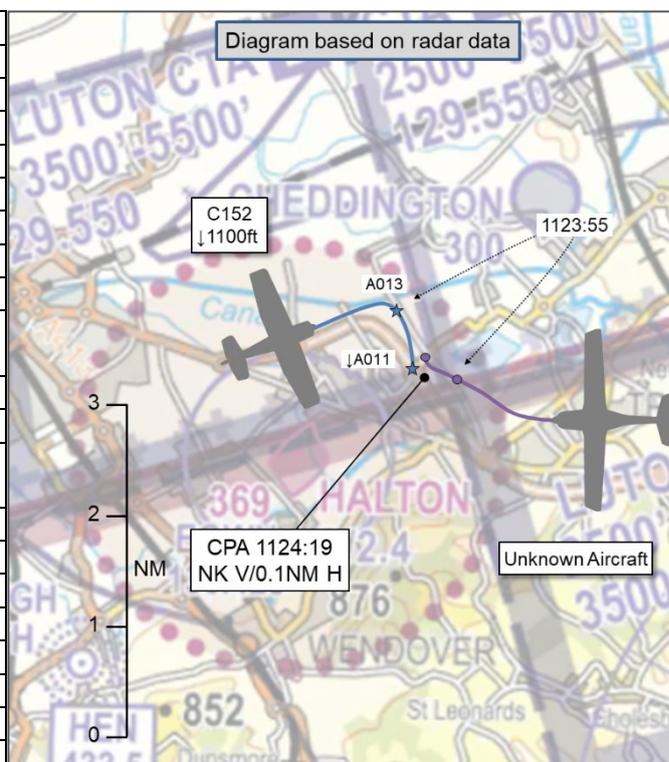


AIRPROX REPORT No 2021069

Date: 05 Jun 2021 Time: 1125Z Position: 5147N 00044W Location: Halton

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	C152	Unknown
Operator	Civ FW	Unknown
Airspace	Halton ATZ	Halton ATZ
Class	G	G
Rules	VFR	NK
Service	AGCS	Unknown
Provider	Halton	
Altitude/FL	1200ft	NK
Transponder	A, C, S	Not showing on radar
Reported		
Colours	Yellow, Blue	White
Lighting	Nav, Strobes, Beacon, Landing	
Conditions	VMC	
Visibility	>10km	
Altitude/FL	800ft agl	
Altimeter	QFE (1013hPa)	
Heading	160°	
Speed	70kt	
ACAS/TAS	SkyEcho2	Unknown
Alert	None	Unknown
Separation		
Reported	100ft V/100m H	NK
Recorded	NK V/0.1NM H	



THE C152 PILOT reports that the student was flying a first circuit sortie. On the 3rd circuit of the flight, the student had rolled out on base leg as per local procedures (and well within the Halton ATZ) and commenced a slow descent prior to turning final. Once established on heading, the instructor in the RH seat spotted another aircraft, opposite direction and approximately 100ft above. The instructor immediately took control and applied 45° AOB and increased ROD to generate adequate separation. The in-flight visibility was excellent. There were conjoint gliding ops at the airfield so the student was also concentrating on maintaining the published deconfliction from the gliders as well as their circuit parameters. The student did not see the other aircraft until pointed out by the instructor. No radio transmissions from the other aircraft were heard. Their aircraft was being followed in the circuit by a PA28; after the other pilot turned right (presumably to avoid the C152) they appeared to resume their previous track which placed them into conflict with the PA28 following in the circuit. The instructor in the Cessna warned other users of the presence of the other aircraft over the A/G frequency. The PA28 pilot will be filing a separate Airprox.

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

THE UNKNOWN AIRCRAFT could not be traced.

THE AIRFIELD MANAGER reports that they were supervising flying operations on RW25 (RH circuit for powered aircraft, LH circuit for winch-launched gliders). The PA28 was downwind and a C152 on base when the latter called "traffic entering zone". They acquired visual with the unannounced traffic (possibly a white DA40) and called "traffic flying the reciprocal path of downwind leg". It was likely to oppose the PA28 at around 1200ft and so they advised all to "be prepared to go around". They believed that [PA28 C/S] took positive avoiding action whilst [C152 C/S] committed to 'go-around' though in their estimation it would have been more appropriate to land and full stop rather than meet up again with the

errant traffic which had not yet left the zone. The unannounced traffic was not showing on FLARM and they were unable to refer to FlightRadar24 in time to locate the aircraft. They telephoned Luton ATC who in turn provided a number for NATS Swanwick, who advised that the unannounced traffic was probably VFR and not talking to Luton and at this time they could not help any further.

