

AIRPROX REPORT No 2021016

Date: 14 Mar 2021 Time: 1139Z Position: 5124N 00021E Location: 8NM NE Biggin Hill

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	AW169	SR22
Operator	HEMS	Civ FW
Airspace	London FIR	London FIR
Class	G	G
Rules	VFR	VFR
Service	Traffic	Basic
Provider	Thames Radar	Biggin Hill
Altitude/FL	1800ft	2200ft
Transponder	A, C, S	A, C, S
Reported		
Colours	White, Blue	White
Lighting	Strobes, HISLs	Strobes
Conditions	VMC	VMC
Visibility	>10km	>10km
Altitude/FL	2000ft	2096ft
Altimeter	QNH	NK
Heading	360°	270°
Speed	100kt	140kt
ACAS/TAS	TCAS II	TAS
Alert	RA	TA
Separation		
Reported	200ft V/1NM H	1000ft V/1NM H
Recorded	400ft V/0.4NM H	



THE AW169 PILOT reports that they were receiving vectors under a Basic Service from Thames Radar in VMC for a training VOR/DME approach at Biggin Hill. A TCAS contact was identified in the aircraft's 1 o'clock at 5NM and 400ft above with a descending trajectory. The crew looked in the direction of the contact and were able to visually acquire it by which time it was at 3-4NM on a constant bearing and now showing 300ft above, still on a descending trajectory. The crew noted that the aircraft was likely to get close enough to cause a TA and, probably, also an RA. Noting that the conflicting aircraft had right of way, the crew elected to make a small adjustment in course to the right in order to increase lateral separation in accordance with national procedures. On making this turn, ATC advised an upgrade to Traffic Service and directed a vectoring left turn onto a westerly track. At this point TCAS declared an RA with the command 'DESCEND DESCEND'. The PF initiated a descent in accordance with the TCAS RA and the PM advised Thames that they could not comply due TCAS RA. After a descent of approx 300ft, TCAS declared clear of conflict and the aircraft was levelled. Thames was informed that they were clear of conflict and further ATC direction was followed to complete vectoring for the approach. The Thames controller stated that they believed that the conflicting traffic was 400ft above them.

The pilot assessed the risk of collision as 'None'.

THE SR22 PILOT reports that on their return to base they requested and obtained clearance from Biggin Approach to transit overhead not below 2000ft. On reporting overhead they were requested to report 'north abeam Kenley - which could be active.' At 11:45Z they were on the edge of the Biggin ATZ, according to their Skydemon log. They did not recall hearing any radio transmission from any other aircraft. At about this time the aircraft Traffic system announced another aircraft close by and they were able to see the aircraft, which appeared to be a helicopter, well below, ahead and well to the right [they recalled]. The aircraft appeared to be passing well clear with no potential conflict. After passing Kenley they requested frequency change to Farnborough West. They had no knowledge of an alleged Airprox until receiving the Airprox Board email.

The pilot assessed the risk of collision as 'None'.

THE THAMES RADAR CONTROLLER reports that the AW169 was being vectored for an ILS approach into Biggin Hill under a Traffic Service, maintaining 2000ft. Traffic wearing a Biggin squawk was spotted east of London City CTR tracking south west at 2400ft, verified on the phone by the Biggin controller. Traffic Information was passed to [the AW169 pilot] who reported visual with the traffic. A left turn for base given to the AW169 to pass under the Biggin traffic but a TCAS RA was declared and a descent observed. [The AW169 pilot] declared clear of traffic and the approach was completed. The AW169 was in Class G airspace and so no avoiding action was given, considering the pilot reported visual with the contact and there was a confirmed level report from Biggin Hill.

THE BIGGIN HILL SATCO reports that the controller was not aware that an Airprox had been reported, no reference was made on the frequency or landline at the time.

