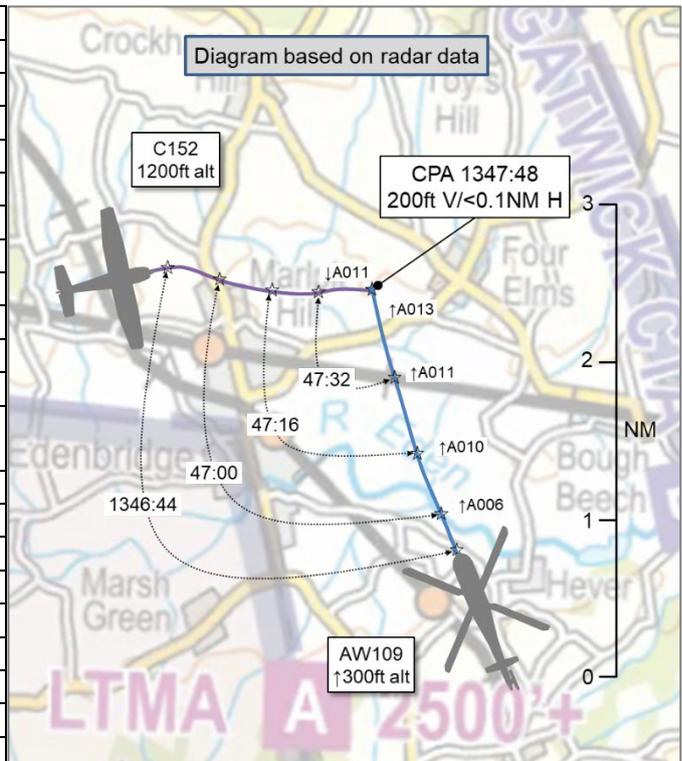


**AIRPROX REPORT No 2021053**

Date: 11 May 2021 Time: 1348Z Position: 5113N 00005E Location: 4NM NE of Lingfield

**PART A: SUMMARY OF INFORMATION REPORTED TO UKAB**

Recorded	Aircraft 1	Aircraft 2
Aircraft	AW109SP	C152
Operator	Civ Helo	Civ FW
Airspace	London FIR	London FIR
Class	G	G
Rules	VFR	VFR
Service	Basic	None <sup>1</sup>
Provider	Biggin Hill App	Farnborough LARS
Altitude/FL	A013	A011
Transponder	A, C, S	A, C, S
<b>Reported</b>		
Colours	Grey, red	Silver
Lighting	Strobes, anti-colls, nav, landing lights	Beacon, nav lights
Conditions	VMC	VMC
Visibility	>10km	NR
Altitude/FL	1400ft	1200ft
Altimeter	QNH (1007hPa)	QNH
Heading	335°	NR
Speed	135kt	NR
ACAS/TAS	TAS	Not fitted
Alert	TA	N/A
<b>Separation</b>		
Reported	20ft V/0NM H	NR V/NR H
Recorded	200ft V/<0.1NM H	



**THE AW109 PILOT** reports that shortly after lifting from a landing site near Hever Castle, they were making an RT call to Biggin Hill to establish an ATZ crossing and they saw a fixed-wing aircraft low and left, within 2-5sec it had passed underneath them at about 20-50ft below. No avoiding action was taken as there was too little time. The aircraft was blocked by their cockpit console and, they believe, being a high wing fixed-wing, the pilot would not have seen them. They were in a high workload section of their flight, having just lifted and trying to get airspace crossing approval at short notice. The low Gatwick airspace limit in conjunction with high ground in the area is a contributing factor as there is a narrow margin for Class G transit. There was no risk of collision, however, the margins were quite small.

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

**THE C152 PILOT** reports that they remember sighting a helicopter in the vicinity of Bough Beech reservoir at 1350 UTC on the 11th May. They had just departed [a local airfield] on a general handling flight. They cannot remember their exact location, they just remember being in the vicinity of Bough Beech reservoir, if RW26 or RW36 was in use then it would have been to the north of Bough Beech, if RW08 or RW18 was in use then it would have been south of Bough Beech as these are lanes they use to separate from inbound/outbound [local airfield] traffic. They recall seeing helicopter traffic at this time, but helicopter traffic in this area is very common. They don’t have a recollection of a specific Airprox, only sighting the other party. No avoidance action was required by them. If the other party involved has taken avoidance action then this was not witnessed by them. This is all that they can recall.

