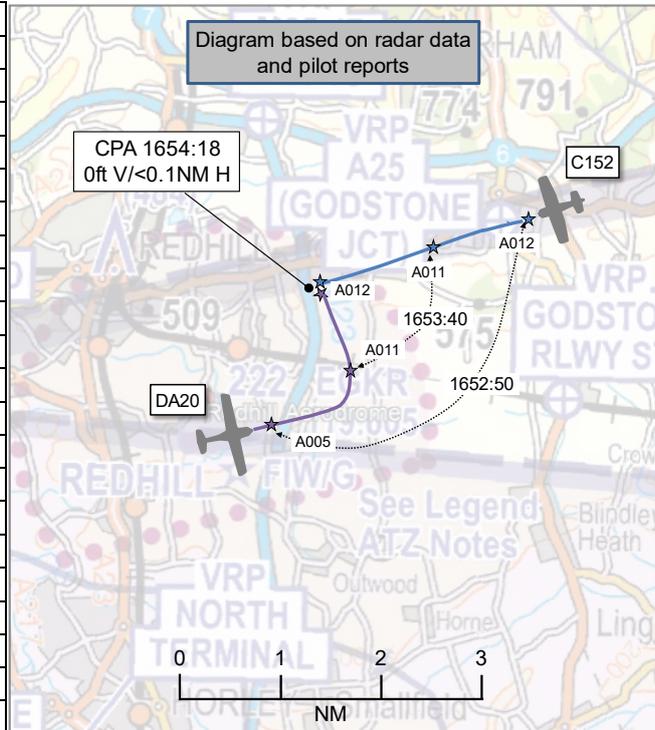


AIRPROX REPORT No 2023063

Date: 25 Apr 2023 Time: 1654Z Position: 5114N 00006W Location: Redhill Aerodrome circuit

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	C152	DA20
Operator	Civ FW	Civ FW
Airspace	Redhill ATZ	Redhill ATZ
Class	G	G
Rules	VFR	VFR
Service	ACS	ACS
Provider	Redhill Tower	Redhill Tower
Altitude/FL	1200ft	1200ft
Transponder	A, C	A, C, S
Reported		
Colours	White	White/green
Lighting	Nav and beacon	Strobes and Nav
Conditions	VMC	VMC
Visibility	>10km	>10km
Altitude/FL	1200ft	1200ft
Altimeter	QNH (1018hPa)	QNH
Heading	260°	(130°)
Speed	90kt	90kt
ACAS/TAS	Not fitted	Not fitted
Separation at CPA		
Reported	0ft V/<1NM H	0ft V/50-100m H
Recorded	0ft V/0.1NM H	



THE C152 INSTRUCTOR reported that they had been on a club check flight. [They] had requested a join for Redhill RW06 and had initially been cleared to Godstone VRP. Overhead Godstone they had been cleared to join left-hand downwind for RW06 and, while already at the circuit altitude of 1200ft QNH, they had positioned to join downwind. On entry to downwind their student had seen a DA20 aircraft very close on the left-hand side at the same level in their 9 o'clock position. The DA20 aircraft had been crosswind in the circuit. The C152 student pilot had initiated a right turn, as had the pilot of the DA20 aircraft. The DA20 pilot had informed ATC of the collision avoidance turn and then positioned behind them downwind. They opined that it had been difficult to see the circuit traffic prior to the encounter as they had been flying into the sun. They believed that there had been insufficient spacing between traffic and that they should have been told to orbit at Godstone before re-joining [so as] to increase separation or, at the very least, have been given Traffic Information on the [other] aircraft.

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

THE DA20 PILOT reported that, on completing their climb and on crosswind in the left-hand circuit of RW06 Redhill Aerodrome, they had seen a C152 converging on their position from the right at approximately 200ft from them [and at the] same level. They had banked right and notified the Tower controller that they were manoeuvring to avoid traffic. The response they had got was 'That aircraft should not be there' and that it 'had not reported Godstone (VRP) to the Tower.' They had responded by telling the Tower [controller] that they would have to continue a right-hand orbit to position behind the [C152]. They had then re-joined downwind with no further issues.

