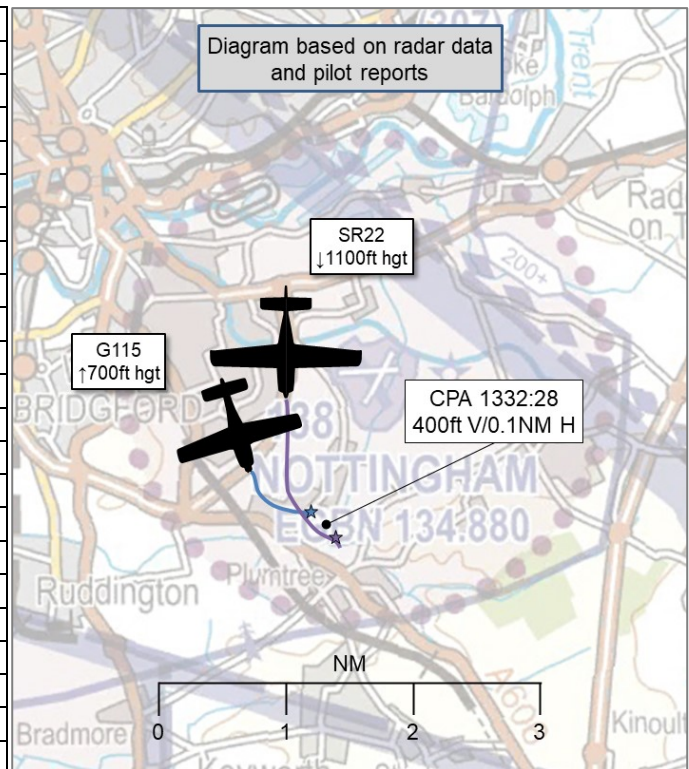


AIRPROX REPORT No 2021068

Date: 03 Jun 2021 Time: 1332Z Position: 5254N 00104W Location: Nottingham ATZ

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	G115	SR22
Operator	Civ FW	Civ FW
Airspace	Nottingham ATZ	Nottingham ATZ
Class	G	G
Rules	VFR	VFR
Service	AGCS	AGCS
Provider	Nottingham	Nottingham
Altitude/FL	700ft (height)	1100ft (height)
Transponder	A, C, S	A, C, S
Reported		
Colours	Silver, White	Blue, Silver
Lighting	Nav, Strobe	Nav, Landing
Conditions	VMC	VMC
Visibility	>10km	NR
Altitude/FL	650ft	1000ft
Altimeter	QFE (1014hPa)	QFE (NKhPa)
Heading	090°	180°
Speed	80kt	90-100kt
ACAS/TAS	Not fitted	GTS800
Alert	N/A	Information
Separation		
Reported	50-100ft V/0m H	300ft V/NK H
Recorded	400ft V/0.1NM H	



THE G115 PILOT reports that they were flying with a student. They were established in the circuit pattern for RW27 at Nottingham. After a touch-and-go, they had just reached the downwind leg, but were still climbing to the circuit altitude of 800ft. At that point a Blue Cirrus became visual in their 12 o'clock immediately above as it overtook. They estimate that the aircraft was 50-100ft above them and that, had the student climbed at the correct speed, a collision could have been expected. They made a call to the Nottingham Air/Ground operator (AGO) that the aircraft was 50ft above them. At the same time, they levelled off and slowed down to allow the aircraft to proceed ahead. At a later stage in the circuit, they stated that they would be submitting an Airprox report. There was no response from the other aircraft. They were aware that the other aircraft had reported that it was joining but they doubt that it had seen them.

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

THE SR22 PILOT reports that they made a standard overhead join onto the crosswind leg. From radio calls, they were aware that there was other circuit traffic and saw one aircraft downwind ahead of them and positioned to join behind. On crosswind, they passed about 150m upwind of the upwind threshold. During the turn onto the downwind leg, about 200ft above circuit height, they heard a radio call to 'aircraft downwind' saying the aircraft was 50ft below. They checked on the GTS800 and saw a return 300ft below and behind. They maintained their altitude and stopped their turn as they were unable to see the other aircraft. Just before turning onto base leg, and avoiding noise sensitive areas, they heard a radio call saying going around then another call saying the pilot will report an Airprox.

The pilot did not see the other aircraft therefore could not assess the risk of collision.

THE NOTTINGHAM AIRFIELD MANAGER requested that a report be submitted but the AGO chose not to submit a report.