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

<sup>1</sup> The C152 pilot was between frequencies and had yet to agree an Air Traffic Service with the Farnborough controller at the time of the Airprox.

**THE BIGGIN HILL APPROACH CONTROLLER** reports that at the time of the incident they were the Approach (APP) controller at London Biggin Hill Airport and at no point did any pilot or air traffic agency report to them that an Airprox had occurred. They recall [the AW109 pilot] contacting them on the Biggin Approach frequency (129.405MHz), informing the controller that they had lifted from a private site in Edenbridge routing to a private site in Northampton requesting transit of the Biggin ATZ (south-to-north). [The C152 pilot] did not contact Biggin Approach and there was no other form of coordination from any other air traffic agency regarding this flight.

**THE REDHILL SATCO** reports they listened to the RTF recording and confirmed the following:

At **1340** [the C152] departed from RW18 on a local VFR flight to the east.

At **1344** [the C152 pilot] reported at Godstone Railway Station VRP (standard outbound VRP for eastbound departures). It was placed under a Basic Service.

At **1346** [the C152 pilot] reported at Edenbridge and changing frequency to Farnborough LARS East (123.225MHz).

At **1413** [the C152 pilot] re-established communication with Redhill ATC stating they had Information C (current ATIS) at Bough Beech Reservoir and requesting joining instructions. The aircraft was placed under a Basic Service and told to report at Godstone VRP (standard inbound routing).

At **1419** [the C152 pilot] reported at Godstone VRP. [The C152 pilot] was instructed to join left base for RW18.

[The C152 pilot] was not receiving a service from Redhill ATC at the time of this Airprox. The A109 did not work Redhill TWR on 11 May 2021. No mention of an Airprox was made to Redhill ATC either by RTF or telephone. They have spoken with the ATCO on duty who has no recollection of any Airprox being reported to them.

**THE FARNBOROUGH ATC GENERAL MANAGER** reports that, at the time of notification, the RTF/Radar replay had been overwritten. However, their Electronic Flight Strips recording goes back much further and, as such, they have determined that [the C152 pilot] was under a Basic Service with Farnborough from 1348Z until 1412Z. It should be noted that the actual times may differ from these, as these times are when the controller created the strip and entered the information; however, this activity is generally completed as soon as the aircraft is speaking to ATC.

## Factual Background

The weather at Gatwick and Biggin Hill airports was recorded as follows:

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METAR EGKK 111350Z 21012KT 170V240 9999 SCT038 15/05 Q1007=
METAR EGKB 111350Z 19015KT 170V230 9999 SCT040 15/05 Q1007=
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## Analysis and Investigation

### UKAB Secretariat

An analysis of the NATS radar replay was undertaken, which showed the C152 tracking in an easterly direction at 1200ft ( $\pm$ 100ft). The first radar detection of the AW109 was at 1346:44 after the pilot had lifted from the landing site in the vicinity of Hever Castle (Figure 1). Both aircraft were tracked on primary and secondary radar. The AW109 could be seen to climb on a north-north-westerly track from 300ft (at initial radar detection) to 1300ft (at CPA).

At 1347:44 the transponder code of the AW109 was seen to change from 7000 (General Conspicuity) to 7047 (TC Thames (Biggin Hill Airport Conspicuity)). CPA occurred one radar sweep later, at 1347:48 (Figure 2), and was measured at 200ft V and <0.1NM H.



Figure 1 – 1336:44

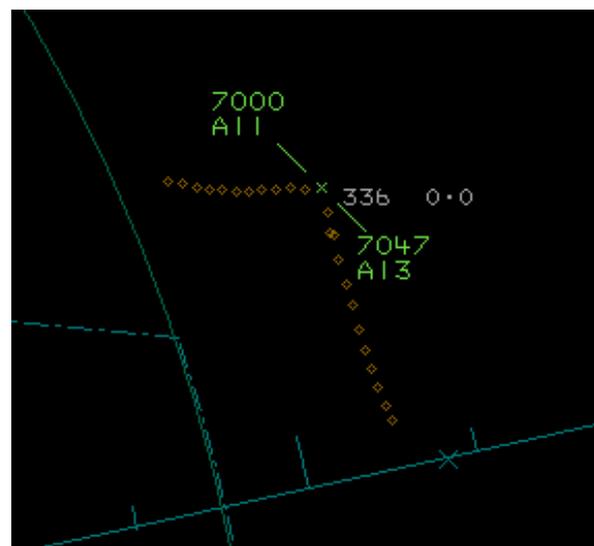


Figure 2 – 1347:48 – CPA

The AW109 and C152 pilots shared an equal responsibility for collision avoidance and not to operate in such proximity to other aircraft as to create a collision hazard.<sup>2</sup> If the incident geometry is considered as converging then the C152 pilot was required to give way to the AW109.<sup>3</sup>

