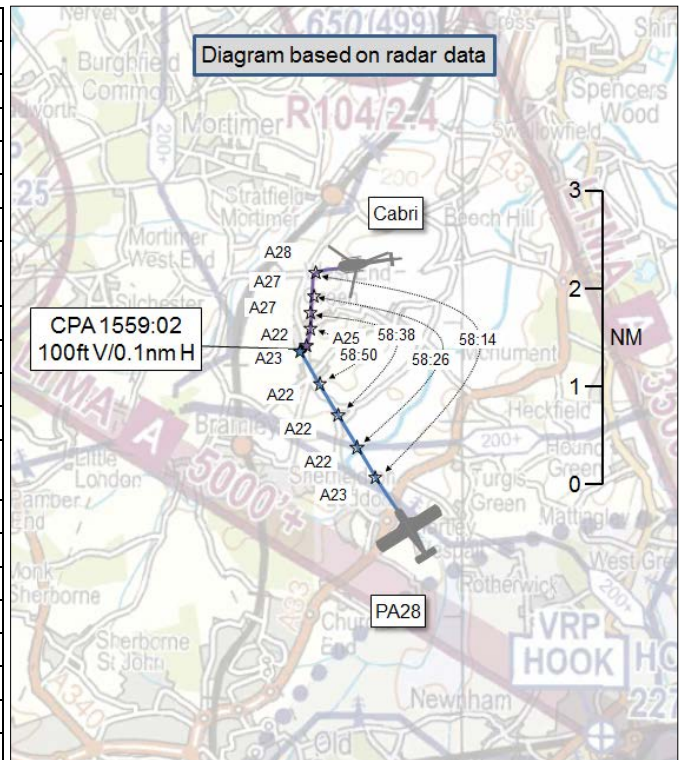


AIRPROX REPORT No 2017113

Date: 14 Jun 2017 Time: 1600Z Position: 5121N 00102W Location: 7nm NW Blackbushe airport

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	PA28	Cabri G2
Operator	Civ Club	Civ Trg
Airspace	London FIR	London FIR
Class	G	G
Rules	VFR	VFR
Service	Basic	Basic
Provider	Farnborough Approach	Farnborough LARS
Altitude/FL	2300ft	2200ft
Transponder	A,C,S	A,C,S
Reported		
Colours	Red, white, blue	Blue and silver
Lighting	Strobe on, nav off	Strobe, nav
Conditions	VMC	VMC
Visibility	>10km	NK
Altitude/FL	2200ft	NK
Altimeter	QNH (1015hPa)	NK
Heading	320°	NK
Speed	105kt	NK
ACAS/TAS	Not fitted	Not fitted
Separation		
Reported	50ft V/100m H	NK
Recorded	100ft V/0.1nm H	



THE PIPER PA28 CHEROKEE PILOT reports that he was tracking towards Compton VOR between the Aldermaston and Burghfield restrictions, in clear conditions, cloud few at ~3500ft, using the visual reference of a large white water-tower in a wooded area in the vicinity of Mortimer. He sighted a JetRanger helicopter approximately co-altitude, head on aspect, at about 45° to starboard. He did not recollect consciously thinking about it but immediately called an Airprox to Farnborough Radar. Something about the geometry and relative distance and closure did not appear normal; he remarked to a passenger that he believed that it was a model rather than an actual helicopter. He believed that the relative motion was primarily his own, and that the other vehicle was moving very slowly. Soon after the initial sighting, the other vehicle was completely obscured by his starboard wing. His passenger subsequently stated that he had it in sight behind and to the right, path diverging. On previous occasions when flying to Blackbushe he had observed large model aircraft flying in this vicinity but always significantly below, even when he was low and descending to circuit height. The Farnborough Controller asked if they wished to continue the flight or to return to base. He answered that they were fine and would continue. The flight progressed without further incident.

He assessed the risk of collision as 'Medium'.

THE GUIMBAL CABRI G2 HELICOPTER PILOT reported that he was not aware of the Airprox at the time; he had not seen the other aircraft. Consequently, he could not provide any details of the incident.

THE FARNBOROUGH APPROACH RADAR CONTROLLER reports that the PA28 pilot had departed Farnborough on his own navigation to the west, remaining outside controlled airspace. On first call, he identified the aircraft and requested what service the pilot requested. He requested a Basic Service, which was agreed. A short while later he was aware of a 0441 squawk being worked

by his colleague on LARS West, which was indicating 2700ft on Mode C. At the time the PA28 was indicating 2100ft on Mode C so he did not consider there to be a definitive risk of collision resulting in a need to provide Traffic Information to the PA28 pilot. A short while afterwards, a pilot called to advise he wished to file an Airprox. He established this was the PA28 pilot and looked at the radar. At this point he observed the 0441 squawk passing behind the PA28 at a similar level. He acknowledged the request, confirmed that he would raise a report, and suggested the pilot also put paperwork in on landing.

