controller passed Traffic Information to the C42(A) pilot on the departing C42(B), it was passed once that aircraft was airborne, and no reciprocal Traffic Information was passed to the C42(B). Also, the Traffic Information was passed without being prefixed "*Traffic Information*" and was not delivered in a clear and unambiguous manner.

Due to COVOD-19 restrictions, ATSI investigations were limited to a desktop review. Questions which remained unanswered by the time this report was submitted to UKAB were:

- Was the Tower controller visual with the arriving C42(A) and if so, at what point?

- Why was Traffic Information not passed earlier, and to both C42 pilots, not just C42(A)?

No investigation report had been submitted by the unit to either the CAA or UKAB at the time of writing this report, however an extract was sent by email to ATSI by the unit. This suggested that the Tower controller had been visual with the arriving C42(A) and the email went on to state:

"The investigation didn't really throw up anything of concern and as such been completed. Traffic information was passed to [C42(A) C/S] on the departing C42[B] as it became evident that this aircraft appeared to be climbing rapidly and was likely to be in confliction with the crosswind traffic. Investigation revealed no ATCO contributory factors therefore no further action is required".

Whilst the aircraft was cleared for an overhead join, a manoeuvre designed to allow a pilot to integrate with existing circuit traffic, and which is more common at uncontrolled airfields, this does not absolve a controller of their own responsibilities with regards to the passing of Traffic Information to enable better pilot situational awareness.

The Gloucestershire Manual of Air Traffic Services Pt 2 deems that the default joining procedure for VFR fixed-wing traffic is the "Standard Overhead Join". It goes on to say, (Section 3. Chapter 2, Page 5)

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.

With regards to the responsibilities of a controller providing an Aerodrome Control Service, CAP493 The Manual of Air Traffic Services states (Section 2: Chapter 1: Aerodrome Control – Page 1):

Aerodrome Control shall issue information and instructions to aircraft under its control to achieve a safe, orderly and expeditious flow of air traffic with the objective of:

(1) Preventing collisions between:
(a) aircraft flying in, and in the vicinity of, the ATZ;
(b) aircraft taking-off and landing;
(c) aircraft and vehicles, obstructions and other aircraft on the manoeuvring area.

Note: Aerodrome Control is not solely responsible for the prevention of collisions. Pilots and vehicle drivers must also fulfil their own responsibilities in accordance with Rules of the Air Regulations.

The Airprox took place in Class G airspace, where, regardless of the type of ATS being provided, both pilots are ultimately responsible for their own collision avoidance.

UKAB Secretariat

The C42(A) and C42(B) 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 observe other aerodrome traffic for the purpose of avoiding collision and conform with or avoid the pattern of traffic formed by other aircraft in operation.[2]

Summary

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

An Airprox was reported when two C42s flew into proximity at Gloucestershire Airport at 1315Z on Sunday 2nd August 2020. Both pilots were operating under VFR in VMC, both pilots in receipt of an Aerodrome Control Service from Gloster Tower.

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.

Due to the exceptional circumstances presented by the coronavirus pandemic, this incident was assessed as part of a 'virtual' UK Airprox Board meeting where members provided a combination of written contributions and dial-in/VTC comments.

The Board began by looking at the actions of the Gloucestershire controller. The Board said they were disappointed that the Gloucestershire ATC investigation was not robust enough to identify all the factors that contributed to the Airprox. Members wondered why the controller had been surprised by the rate of climb of the departing C42(B), the climb rate of these types of aircraft can be quicker than other aircraft due to the light composition of the aircraft. The controller passed Traffic Information to the C42(A) pilot, albeit this Traffic Information was non-standard, and the verbose wording probably resulted in the C42(A) pilot misinterpreting the information and believing the departing C42 would pass behind them. The controller did not pass reciprocal Traffic Information to the C42(B) pilot (**CF4**) prior to issuing a take-off clearance which would have alerted the pilot to the C42(A) turning deadside to crosswind and would have allowed the C42(B) pilot to plan their departure profile to deconflict from the crosswind C42(A) (**CF1 & 3**). The ATSI advisor said that the view from Gloucestershire Tower results in aircraft joining overhead not being visible to the controller until they are crosswind, regardless there are a number of actions that the controller could have taken that would have provided more proactive control of both aircraft (**CF2**) and mitigated the risk of the joining aircraft conflicting with the departing aircraft.

The Board then looked at the actions of the C42(A) pilot who was executing an overhead join. When they turned crosswind, they received Traffic Information about the departing C42(B). Unfortunately, probably due to the verbose phraseology from the Tower controller, the C42(A) pilot did not fully assimilate the Traffic Information that the C42(B) would pass either in front or behind them (**CF6**) and believed the C42(B) would pass behind them. Because of this the C42(A) pilot's situational awareness was flawed, and they did not adequately integrate with the departing C42(B) (**CF7**). The C42(A) pilot was not actively looking for the C42(B), only seeing it as it was climbing and passing in front of them, (**CF10**) resulting in them taking emergency avoiding action. Members agreed that the C42(A) pilot should still have been looking out, (regardless of their interpretation of the Traffic Information) when they were preparing to turn crosswind to cross the upwind end of the runway, the Skyway Code specifically warns pilots joining overhead to *'Watch for aircraft taking off, as they could pose a hazard'*[3].