## Summary

An Airprox was reported when an AW109 and a C152 flew into proximity 4NM NE of Lingfield at 1348Z on Tuesday 11<sup>th</sup> May 2021. Both pilots were operating under VFR in VMC, the AW109 pilot in receipt of a Basic Service from Biggin Hill Approach and the C152 pilot in the process of agreeing a Basic Service with Farnborough LARS East.

## 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 ATC/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 considered the actions of the AW109 pilot and heard from a helicopter pilot member with experience of operating in the area in which the Airprox took place. Members heard that this is invariably very busy airspace with multiple possible ATC agencies, so there is not always the opportunity for pilots to be on the same frequency. At the time of the Airprox, the AW109 pilot had been in contact with the Biggin Hill Approach controller, though the Board acknowledged that the AW109's transponder code had only changed to the Biggin Hill conspicuity code very shortly before CPA and so members considered it likely that the helicopter pilot had only just contacted the Biggin controller. The Board agreed that the AW109 pilot had only had generic situational awareness of the presence of the C152, gained from their on-board TAS equipment (**CF2, CF3**), and had been relying mostly on their lookout to avoid other aircraft during a period of high workload. Members noted from the pilot's report that their lookout had been compromised in the direction from which the C152 had been approaching by the AW109's structure and cockpit console, and considered that this had been contributory to the AW109 pilot's late sighting of the C152 (**CF4, CF6**).

<sup>2</sup> (UK) SERA.3205 Proximity.

<sup>3</sup> (UK) SERA.3210 Right-of-way (c)(2) Converging.

Turning to the actions of the C152 pilot, a GA pilot member informed the Board that this would also have been a high workload phase of flight for the Cessna pilot, with a number of considerations in terms of controlled airspace and other areas to avoid. Furthermore, they had also been in the process of contacting Farnborough LARS to agree an Air Traffic Service which, at the time of the Airprox, had yet to be achieved. The Board considered that, with no additional electronic conspicuity equipment on the C152 and not yet in receipt of an Air Traffic Service, the pilot had not had any means by which they could have gained situational awareness of the presence of the AW109 (CF2). This had left them relying upon the See and Avoid barrier to detect any threats to their aircraft, and the Board noted that they had reported sighting a helicopter but that it had not been a noteworthy encounter for them. The UKAB Secretariat confirmed to the Board that there had been no other radar contacts in the area at that time that could have been a different helicopter, and so members wondered if the C152 pilot had become accustomed to reduced separation between aircraft flying under VFR in this area. The Board concluded that the C152 pilot had in fact seen the AW109, but at the point at which it had passed overhead which had been too late for them to materially affect the separation (CF5). Furthermore, given the geometry of the incident and the C152's high wing, the Board also considered that the C152 pilot's lookout in the direction of the AW109 had also been compromised by the aircraft's structure (CF6).

The Board then considered the actions of the Biggin Hill Approach controller and noted that they had not been required to monitor the AW109's flight under the terms of a Basic Service (CF1). The Board also agreed that, with no surveillance equipment available to them and with the C152 pilot not on their frequency, there was nothing that the Biggin Hill Approach controller could have done to assist the AW109 pilot.

Finally, the Board considered the risk involved in this encounter. Members took into account both pilots' assessment of the risk of collision and the data from the NATS radar replay. Members quickly agreed that there had been a risk of collision (CF7), but there was some discussion over whether the separation achieved had been entirely fortuitous or if either pilot had influenced the separation in some way. The Board concluded that neither pilot had had the time to manoeuvre their aircraft to increase the separation and that safety had not been assured, and that the vertical and horizontal separation between the 2 aircraft represented a situation where safety had been much reduced. Accordingly, the Board assigned a Risk Category B to this event.