Factual Background

The weather at Farnborough was recorded as follows:

EGLF 141550Z 14009KT 040V200 CAVOK 24/12 Q1015=

Analysis and Investigation

CAA ATSI

ATSI had access to reports from the PA28 pilot and the Farnborough Approach air traffic controller. The local unit investigation was also obtained. The area radar and radio recordings were also reviewed. Screenshots produced in this report are provided using recordings of the Swanwick MRT Radar. Levels indicated are in altitudes. All times UTC. The PA28 (P28A - code 0421) was on a VFR local flight from Farnborough in receipt of a Basic Service from Farnborough Approach. The Cabri G2 (G2CA - code 0441) was on a VFR local flight from Blackbushe in receipt of a Basic Service from Farnborough LARS West.

The PA28 pilot departed from Farnborough at 1550 and, at 1552:39, called the Farnborough Approach Controller; a Basic Service was agreed. The PA28 pilot reported climbing to 2000ft. The SSR code of 0421 had been assigned by Farnborough Tower prior to the aircraft departing Farnborough.

At 1557:15 (Figure 1), following an initial request to standby, two-way communication was established between the Farnborough LARS West controller and the Cabri G2 pilot. A Basic Service was agreed. The pilot reported climbing to 3000ft and a code of 0441 was assigned (which appeared on radar approximately 45 seconds later).

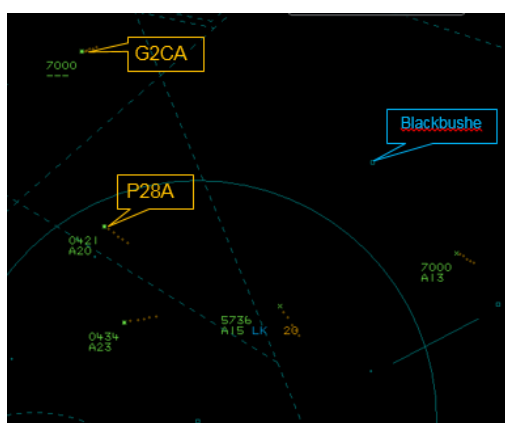


Figure 1 - 1557:15.

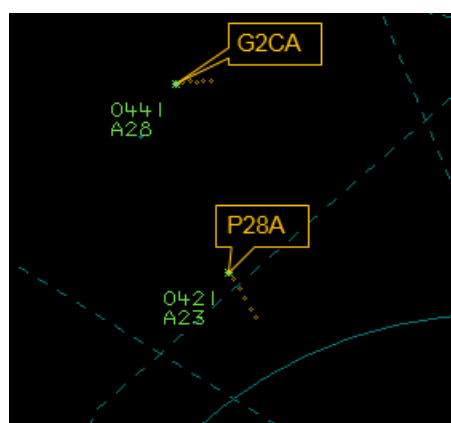


Figure 2 - 1558:16.

At 1558:16, according to the Farnborough unit report, the Short Term Conflict Alert (STCA) activated. The area radar recording (Figure 2) indicated that the aircraft were on converging tracks, with the Cabri G2 in level flight at 2800ft and the PA28 at 2300ft.

At 1558:31 the STCA alert on the Farnborough Radar stopped. The PA28 indicated 2200ft and the Cabri G2 indicated 2700ft. The Cabri G2 pilot had just commenced a turn to the south.

At 1558:51, (Figure 3), the STCA activated again on the Farnborough Radar. The Cabri G2 indicated 2500ft and the PA28 indicated 2200ft.

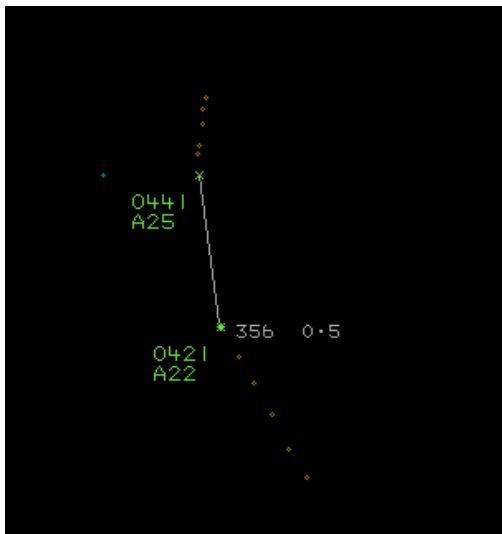


Figure 3 – 1558:51.