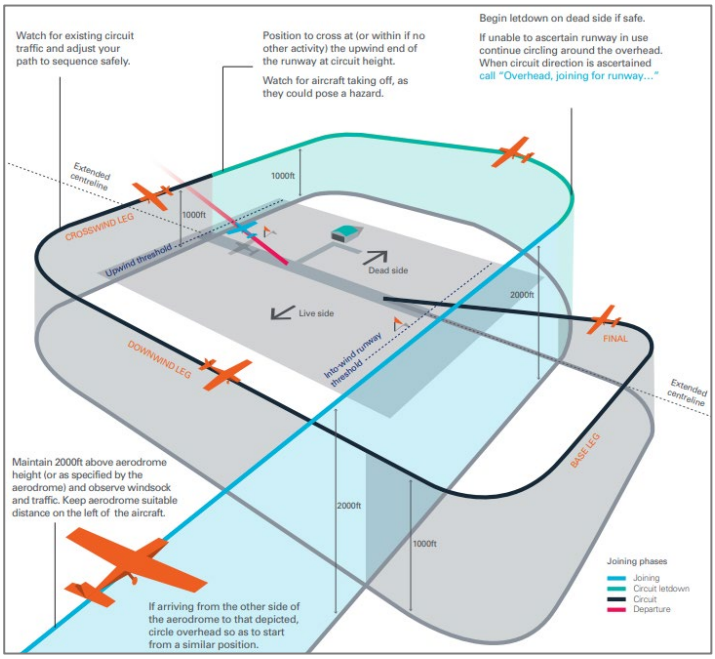


Figure 6: CAA CAP 1535, Skyway Code Overhead Joins

[3] CAA CAP 1535 Skyway Code, Page 8.

Turning to the actions of the C42(B) pilot, the Board agreed that as the pilot was on the same frequency as the C42(A) pilot, they should have had generic situational awareness based on the radio transmissions between the C42(A) pilot and the Gloster controller (**CF5**). This should have prompted the C42(B) pilot to look for the joining C42(A). Because of the steep climb of the C42(B) the pilot's view was impaired, and they did not see the C42(A) when they passed in front of it (**CF9**).

Finally, the Board turned to the risk. The C42(A) pilot had not seen the C42(B) until late and the C42(B) pilot did not see the C42(A) at any time. Members agreed that because of this the safety of the aircraft was not assured (**CF8**), a Risk Category B.

PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK

Contributory Factors:

	2020085		
CF	**Factor**	**Description**	**Amplification**
	Ground Elements		
	• Regulations, Processes, Procedures and Compliance		
1	Human Factors	• ATM Regulatory Deviation	Regulations and/or procedures not complied with
	• Situational Awareness and Action		
2	Human Factors	• Conflict Resolution – Not provided	
3	Human Factors	• Inappropriate Clearance	The ANS clearance contributed to the Airprox
4	Human Factors	• ANS Traffic Information Provision	TI not provided, inaccurate, inadequate, or late
	Flight Elements		
	• Situational Awareness of the Conflicting Aircraft and Action		
5	Contextual	• Situational Awareness and Sensory Events	Pilot had no, late or only generic, Situational Awareness
6	Human Factors	• Understanding/Comprehension	Pilot did not assimilate conflict information
7	Human Factors	• Monitoring of Other Aircraft	Pilot did not sufficiently integrate with the other aircraft
	• See and Avoid		
8	Contextual	• Near Airborne Collision with Aircraft, Balloon, Dirigible or Other Piloted Air Vehicle	Piloted air vehicle
9	Human Factors	• Monitoring of Other Aircraft	Non-sighting or effectively a non-sighting by one or both pilots
10	Human Factors	• Monitoring of Other Aircraft	Late-sighting by one or both pilots

Degree of Risk: B.

Safety Barrier Assessment[4]

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 the Gloster controller did not adequately control the C42s to ensure they remained adequately separated.

Situational Awareness of the Confliction and Action were assessed as **ineffective** because the Gloster controller allowed the C42(B) pilot to depart into conflict with the C42(A) without providing adequate Traffic Information to both pilots.

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

Flight Elements:

Situational Awareness of the Conflicting Aircraft and Action were assessed as **partially effective** because the C42(B) pilot was not passed Traffic Information on the C42(A) turning crosswind. The C42(A) pilot did not correctly assimilate the Traffic Information from the Gloster controller and did not adequately ensure their flightpath was clear before turning crosswind.

See and Avoid were assessed as **partially effective** because the C42(B) pilot did not see the C42(A). The C42(A) pilot saw the C42(B) late and carried out emergency avoiding action.