## **PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK**

### Contributory Factors:

	2021053			
CF		Description	ECCAIRS Amplification	UKAB Amplification
<b>Ground Elements</b>				
<b>• Situational Awareness and Action</b>				
1	Contextual	• ANS Flight Information Provision	Provision of ANS flight information	The ATCO/FISO was not required to monitor the flight under a Basic Service
<b>Flight Elements</b>				
<b>• Situational Awareness of the Conflicting Aircraft and Action</b>				
2	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
<b>• Electronic Warning System Operation and Compliance</b>				
3	Contextual	• Other warning system operation	An event involving a genuine warning from an airborne system other than TCAS.	
<b>• See and Avoid</b>				
4	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
5	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
6	Contextual	• Visual Impairment	Events involving impairment due to an inability to see properly	One or both aircraft were obscured from the other

• 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 Assessment<sup>4</sup>

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

**Ground Elements:**

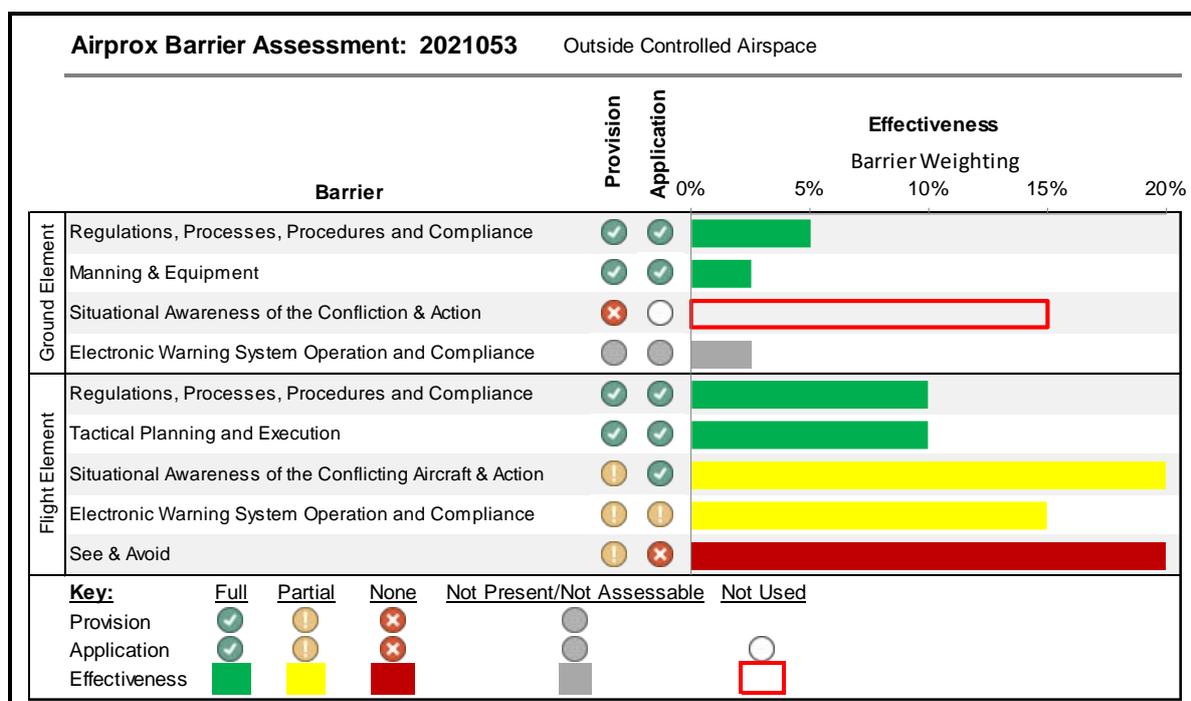
**Situational Awareness of the Confliction and Action** were assessed as **not used** because the Biggin Approach controller was not required to monitor the AW109 under the terms of a Basic Service.

**Flight Elements:**

**Situational Awareness of the Conflicting Aircraft and Action** were assessed as **partially effective** because the AW109 pilot had only generic situational awareness of the presence of the C152 (gained from their TAS equipment), and the C152 pilot had no situational awareness of the presence of the AW109.

**Electronic Warning System Operation and Compliance** were assessed as **partially effective** because the AW109 pilot utilised the TAS indications to cue their lookout without manoeuvring their aircraft to break the confliction.

**See and Avoid** were assessed as **ineffective** because the AW109 pilot sighted the C152 late and with insufficient time to take any avoiding action, and the C152 pilot most likely did not see the AW109.



<sup>4</sup> The UK Airprox Board scheme for assessing the Availability, Functionality and Effectiveness of safety barriers can be found on the [UKAB Website](#).