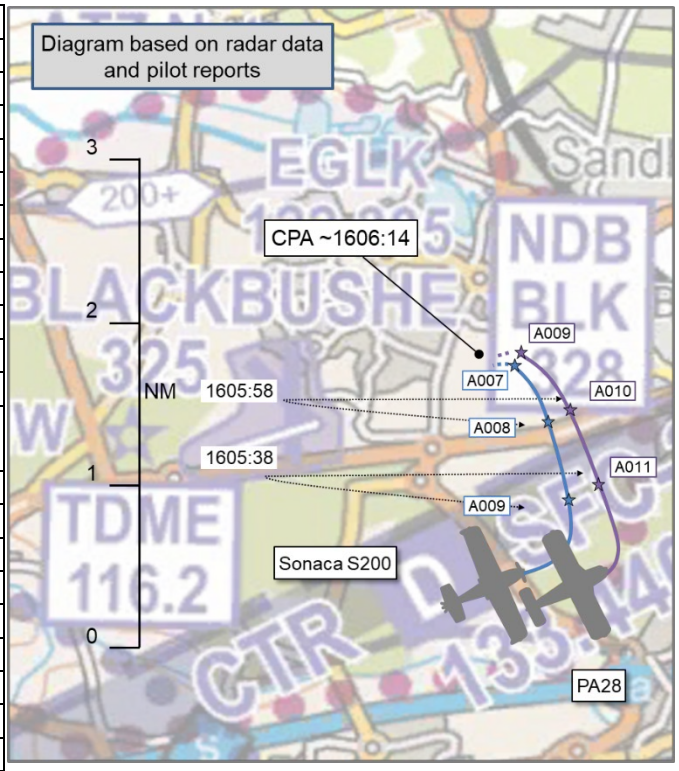
AIRPROX REPORT No 2022086

Date: 22 May 2022 Time: 1606Z Position: 5119N 00048W Location: Blackbushe

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	Sonaca S200	PA28
Operator	Civ FW	Civ FW
Airspace	Blackbushe ATZ	Blackbushe ATZ
Class	G	G
Rules	VFR	VFR
Service	AFIS	AFIS
Provider	Blackbushe	Blackbushe
Altitude/FL	NK	NK
Transponder	A, C, S	A, C
Reported		
Colours	Silver	Blue, White
Lighting	Nav, Strobe, Landing	Landing, Taxy, Strobes, Beacon
Conditions	VMC	VMC
Visibility	>10km	NR
Altitude/FL	300ft	500ft
Altimeter	QFE(998hPa)	QFE
Heading	250°	250°
Speed	70kt	75kt
ACAS/TAS	Not fitted	Not fitted
Separation at CPA		
Reported	0ft V/50m H	50ft V/0m H
Recorded	NK	



THE SONACA S200 PILOT reports they were in a busy circuit doing touch and go's on RW25 with a left circuit. They had not yet managed to land due to the busy pattern and this was their third attempt. They had just turned onto downwind and saw the PA28 join ahead on an overhead join. They kept their distance and continued with their downwind checks, struggling to get a call in on the radio due to the busy frequency. They saw the PA28 extending downwind a long way, well beyond the circuit pattern and very close to exiting the Blackbushe ATZ into controlled airspace. The PA28 then turned base, but maintained their altitude. The Sonaca turned base at Hawley Lake VRP and saw the PA28 continue well past the centreline of the runway on their base-leg, still at circuit height. This led the Sonaca pilot to believe the PA28 was going deadside or exiting to the local area. They checked right once more to verify the final approach was clear, there were no other conflicting aircraft and the PA28 was continuing perpendicular to the runway. After they turned final, they were focussed on the runway, getting their final radio call in and managing their speed. After they broadcast "C/S, final, touch and go" Blackbushe Info responded with "are you visual with the PA28 on your left?" They looked left and saw the PA28 was parallel with them, level if not slightly higher (by only a few feet) and well left of the centreline. They did not hear them make a call on final at any point. They were surprised to see them there and decided to go around as they had room to manoeuvre deadside. They called "going around deadside". They assumed the PA28 could have easily landed off that approach, however they also went around which put the two aircraft into further confliction. They flew a very wide circuit to build up space between them, flying over a noise abatement area, and decided to land on the next attempt to exit the busy pattern.