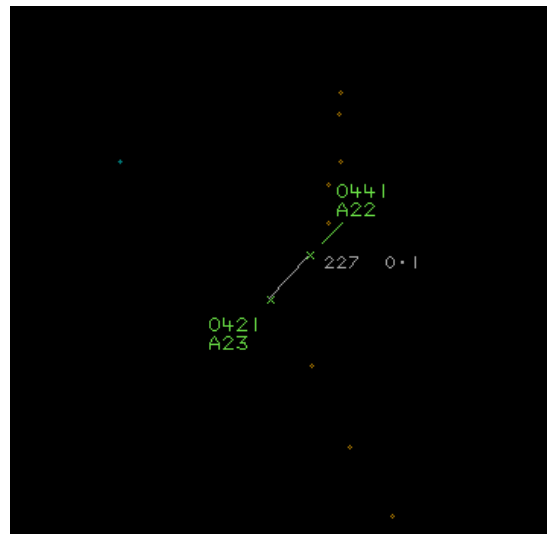


Figure 4 – 1559:03.

CPA occurred at 1559:03 (Figure 4), with a lateral distance of 0.1nm and a vertical distance of 100ft.

The area radar data analysed by ATSI did not show any STCA activity. The local unit investigation used their own radar recording which had this function available. Although the basic radar data is the same, some of the detail referred to in local unit report was not evident on the area radar recording.

The PA28 had departed Farnborough and was being provided with a Basic Service by the Approach controller in accordance with standard procedure. When the STCA alert signalled the first time, the controller observed the height difference between the two aircraft, evidenced in the controller's initial written report and subsequently the local unit report which stated that the cursor on the radar screen moved to that area of the display. The controller assessed that, as both aircraft were indicating in level flight, no Traffic Information was necessary.

The Approach Radar frequency had been busy and, at the time of the Airprox, the controller was engaged in vectoring an aircraft for an ILS approach to RW06 at Farnborough. The Farnborough LARS West frequency was also very busy. When the Cabri G2 pilot called on the frequency, he had reported climbing to 3000ft. Analysis of the radar indicates that the Cabri G2 pilot climbed to 2800ft and maintained this level after making a turn to the south towards the PA28. However, approximately 15 seconds prior to CPA, the Cabri G2 pilot commenced a rapid descent. Using an interrogation of the Mode S data, available on the area radar, the Cabri G2 indicated a descent rate of over 2000ft per minute until just before CPA.

Under a Basic Service, the allocation of an SSR code does not constitute, nor imply the provision of a surveillance related service. A controller is not required to monitor a flight and pilots should not expect any form of Traffic Information. If, however, a controller becomes aware that a risk of collision is possible, Traffic Information shall be passed. Both aircraft were operating in Class G airspace and the pilots remained responsible for their own traffic avoidance. Under a Basic Service, the pilot is not required to advise ATC of any change in direction or altitude, unless a specific agreement has been entered into with the controller.

Although both controllers were aware of the initial converging tracks of the aircraft, there was initially no cause to provide Traffic Information because the aircraft were not in direct conflict and were both in receipt of a Basic Service. When the Cabri G2 pilot commenced descent, the

controllers had only a limited time to react, and both controllers were engaged in the provision of ATC services to other pilots.

UKAB Secretariat

The PA28 and Cabri G2 pilots shared an equal responsibility for collision avoidance and not to operate in such proximity to other aircraft as to create a collision hazard¹. If the incident geometry is considered as head-on or nearly so then both pilots were required to turn to the right², notwithstanding their responsibility for collision avoidance.

Summary

An Airprox was reported when a PA28 and a Cabri G2 flew into proximity at 1559 on Wednesday 14th June 2017. Both pilots were operating under VFR in VMC. The PA28 pilot was in receipt of a Basic Service from Farnborough Approach, and the Cabri G2 pilot was in receipt of a Basic Service from Farnborough LARS West.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available included reports from both pilots, area radar recordings and reports from the appropriate ATC and operating authorities.