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

THE REDHILL CONTROLLER reports that the [DA20] pilot had been flying circuits at Redhill and the [C152] pilot had been returning from a local flight from the east. The [DA20 pilot], after a touch and go, had continued flying around the circuit and at the end of the crosswind leg [the DA20 pilot] in the circuit

had reported making an orbit for joining traffic, reporting [that they had been] orbiting for avoiding action. The C152 pilot had subsequently reported downwind and both aircraft had continued flying the circuit to land. They had not recalled giving the C152 pilot zone entry clearance and joining instructions from Godstone visual reporting point (VRP) and the flight progress strip (FPS) board had also indicated that the C152 pilot had yet to report at the joining VRP. The controller opined that if they had given joining clearance to the C152 [then] they had judged the Godstone report sufficiently time-wise in front of the circuit traffic so as to negate the need to pass Traffic Information, given the prevailing wind. The circuit [DA20] pilot had reported orbiting to avoid joining traffic on their crosswind leg, by which time there had been no further action required by ATC. The Godstone join is along a ridge to the northeast and is obscured by trees and ground from the visual control room (VCR), so any traffic that had been joining from this VRP was not visible until inside the circuit pattern. This report had been made without reference to the R/T recording.

Factual Background

The weather at Redhill was recorded as follows:

ATIS B 251650Z AUTO 08004KT 9999 NCD 10/M01 Q1018=

Analysis and Investigation

Redhill Investigation

Whilst joining left-hand downwind for RW06 the C152 had flown into conflict with the DA20 operating in the visual circuit.

The sequence of events was,

1626 The C152 departed for a local flight to the east leaving via Godstone Railway Station VRP.

1634 The DA20 had commenced taxiing for a circuit detail.

1645 The DA20 pilot had reported ready for departure.

1647 The C152 pilot had requested to rejoin.

1652 The DA20 had departed into the left-hand fixed-wing circuit on RW06.

1653 The C152 pilot had reported at Godstone and had been told to join left-hand downwind.

1654 The DA20 pilot had reported taking avoiding action.

1655 The C152 pilot had reported downwind.

Both [pilots] continued with their details without further incident.

RW06 is an asphalt runway marked on Taxiways C and D on the southside of the aerodrome; this runway is unlicensed as it does not meet the minimum width for a licensed runway. Standard paved runway markings as per CAP168 are displayed. The licensed grass runways had been unusable by fixed-wing aircraft due to soft ground and waterlogging, and NOTAMs had been issued closing them to fixed-wing aircraft. Runway 07R/25L remained available for use by helicopters.

The weather had not been a factor, with visibility at ten kilometres or more and there had been no clouds detected. There had been two Cat A helicopter departures in the lead-up to this incident and neither had required entry to controlled airspace or co-ordination with other ATC units. Nor had they required reorganisation of traffic within the ATZ.

The C152 [pilot] had been returning from a short local flight east of the aerodrome while the DA20 [pilot] had just departed into the left-hand visual circuit. The DA20 pilot had been given take-off clearance at 1651:46. The investigation had noted that, typically, light-aircraft are airborne within 30sec of commencing their take-off roll. At 1652:27 the Tower controller had given permission for [another aircraft] to backtrack RW06 to taxi to parking. The C152 pilot had reported at Godstone VRP at 1652:43.

The investigation further notes that a typical circuit flown to 06/24 takes between five and six minutes. The time from take-off to turning onto the downwind leg is between one and half and two minutes. Godstone VRP is approximately one nautical mile from the ATZ boundary and aircraft joining from there typically take approximately one minute to reach the ATZ boundary and, therefore, there is a possibility of conflict between circuit traffic and traffic joining downwind. ATCOs would normally hold aircraft at Godstone and sequence them into the visual circuit or the circuit traffic instructed to climb straight ahead until visual with the joining aircraft before positioning behind it.

The Redhill investigation concluded that it had been unfortunate that the unit had not been notified by the reporting pilot of this Airprox as this would have enabled the ATCO to provide a report while the events had been fresh in their mind. From the RTF recordings it had been clear that the ATCO had forgotten that they had given permission for the C152 [pilot] to enter the ATZ so soon after they had cleared the DA20 [pilot] to take-off. Then, for some unexplained reason, they had failed to move the C152's Flight Progress Strip into the circuit. Having told the C152 [pilot] to join downwind after the DA20 was airborne the ATCO should have provided Traffic Information to the C152 pilot on the DA20, or at least advised that the fixed-wing circuit was active. Believing that the C152 pilot had yet to report at the Godstone VRP, the ATCO had been surprised when the DA20 pilot had reported taking avoiding action. Having been informed that avoiding action had been taken by the DA20, the ATCO could have enquired with the pilots involved whether either would be filing an Airprox report.

UKAB Secretariat

An analysis of the radar replay showed that at 1652:50 the DA20 pilot had been climbing out from RW06 at Redhill at an indicated altitude of 500ft and the C152 pilot had been leaving the Godstone VRP, at an indicated altitude of 1200ft, to join the circuit left-hand downwind as cleared (Figure 1).