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

THE PA28 PILOT reports that on the final approach to RW25 at Blackbushe the student rolled the wings level. The Instructor saw movement in their peripheral vision and turned to see the Sonaca in their 9 o'clock position. It was also rolling onto final approach and moving directly towards them with its right-wing raised. The Instructor assumed control, pushed the control column forward and descended

further, rapidly. The aircraft passed over the top of them and they moved to the left of the aircraft hoping to get the attention of the solo-student pilot flying the Sonaca. The circuit was very busy that day with approximately 7 aircraft in the circuit. They did not think that the solo-student pilot saw the PA28 at any point during this incident. When the Tower asked the Sonaca pilot whether they had seen the PA28, they referenced a different PA28 in response. They initiated a missed approach from the new position on the left-hand side (live side) of RW25. Shortly afterwards, the Sonaca pilot also initiated a missed approach. At this point it seemed that the missed approach was being initiated in response to ATC's question about their situational awareness. The Sonaca student pilot had at this point established the aircraft on final approach and so a missed approach with no obstructions seemed unnecessary. The solo student pilot enquired about the PA28 after they had decided to commence the missed approach and the PA28 pilot believed this was the first time they had been noticed. They then re-joined the circuit and landed the aircraft.

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

THE BLACKBUSHE AFISO reports the Sonaca S200 had undertaken a previous flight with an instructor completing 2 touch and go's before landing for a crew change for student solo circuits. The crew swap was conducted at the flying school parking and the student taxied to report ready for departure at A1 hold. There was some delay to the departures during this time due to a busy circuit with multiple aircraft returning from local flights.

At 1600, the circuit traffic consisted of [C172 C/S] [Airprox PA28(A) C/S] [C152 C/S] established in the circuit [Non- Airprox PA28(B) C/S] joining to land. A student flying [second Non-Airprox PA28(C) C/S] returning from a local flight called entering the ATZ and was asked to report downwind and provided with Traffic Information on the aircraft as above. The Sonaca S200(A) pilot called ready for departure at A1 hold and was asked to report lined-up (due to the PA28 touch and go). [Sonaca C/S] departed RW25 at 1601 to continue the aforementioned student consolidation circuits and was provided with Traffic Information on those in the circuit and those joining. A C152 then reported final for a touch and go, and Traffic Information was provided to the C172 pilot on a PA28(B) joining in front of it, mid downwind. The circuit now consisted of:

Sonaca (A) on climb-out (to remain in circuit)
PA28(A) on crosswind (to remain in circuit)
C172 early downwind (to remain in circuit)
PA28(B) late downwind (to land)
C152 final (to remain in circuit)
PA28(C) joining deadside (to land)

Sonaca S200(B) reported ready for departure at A1 hold, to enter the circuit. They were asked to report lined-up (due to the C172 which was now on the runway completing a touch and go). Sonaca S200(B) departed into the circuit at 1603. At this point the AFISO's attention, along with the assistant, was drawn to the joining student PA28(C) who appeared crosswind and in a position where they would conflict with the established circuit traffic. They called PA28(C) and provided updated Traffic Information on the aircraft now appearing in their 2 o'clock. The student reported visual with traffic in their 2 and 3 o'clock (PA28 (A) and Sonaca S200 (A)) and advised they were climbing to perform a go around. The aircraft was asked to report repositioned dead side.

PA28(A) appeared to make a 20-30° turn north in the downwind leg, likely a reaction to observing student PA28(C) in their 10 o'clock. The AFISO advised PA28(A) that the student PA28(C) had reported visual with them in the previous transmission and was now climbing in the downwind leg (high) appearing in the 2 o'clock position. PA28(A) continued downwind in the circuit. PA28(B) reported final, from recollection, they were very short final, over the aerodrome boundary and landed almost immediately.

Shortly afterwards, Sonaca S200(A) reported downwind and was advised two aircraft ahead (PA28(A) and C172) and to report final. The reply was "Visual, Wilco C/S". Student PA28(C) reported repositioning from the base-leg to the deadside and appeared higher than circuit traffic, extending their

base-leg and passing overhead the final approach for RW25. C172 reported final for a touch and go. The AFISO called Sonaca S200(B) to ask for a position report, as they hadn't yet reported downwind, but student PA28(C) replied instead. They observed a Sonaca on final approach and made a call to ask the aircraft to confirm their callsign as the traffic picture seemed to have changed from the order they reported downwind, and they were concerned that Sonaca S200(B) was now on final. Both aircraft are the same type, with the same livery. A lookout from the tower suggested that a Sonaca had turned in front/towards PA28(A) on final approach, with PA28(A) now making a turn/descent to remain visual with the Sonaca. PA28(A) called going around before the Sonaca pilot could respond. They repeated the call to the Sonaca on final, and Sonaca S200(A) replied. They asked Sonaca S200(A) if they were visual with the PA28 traffic ahead now going around which they confirmed. Sonaca S200(A) pilot replied that they had believed the aircraft that reported repositioning to the deadside (student PA28(C)) was actually PA28(A) and apologised for their mistake. Sonaca S200(A) pilot then also advised they would also go-around.