Factual Background

The weather at Luton was recorded as follows:

METAR EGGW 051120Z AUTO 28005KT 240V340 9999 SCT038 19/10 Q1024=

Analysis and Investigation

UKAB Secretariat

The unknown aircraft could not be traced, throughout it was visible on the NATS radars as a primary only track. It first appeared on radar at 1059z in the vicinity of Epping forest. After the Airprox it tracked WNW and disappeared from radar about 5min later. At 1123:51 (Figure 1), the unknown aircraft could be seen as a primary only contact, at 1.8NM from Halton and 1.1NM from the C152 turning onto base. The aircraft continued to track towards the C152 (Figure 2) and by 1124:14 (Figure 3) the C152 was in the 12 o'clock of the unknown aircraft at 0.2NM. At CPA (Figure 4) the unknown aircraft appeared to have turned right and passed 0.1NM behind the C152.

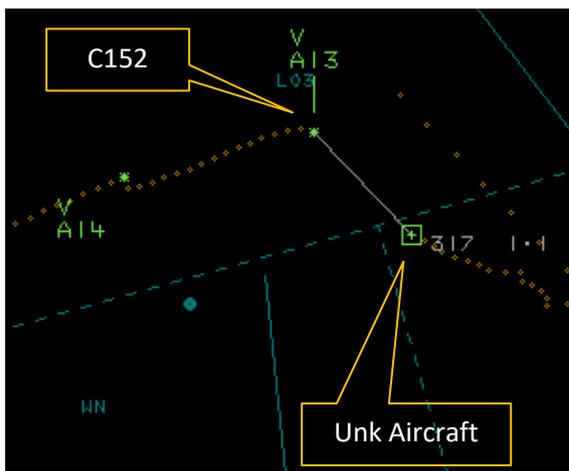


Figure 1: 1123:51 - 1.8NM from Halton

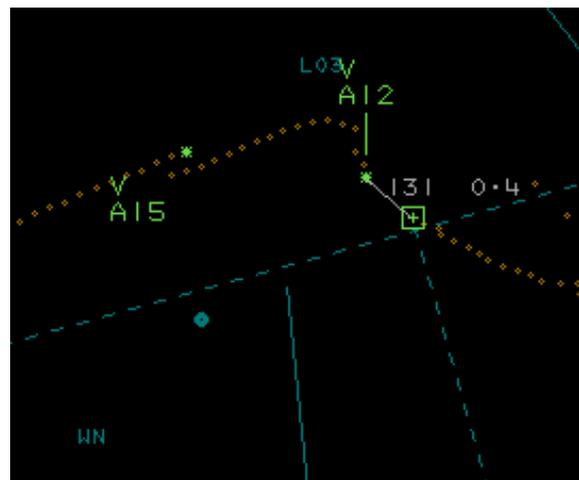


Figure 2: 1124:06

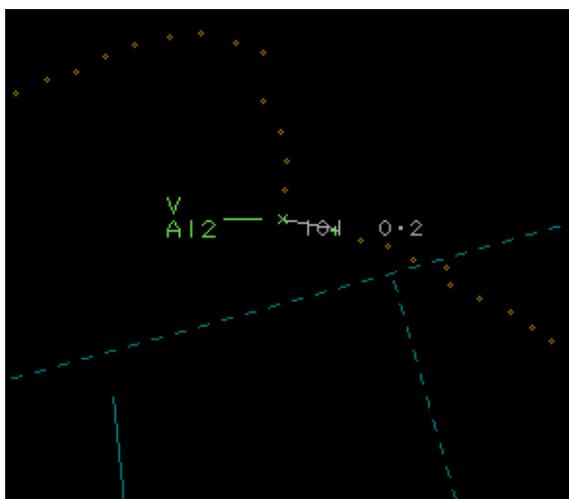


Figure 3: 1124:14

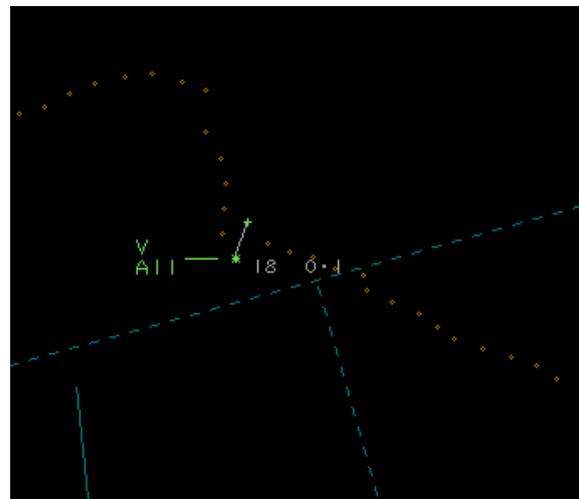


Figure 4: CPA 1124:18

The C152 and unknown aircraft 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 Rules of the Air Regulations 2015 Article 11, Flights within aerodrome traffic zones, states:

An aircraft must not fly, take off or land within the aerodrome traffic zone of an aerodrome unless the commander of the aircraft has complied with paragraph (5), as appropriate.