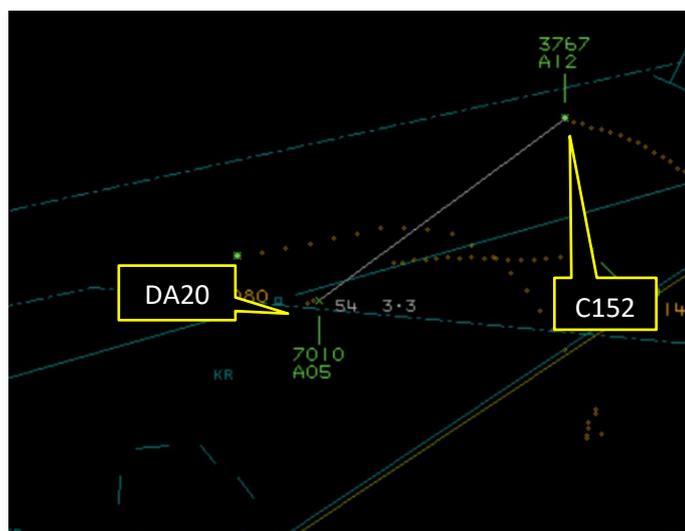


Figure 1 – 1652:50 positions of C152 and DA20 with 3.3NM separation.

At 1654:10 the C152 pilot had been joining left-hand downwind in the circuit for RW06 and the DA20 pilot was on the crosswind sector of the circuit (Figure 2).



Figure 2 – 1654:10 C152 joining downwind and DA20 crosswind with 0.4NM separation.

The closest point of approach had been at 1654:18 as the C152 pilot had joined downwind and the DA20 pilot had been completing their crosswind sector in the left-hand circuit for RW06 (Figure 3).

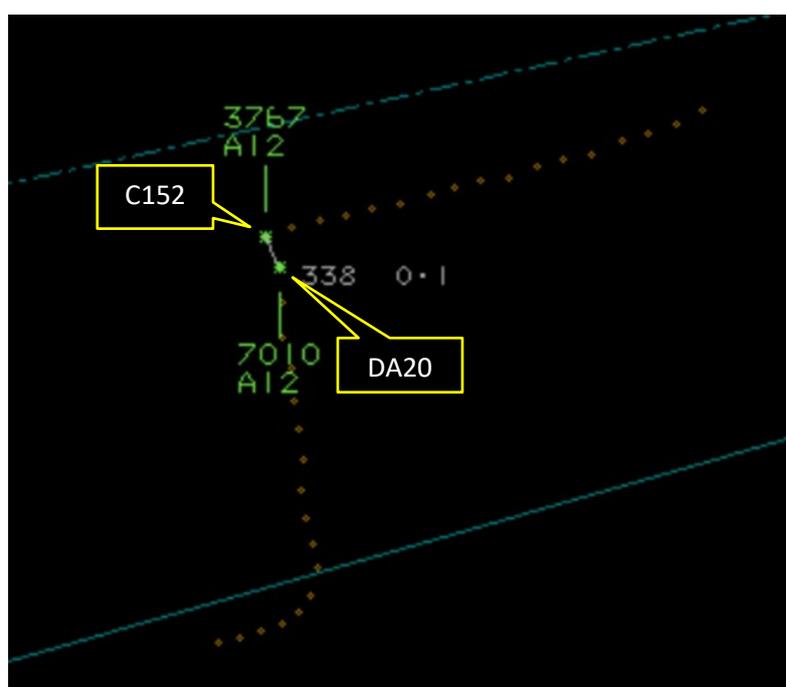


Figure 3 – 1654:18 CPA with 0.1NM separation.

At the point of CPA both pilots had reported manoeuvring to the right to avoid the other aircraft and the DA20 pilot had continued in a right-hand orbit to follow behind the C152 downwind.

The C152 and DA20 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

¹ (UK) SERA.3205 Proximity.

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

Summary

An Airprox was reported when a C152 and a DA20 flew into proximity in the Redhill aerodrome circuit at 1654Z on Tuesday 25th April 2023. Both pilots were operating under VFR in VMC, and both were in receipt of an ACS from Redhill Tower.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of reports from both pilots, radar photographs/video recordings, a report from the air traffic controller 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 DA20 pilot in their preparation for departure and considered why they had been unaware of the relative position of the C152 that had been cleared to join downwind from the VRP. The members contemplated that the DA20 pilot may have been distracted by their pre-departure procedures and missed cues from the ongoing ATC exchanges, and so agreed that they had only had generic situational awareness of the joining PA28 (**CF6**), and subsequently had therefore not assimilated the concomitant conflict information (**CF7**). Furthermore, the members agreed that although the DA20 pilot may have had an opportunity to acquire sight of the C152's position during the initial climb out, once the DA20 had been manoeuvred on to the crosswind position of the circuit, both the position of the raised wing and engine cowling would have obscured the DA20 pilot's view of the joining traffic (**CF9**).