PA28(A) appeared to fly along the runway on the go-around instead of positioning deadside. In the AFISO's opinion this seemed a wise decision as PA28(A) would have had student PA28(C) on the dead side from their earlier repositioning, Sonaca S200(A) behind (4 o'clock) also going around and the C172 climbing out from their touch and go. In a low wing PA28 this probably would have given PA28(A) a much better view of the traffic situation. PA28(B) had vacated the runway by this point and called for taxy to parking. They advised PA28(A) and Sonaca S200(A) of the updated Traffic Information suggesting to PA28(A) that an early turn downwind may assist their spacing. PA28(A) made an early crosswind turn and repositioned downwind.

The afternoon continued until close at 1800 local with high traffic levels in the circuit and various aircraft types arriving/departing. To conclude, in the AFISO's opinion and from their viewpoint, the conflict between Sonaca S200(A) and PA28(A) was a result of a busy circuit and the student in the Sonaca S200(A) misunderstanding the Traffic Information provided. This resulted in an early turn onto final approach where PA28(A) was positioned resulting in the go-around of both aircraft.

Factual Background

The weather at Farnborough was recorded as follows:

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METAR EGLF 221550Z 22010KT CAVOK 21/09 Q1010=
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Analysis and Investigation

CAA ATSI

The Airprox occurred on final approach in the RW25 left-hand visual circuit at Blackbushe. The circuit was very busy during the period leading up to the Airprox, with 5 aircraft established in the circuit pattern, and one aircraft going around above circuit height, having joined from the northwest and been unable to integrate. There had also been one VFR departure to the east and a further joining aircraft that had landed just ahead of the Airprox occurring.

The S200(A) pilot reported that they were a student pilot on their second solo flight. They had been attempting to land from two previous circuits, however the volume of traffic in the circuit prevented a landing and they had completed a touch and go on both occasions. The Airprox occurred when they were on final approach for their third attempt. The pilot reported that they subsequently initiated a go around due to the AFISO advising them that the PA28 was on their left.

The PA28 pilot was a student under instruction, the instructor reported that the student had positioned the aircraft onto final approach and had rolled the wings level. The instructor then spotted the S200 in their 9 'o'clock, also rolling out onto final approach and moving directly toward them. The instructor took control of the aircraft, pushed the control column forward, descended rapidly and subsequently carried out a missed approach.

ATSI had access to reports from the pilots of both aircraft and the Blackbushe AFISO. The area radar recordings were reviewed for the relevant period, and the screenshots within this report have been taken from the area radar recordings. The levels displayed within the screenshots are altitudes, the aerodrome elevation is published in the UK AIP as being 325ft. The Blackbushe RTF was reviewed for the relevant period and was extremely busy in the lead-up to the event.

At 1600:04 the S200(A) pilot reported ready for departure and the AFISO advised the pilot that they would call them back shortly.

At 1600:48 the PA28(A) pilot reported final RW25 and was issued with a touch and go at their discretion.

1601:02 the pilot of a joining PA28 aircraft, referred to in this report as PA28(B), reported, "*entering the ATZ from the northwest, turning deadside, squawking 7010*." The AFISO responded, "*report downwind, circuit traffic on the climb-out, downwind and final*." The pilot replied, "*visual with the traffic and wilco*."

The AFISO turned their attention to the pilot of unrelated traffic who had requested a practice fan stop.

At 1601:35 the student pilot of a second joining PA28 aircraft, referred to in this report as PA28(C), reported entering the ATZ and squawking 7010. The AFISO responded initially using PA28(C) callsign and then corrected this to the callsign of the S200(A) and told the S200(A) pilot to report lined up. The S200(A) pilot responded with wilco (Figure 1).