Factual Background

The weather at Biggin Hill was recorded as follows:

METAR EGKB 141120Z 28012KT 240V320 9999 SCT031 08/02 Q1015=

Analysis and Investigation

UKAB Secretariat

The AW169 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 If the incident geometry is considered as head-on or nearly so then both pilots were required to turn to the right.² If the incident geometry is considered as converging then the AW169 pilot was required to give way to the SR22.³

Occurrence Investigation

NATS Investigation

Thames Radar and the Heathrow Special VFR positions were being operated in a banded configuration. The R/T loading was described by the Thames Radar controller as being manageable.

The pilot of [AW169 C/S] called onto the Thames Radar frequency at 1130:26 (all times UTC) and was provided with a Basic Service. The pilot requested a VOR/DME approach into Biggin Hill. The controller agreed with the pilot that a Basic Service would be provided initially, which would later be upgraded to a Traffic Service in order to conduct the approach. The flight was conducted outside controlled airspace, in Class G airspace.

At 11:34:33 the Thames Radar controller asked the pilot of [AW169 C/S] if they had good visibility, to which the pilot responded in the affirmative. The controller then requested at 1135:55 that the pilot started to route northbound and advised that a service could be provided once clear of the area around Wrotham Mast. The pilot reported turning heading 360°. The controller responded, "*Roger, it is still a Basic Service under your own navigation and as soon as I can I'll give you Traffic Service under vectors*". The pilot reported, "*Basic Service and all copied.*"

The Cirrus SR22, was operating VFR outside controlled airspace. Having previously been in receipt of a Basic Service from Southend ATC, the pilot contacted Biggin Hill ATC for further service. At 1138:13 the aircraft displayed Mode-A code 7047, the Biggin Hill conspicuity squawk. The Thames

¹ SERA.3205 Proximity.

² SERA.3210 Right-of-way (c)(1) Approaching head-on.

³ SERA.3210 Right-of-way (c)(2) Converging.

Radar controller advised the pilot [AW169 C/S] at 1138:33 to maintain 2000ft, and provided Traffic Information relating to [the SR22]. The pilot of [AW169 C/S] reported visual with the traffic (Figure 1).

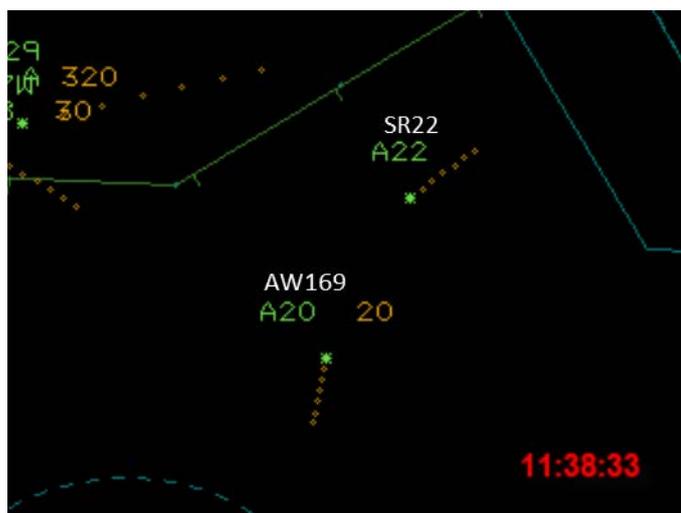


Figure 1

The Thames Radar controller upgraded the service provided for [AW169 C/S] to a Traffic Service and instructed the pilot to turn left heading 280°. The pilot read back this instruction and acknowledged the provision of a Traffic Service. Immediately following this, the Thames Radar controller telephoned Biggin Hill ATC relating to [the AW169] and the interaction with [the SR22]. The controller's report reported that the Thames Radar controller 'gave the heading turn to [AW169 C/S] for left base into EGKB to pass underneath the traffic given.'