The Board first noted that both pilots were in receipt of a Basic Service from Farnborough, although with different controllers. The PA28 pilot had departed from Farnborough and had been transferred to the Approach Radar controller. The Cabri G2 pilot was carrying out a local flight in the area and was receiving a service from the Farnborough LARS West controller. Some members wondered why they were operating in the same area but with different controllers. The NATS advisor explained that it was normal practice for aircraft on a local flying detail from Farnborough to remain with the Approach Radar controller. Members could understand the necessity to remain with Approach if the flight was remaining close to the airport in order that its progress could be monitored relative to other traffic movements at Farnborough; however, civil GA members commented that it was not unusual in their experience for Farnborough Approach to retain them even though they were not near the airport. Members opined that if the two pilots had been on the same frequency, they may have heard each other's calls and might, therefore, have been aware of their relative positions.

The Board noted that both pilots were in receipt of a Basic Service and were aware that CAP774 states that: *'Given that the provider of a Basic Service is not required to monitor the flight, pilots should not expect any form of traffic information from a controller. A pilot who considers that he requires a regular flow of specific traffic information shall request a Traffic Service'*. However, the Board was aware anecdotally of pilots not requesting a service with Farnborough LARS, because they seemed too busy; this had featured often in previous Airprox. It was not known if this was applicable in this circumstance, but it was noted that both controllers had been busy at the time. The Board stressed that assuming that the controllers were too busy should not preclude pilots from requesting a Traffic Service, ATC would inform them if such a service was not possible due to workload or other factors.

The Board noted that Farnborough ATC is equipped with Short Term Conflict Alert (STCA), which acts as a safety net to alert controllers to a potential conflict. It was primarily introduced for ATC operations in CAS, to indicate a potential loss of separation. Its use outside CAS means that there can be a number of nuisance warnings, especially in busy areas. Members noted that the Farnborough STCA activated first between the PA28 and the Cabri G2 when they were 500ft apart vertically. Assuming that the two aircraft were in level flight and therefore not in conflict, Traffic Information was not issued to either pilot. The STCA activated again 35 seconds later, by which time the Cabri G2 pilot had turned left towards the track of the PA28 and had descended, although still

¹ SERA.3205 Proximity.

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

above the PA28. At this point they were separated by 300ft vertically and 0.5nm horizontally, and CPA occurred 12 seconds later, by which time the Cabri G2 was 100ft below the PA28 at a range of 0.1nm. The Board wondered why the controllers had not reacted to the second STCA activation. The NATS advisor commented that either the workload of the controllers could explain why neither had noticed the second STCA, or they did not have time to react before the two aircraft had passed each other. SERA.9005(b)(2) states that, under a Basic Service *'If a controller considers that a definite risk of collision exists, a warning shall be issued to the pilot'*. On this occasion neither controller was aware of a risk of a collision and some Board members wondered if, having ascertained that there had not been a conflict on the first STCA, the second one might have been disregarded as a possible nuisance alert. Some Controller members commented that, at their respective units, certain SSR code blocks are flagged within the radar system in order to inhibited STCA alerts between them in busy airspace, thereby reducing the number of nuisance alerts.

The Board then turned its attention to the cause and risk of the Airprox. Members acknowledged that because both pilots were operating in Class G airspace it was ultimately their responsibility to 'see and avoid' each other; it was apparent that the PA28 pilot had only seen the Cabri G2 at a late stage, and that the Cabri G2 pilot had not seen the PA28 at all. Some members commented that the Cabri G2 pilot should have carried out a thorough visual check of the airspace before commencing his intended turn and rapid descent given that this manoeuvre would have been quite difficult for the PA28 pilot to observe if he was concentrating on the airspace at his level. Nevertheless, it was quickly agreed that the cause of the Airprox was a late-sighting by the PA28 pilot and a non-sighting by the Cabri G2 pilot. Turning to the risk, it was clear to the Board that the two aircraft had passed significantly close to each other. The PA28 pilot had only observed the Cabri G2 just before it had passed him and after it had descended through his level without its pilot having the PA28 in sight. Based on the PA28 pilot's description of the incident, it was apparent that safety had been much reduced below the norm and the incident was therefore assessed as risk Category B.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: A late-sighting by the PA28 pilot and a non-sighting by the Cabri G2 pilot.

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:

ANSP:

Situational Awareness and Action were assessed as **ineffective** because the controllers, although aware that both aircraft were in the vicinity of each other, were not aware that the Cabri G2 was rapidly descending to a similar altitude to the PA28 and so were unaware that a conflict had developed; therefore, Traffic Information was not issued.

Warning System Operation and Compliance was available and functioning but was assessed as **ineffective** because the controllers did not react to the second Short Term Conflict Alert.

Flight Crew:

Situational Awareness and Action was considered as **ineffective** because neither pilot was aware of their proximity to the other aircraft.

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 was only **partially effective** because the PA28 pilot only obtained a late-sighting of the Cabri G2 and the Cabri G2 pilot did not see the PA28.