Factual Background

The weather at East Midlands was recorded as follows:

METAR EGNX 031320Z 22010KT 9999 FEW024 BKN034 20/13 Q1018

Analysis and Investigation

UKAB Secretariat

The G115 pilot was climbing out from a touch-and-go to re-join downwind as the SR22 pilot was descending crosswind into downwind. CPA occurred when the aircraft were separated by 400ft vertically and 0.1NM horizontally (Figure 1). This is the closest point observed on the radar replay, it is after CPA that the SR22 pilot climbed slightly and the G115 pilot maintained their height prior to descending slightly.

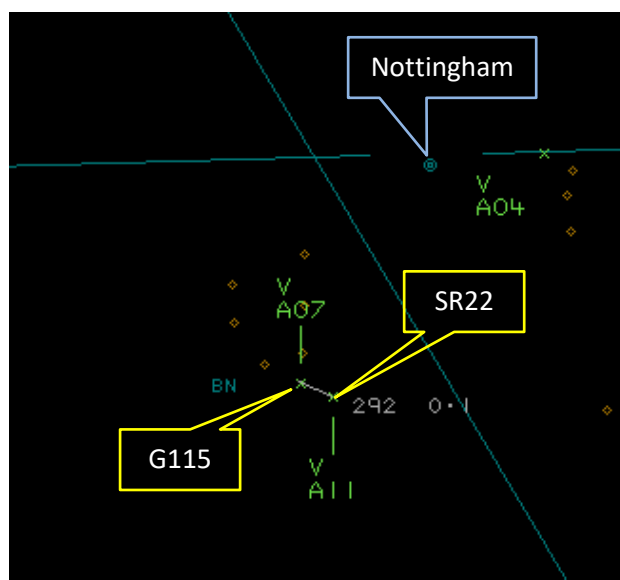


Figure 1: CPA 1332:28

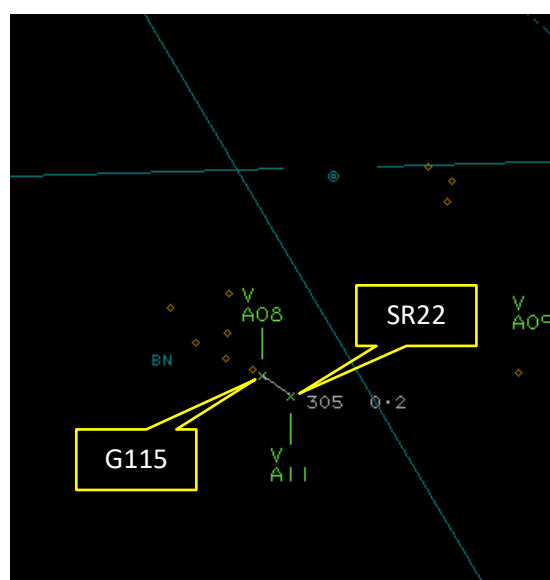


Figure 2: Post CPA 1332:35

The G115 and SR22 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 G115 and an SR22 flew into proximity within Nottingham ATZ at 1332Z on Thursday 3rd June 2021. Both pilots were operating under VFR in VMC, and both pilots in receipt of an Air/Ground Control service from Nottingham Radio.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of reports from both pilots and radar photographs/video recordings. 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.

¹ (UK) SERA.3205 Proximity.

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

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 first considered the actions of the G115 pilot. They were carrying out a circuit detail and had just turned onto the beginning of the downwind leg (from a touch-and-go) when they saw the SR22 appear over the top and just in front of their aircraft – this was at CPA (**CF6**). The Board agreed that the G115 pilot should have been able to gain generic situational awareness about the SR22 from its radio calls and could have used these to try to gain visual contact with it when it was deadside, turning crosswind. Regardless, it was for the SR22 pilot to integrate with the G115 which was already established in the traffic pattern (**CF2 & 4**). Board members agreed that the radio calls and lookout could have alerted the G115 pilot to the possible conflict but went on to note that because the SR22 was descending from the deadside to crosswind, and therefore was above the G115, the geometry would have served to reduce the G115 pilot's ability to see the SR22 (**CF6**).