Whilst speaking to the Biggin Hill controller, at 1138:52 the pilot of [AW169 C/S] reported "unable to comply due to TCAS RA, levelling now". There was no response from the Thames Radar controller, indicating that this may not have been heard due to the telephone conversation taking place at the time of the event. The controller's report stated that 'the controller did not give avoiding action as the aircraft were both outside controlled airspace in Class G and in addition the [AW169 C/S] had reported visual with the traffic.' The closest point of approach between [the AW169] and [the SR22] occurred at 1139:06 and was measured on Multi-Track Radar as 0.4NM and 400ft (Figure 2).



Figure 2

The pilot of [the AW169 C/S] reported clear of conflict at 1139:15 and turning left heading 280°. Safety Investigations commissioned a TCAS Analysis surrounding this event, which provided the following timings and TCAS instructions provided to the pilot of [AW169 C/S].

Date	Message Start Time	Callsign	ModeC	RA Type	Advisory Code
2021-03-14	11:38:51		20	Corrective	Descend
2021-03-14	11:39:03		18	Corrective	Limit Climb
2021-03-14	11:39:11		18	Corrective	Clear of Conflict

There were no separation requirements between the two aircraft. The incident was resolved by the TCAS RA increasing the vertical distance between the two aircraft.

Summary

An Airprox was reported when an AW169 and an SR22 flew into proximity 8NM NE Biggin Hill at 1139Z on Sunday 14th March 2021. Both pilots were operating under VFR in VMC, the AW169 pilot in receipt of a Traffic Service from Thames Radar and the SR22 pilot in receipt of a Basic Service from Biggin Hill.

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 considered the actions of the AW169 pilot. They were receiving a Traffic service from Thames Radar and had been given Traffic Information on the SR22. Furthermore, they could see the SR22 on their TCAS, and suspected that it might trigger an alert. Although they adjusted their track slightly, in the end it wasn't enough to prevent the RA (**CF2**), which the pilot followed accordingly. Members were sympathetic to the predicament that the pilot was in, they wanted to follow ATC instructions and turn towards Biggin Hill, but the position of the SR22, meant that the TCAS RA was likely. They could only offer that with hindsight, a further turn behind or a descent to increase the separation may have prevented the TCAS alert. Once it alerted, the pilot had no option but to follow the RA, but members agreed that ultimately, the TCAS was developed for use within controlled airspace and as such would always present problems for those operating in Class G taking visual separation.

The Board briefly looked at the actions of the SR22 pilot, they were transiting through the Biggin Hill overhead and so called Biggin Hill ATC. They had information on the AW169 from their TAS (**CF3**), were visual with it and were not concerned by the proximity.

Turning to the Thames Controller, members agreed that there was little more the controller could have done in the circumstances. They had passed Traffic Information, to which the AW169 pilot had called visual, and contacted Biggin Hill for further information once the SR22's squawk change indicated that the pilot had called them. Members were told that the Short Term Conflict Alert (STCA) on Thames Radar had a filter that would not alert for aircraft wearing certain squawks, including those in this Airprox, because, being in Class G, there was a high chance of spurious alerts, and a frequent alert would be a distraction to controllers (**CF1**). Members discussed whether this had a bearing on the Airprox, but were told by the NATS advisor that the geometry and vertical separation was such that the STCA may not have activated anyway. Given that the AW169 was receiving a Traffic Service, had been given Traffic Information and reported visual, members agreed that the STCA would not have made any difference on this occasion.

Finally, when determining the risk, members assessed that because both pilots were visual with each other, both had received CWS alerts and ATC had provided Traffic Information, there had been no risk of collision and normal safety standards had pertained; Risk Category E.

PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK

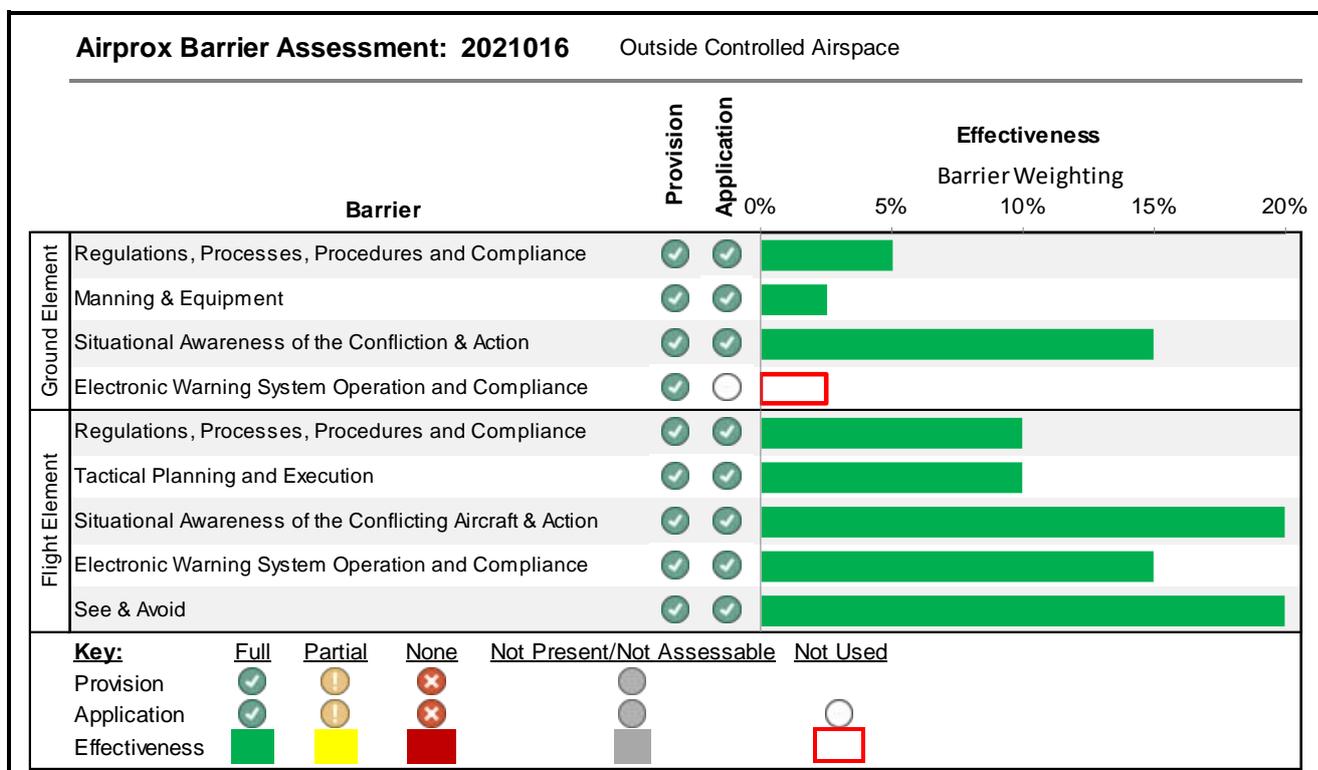
Contributory Factors:

2021016				
CF	Factor	Description	ECCAIRS Amplification	UKAB Amplification
Ground Elements				
x	• Electronic Warning System Operation and Compliance			
1	Technical	• Conflict Alert System Failure	Conflict Alert System did not function as expected	The Conflict Alert system did not function or was not utilised in this situation
Flight Elements				
x	• Electronic Warning System Operation and Compliance			
2	Contextual	• ACAS/TCAS RA	An event involving a genuine airborne collision avoidance system/traffic alert and collision avoidance system resolution advisory warning triggered	
3	Contextual	• Other warning system operation	An event involving a genuine warning from an airborne system other than TCAS.	

Degree of Risk: E.

Safety Barrier Assessment⁴

In assessing the effectiveness of the safety barriers associated with this incident, the Board agreed that all the safety barriers had functioned effectively.



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