Moving their attention to the actions of the C152 pilot, the Board discussed the benefits of the provision of a full ATC service to pilots, but debated whether that may have resulted in the pilots inadvertently relying too much on the service provided and less on the calls of other traffic on their frequency. In much the same way that the DA20 pilot had been unaware of the C152 pilot's radio calls, the members' conclusions were that the C152 pilot would have had generic awareness of the position of the DA20 (**CF6**) based on the DA20 pilot's radio calls but had not calculated the potential conflict (**CF7**), evidenced by the fact that they had not queried their own clearance with ATC.

The Board members acknowledged that the C152 pilot had been flying into sun and that the DA20 pilot's view had been obscured by their manoeuvre and agreed, therefore, that both pilots had achieved a late sighting on each other's aircraft (**CF8**) but that both had correctly moved away from the other..

Examining the actions of the Redhill controller, the Board was impressed by their understanding and calculations of average times of the aircraft departures and joins. However, they discussed the errors that had arisen and agreed that these had led to a loss of situational awareness on the part of the controller (**CF4**). The members debated that the controller may not have taken account of any extra time that may have been required for the departure of the DA20 due to the airfield conditions at the time and alternative runway in use, and that they could have asked the C152 pilot to orbit at the VRP instead of clearing them to join downwind (**CF5**). Members thought that the controller may have been distracted, as they had not passed Traffic Information to the C152 pilot on the departing DA20 (**CF2**), had lost situational awareness on the position of the C152 by not following FPS board procedures (**CF1**) and had therefore been unable to assimilate the likelihood of a conflict (**CF3**).

In determination of risk, members agreed that safety had been much reduced below the norm through the overall depletion of situational awareness of both pilots and the Redhill controller. All involved had been familiar with the local procedures, but loss of situational awareness with no Traffic Information being passed had led to a risk of collision and it had been the last-minute actions of both pilots that had meant the separation had not been less. As such, the Board assigned Risk Category B to this event.

PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK

Contributory Factors:

	2023063			
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
• 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	• Conflict Detection - Not Detected	An event involving Air Navigation Services conflict not being detected.	
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
5	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				
6	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
7	Human Factors	• Understanding/Comprehension	Events involving flight crew that did not understand or comprehend a situation or instruction	Pilot did not assimilate conflict information
• See and Avoid				
8	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
9	Contextual	• Visual Impairment	Events involving impairment due to an inability to see properly	One or both aircraft were obscured from the other
• Outcome Events				
10	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 **ineffective** because the Redhill controller had not moved the C152's Flight Progress Strip to indicate that its pilot had been cleared to enter the circuit.

Situational Awareness of the Confliction and Action were assessed as **ineffective** because no Traffic Information had been passed to either pilot on the other aircraft, and the Redhill controller had not been aware of the potential conflict as they had forgotten that they had cleared the C152 pilot to leave the VRP.

³ 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 **ineffective** because neither pilot had been aware of the position of the other aircraft.

See and Avoid were assessed as **partially effective** because of the late sighting by both pilots and the obscuration of the C152 from the DA20 caused by the position of the DA20’s wing and engine cowling during the left turn onto the circuit’s crosswind sector.

Airprox Barrier Assessment: 2023063		Outside Controlled Airspace					
Barrier	Provision	Application	Effectiveness				
			Barrier Weighting				
			0%	5%	10%	15%	20%
Ground Element	Regulations, Processes, Procedures and Compliance	✓	✗	[Red bar: 0% to 5%]			
	Manning & Equipment	✓	✓	[Green bar: 0% to 2.5%]			
	Situational Awareness of the Conflicion & Action	✓	✗	[Red bar: 0% to 15%]			
	Electronic Warning System Operation and Compliance	●	●	[Grey bar: 0% to 2.5%]			
Flight Element	Regulations, Processes, Procedures and Compliance	✓	✓	[Green bar: 0% to 10%]			
	Tactical Planning and Execution	✓	✓	[Green bar: 0% to 10%]			
	Situational Awareness of the Conflicting Aircraft & Action	⚠	✗	[Red bar: 0% to 20%]			
	Electronic Warning System Operation and Compliance	●	●	[Grey bar: 0% to 15%]			
	See & Avoid	⚠	⚠	[Yellow bar: 0% to 20%]			
Key:							
	Full	Partial	None	Not Present/Not Assessable	Not Used		
Provision	✓	⚠	✗	●			
Application	✓	⚠	✗	●	○		
Effectiveness	■	■	■	■	□		