Turning to the actions of the SR22 pilot, the Board agreed that the SR22 pilot did not see the G115 and it was a radio call which alerted them to its presence below them and prompted them to use their GTS800 (**CF5 & 7**). The SR22 pilot was joining to follow another aircraft which they had seen further down downwind. They did not appear to be aware of the G115 climbing into the downwind, although the Board members agreed that they should have had generic situational awareness based on the standard radio calls. This generic awareness could have been enhanced with a greater use of the GTS800 information to ascertain the positions of the traffic in the circuit (**CF4**). Using the GTS800 to guide a lookout could have also helped them acquire the G115 as it was climbing out and may have allowed them to position themselves more appropriately in the circuit. Additionally the SR22 pilot could have requested an update of the actual positions of the other aircraft, this would have enabled them to better assimilate the pattern of traffic already present (**CF3**). Members wondered why the SR22 pilot had flown the crosswind element wider than normal; it was believed that this was probably to allow them to sequence behind the aircraft further down the downwind leg, unfortunately this had brought them into conflict with the G115 as it was climbing out. The Board members then discussed the SR22 pilot's overhead join, specifically the crosswind element and they agreed that they should have been at circuit height before turning crosswind, rather than descending (**CF1**). This meant that the SR22 was still descending from crosswind as they entered downwind at the same time as the G115 was climbing (**CF2 & 8**) and hindered their ability to see it.

CAP413, Chapter 4, 4.7 states that:

4.7 The standard overhead join comprises the following.

- 1. Overfly at 2000 ft above Aerodrome Elevation.*
- 2. If not already known, determine the circuit direction from the signals square, other traffic or windsock.*
- 3. Descend on the 'dead side' to circuit height.**
- 4. Join the circuit by crossing the upwind end of the runway at circuit height.**
- 5. Position downwind.*

NOTE: Pilots should ensure they have checked beforehand whether specific joining procedures apply; otherwise an 'overhead join' (which actually takes a joining aircraft around the aerodrome) is the preferred method of joining the circuit pattern. Aerodromes where specific procedures apply will notify such differences in the UK AIP.

The Board were disappointed that the AGO did not file a report, but they noted that there is no regulation that would compel them to do so. Regardless, the Board agreed that a report from an AGO is very beneficial in providing additional information (where available) which allows Board members to make a more comprehensive assessment of the risk of collision and events leading up to the incident.

Finally, the Board considered the risk. The Board agreed that, because of the geometry of the aircraft, both pilots' lookout was slightly obscured (**CF8**) which resulted in the late sighting and non-sighting of the other aircraft. Members noted that the G115 pilot had reported the separation as 50-100ft. The radar recordings were reviewed and separation was 400ft at CPA, which was before the G115 pilot saw the SR22, because of this, and the SR22 pilot stopping their descent, the Board agreed that, whilst this was

not normal operations, there was no risk of collision. Accordingly, the Board assigned a Risk Category C to this Airprox.

PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK

Contributory Factors:

CF	Factor	Description	ECCAIRS Amplification	UKAB Amplification
2021068				
Flight Elements				
• Regulations, Processes, Procedures and Compliance				
1	Human Factors	• Use of policy/Procedures	Events involving the use of the relevant policy or procedures by flight crew	Regulations and/or procedures not complied with
• Tactical Planning and Execution				
2	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				
3	Human Factors	• Lack of Communication	Events involving flight crew that did not communicate enough - not enough communication	Pilot did not request additional information
4	Contextual	• Situational Awareness and Sensory Events	Events involving a flight crew's awareness and perception of situations	Pilot had no, late or only generic, Situational Awareness
• Electronic Warning System Operation and Compliance				
5	Contextual	• Other warning system operation	An event involving a genuine warning from an airborne system other than TCAS.	
• See and Avoid				
6	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
7	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
8	Contextual	• Visual Impairment	Events involving impairment due to an inability to see properly	One or both aircraft were obscured from the other

Degree of Risk: C.

Safety Barrier Assessment³

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

Flight Elements:

Regulations, Processes, Procedures and Compliance was assessed as **partially effective** because the SR22 pilot did not fly crosswind at circuit height from their standard overhead join.

Tactical Planning and Execution was assessed as **partially effective** because the SR22 pilot did not adequately conform with the pattern of traffic already formed at Nottingham.

Situational Awareness of the Conflicting Aircraft and Action were assessed as **partially effective** because both pilots had generic information about each other. The SR22 pilot did not request additional information about the position of the G115.

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

See and Avoid were assessed as **ineffective** because the SR22 pilot did not see the G115. The G115 pilot did not see the SR22 until after CPA. Both aircraft were obscured from the other due to the position of the other aircraft.