(5) If there is no flight information centre at the aerodrome the commander must obtain information from the air/ground communication service to enable the flight to be conducted safely within the aerodrome traffic zone.

(6) The commander of an aircraft flying within the aerodrome traffic zone of an aerodrome must—

(a) cause a continuous watch to be maintained on the appropriate radio frequency notified for communications at the aerodrome; or

(b) If this is not possible, cause a watch to be kept for such instructions as may be issued by visual means; and

(c) if the aircraft is fitted with means of communication by radio with the ground, communicate the aircraft's position and height to the air traffic control unit, the flight information centre or the air/ground communications service unit at the aerodrome (as the case may be) on entering the aerodrome traffic zone and immediately prior to leaving it.

Summary

An Airprox was reported when a C152 and an unknown aircraft flew into proximity in the Halton ATZ at 1124Z on Saturday 5th June 2021. The C152 pilot was operating under VFR in VMC, and in receipt of a AGCS from Halton. The unknown aircraft could not be traced.

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 first looked at the actions of the C152 pilot. They were conducting an instructional sortie and as they were on base and about to turn final, it was at a busy point in the cockpit for the student and for the instructor monitoring. The other aircraft was not on the Halton frequency and, because it was not squawking, the SkyEcho2 in the C152 did not detect it either, therefore prior to seeing it, the C152 pilot had no knowledge that it was in the vicinity (**CF4, CF5**). Members therefore thought that, although a late sighting (**CF6**), the instructor had done well to see the unknown aircraft approaching. Once sighted the C152 instructor was able to take effective avoiding action and had the presence of mind to alert the PA28 pilot behind them.

When discussing the actions of the unknown aircraft pilot, members were at a loss to know what the pilot was doing in flying directly through the Halton ATZ and into conflict with traffic in the circuit (**CF1, CF2**). They could only assume that the pilot had not suitably planned or was lost, nevertheless it was incumbent on them to remain clear of the ATZ and in flying as they did, they did not avoid or conform with Halton's pattern of traffic (**CF3**). By not calling Halton or any of the other obvious ATC units close by, it was assumed that the pilot had no knowledge that the Halton circuit traffic was there (**CF4**). It was not known whether the aircraft was fitted with a transponder, whether it was broken, or turned off intentionally, although members speculated that the aircraft was identified as a DA40 type, which was usually well equipped and would almost certainly had had a transponder fitted. Whatever the reason, because the transponder was not switched on the SkyEcho2 in the C152 could not detect it and thus rendered the electronic conspicuity barrier ineffective (**CF5**). The C152 pilot reported that it appeared

¹ (UK) SERA.3205 Proximity.

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

that the pilot of the unknown aircraft had also taken avoiding action, and this was backed up by the radar replay, however, in flying so close to the C152 in the visual circuit, the Board thought that it was likely that it had been a late sighting (**CF6**).

When determining the risk, the Board took into consideration the description of the incident by the C152 pilot and the separation shown on the radar replay. They discussed that the C152 pilot would not have been expecting to see conflicting traffic at that point in the visual circuit, especially given that Halton was protected by an ATZ. However, the C152 pilot had seen the traffic in time to take avoiding action, albeit late, and according to the radar and the C152 pilot's report, it appeared that the other pilot had too. That said, the pilot of the unknown aircraft had not called on any Halton frequency, was not squawking and was not receiving an ATS so prior situational awareness was not available and its intentions had been unknown. Taking all this into consideration, members agreed that safety had been much reduced; Risk Category B (**CF7**).

PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK

Contributory Factors:

	2021069			
CF	Factor	Description	ECCAIRS Amplification	UKAB Amplification
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	• Airspace Infringement	An event involving an infringement / unauthorized penetration of a controlled or restricted airspace.	E.g. ATZ or Controlled Airspace
3	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				
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	Technical	• ACAS/TCAS System Failure	An event involving the system which provides information to determine aircraft position and is primarily independent of ground installations	Incompatible CWS equipment
• 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
• Outcome Events				
7	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

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

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 were assessed as **ineffective** because the unknown aircraft flew through the ATZ and into conflict with the circuit traffic.

Tactical Planning and Execution was assessed as **ineffective** because the unknown aircraft flew into the promulgated and active ATZ.

Situational Awareness of the Conflicting Aircraft and Action were assessed as **ineffective** because the C152 pilot did not have any prior knowledge that the unknown aircraft was approaching.

Electronic Warning System Operation and Compliance were assessed as **ineffective** because the SkyEcho2 in the C152 could not detect the non-squawking unknown aircraft.

See and Avoid were assessed as **partially effective** because the C152 saw the other aircraft late, and was able to take avoiding action, and it was probable that the pilot in the unknown aircraft also took avoiding action.