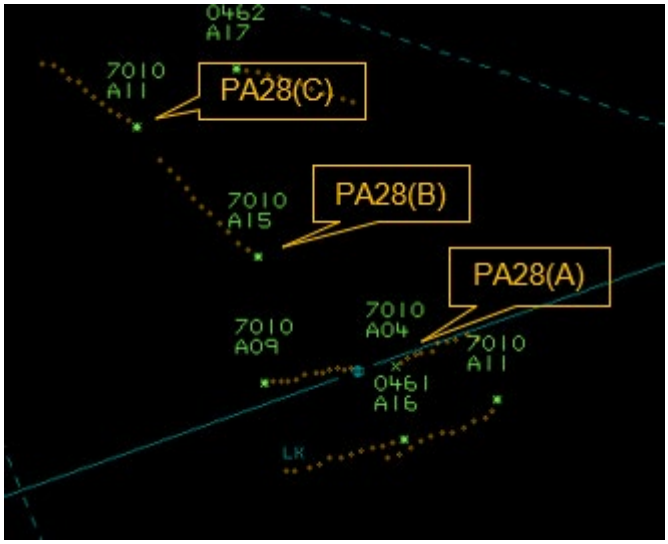


Figure 1 - 1601:35

At 1601:40 PA28(C) student pilot was told to, "*report downwind, there's one aircraft ahead for join deadside and 3 aircraft in the circuit, two on the climb-out RW25 and one on base leg*." The pilot responded, "*keeping a look out, student (callsign)*." Note: the 0461 squawk (in Figure 1 above) was departing the ATZ.

At 1601:55 the S200(A) pilot was given take-off at their discretion for left-hand circuits RW25 and Traffic Information was passed to the pilot, "*two ahead on the climb-out to remain and two on the deadside to join*." The pilot responded, "*taking-off (callsign) and we're visual*."

The AFISO turned their attention to the pilot of the unrelated aircraft who had just undertaken a fan stop and reported deadside. The pilot was issued with a caution that there were 2 aircraft deadside to join. The pilot reported visual.

At 1603:29 the PA28(A) pilot reported downwind RW25. The AFISO was dealing with traffic taking-off and did not respond immediately (Figure 2).

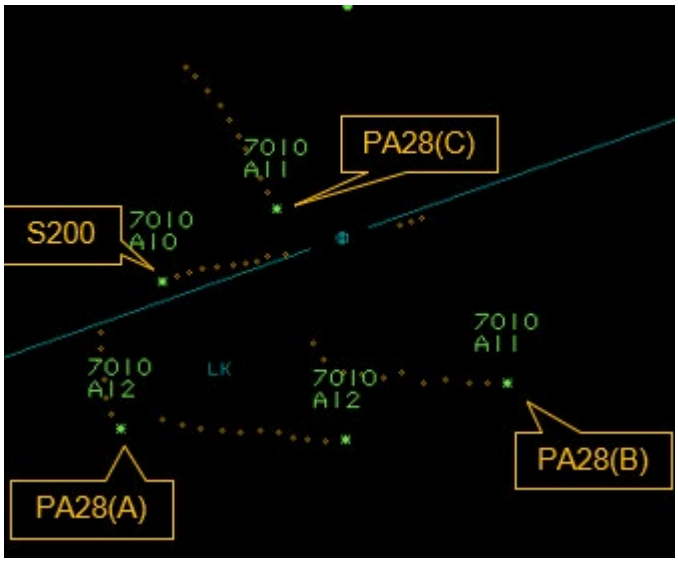


Figure 2 - 1603:29

The AFISO turned their attention to an aircraft that was lined-up on the runway and issued the pilot with take-off at their discretion.

At 1604:00 the AFISO passed Traffic Information to PA28(C) student pilot, "*traffic in your two o'clock, downwind*," and the AFISO asked if the pilot was visual. The pilot reported visual with traffic in their two o'clock and their 3 o'clock and advised that they were going to, "*have to er climb to a thousand, back to a, er, go around*." The AFISO responded, "*roger report established deadside*."

At 1604:15 the PA28(A) pilot transmitted, "*my apologies from (callsign) (unintelligible word) the traffic there*." The AFISO responded with, "*no problem the traffic reported visual with you and they're now repositioning to the deadside*." The PA28(A) pilot asked the AFISO for the callsign of PA28(C) and the AFISO provided this information and passed Traffic Information on PA28(C), "*two o'clock, high, downwind, repositioning to the deadside*." The PA28(A) pilot then provided an apology to the pilot of PA28(C) (Figure 3).

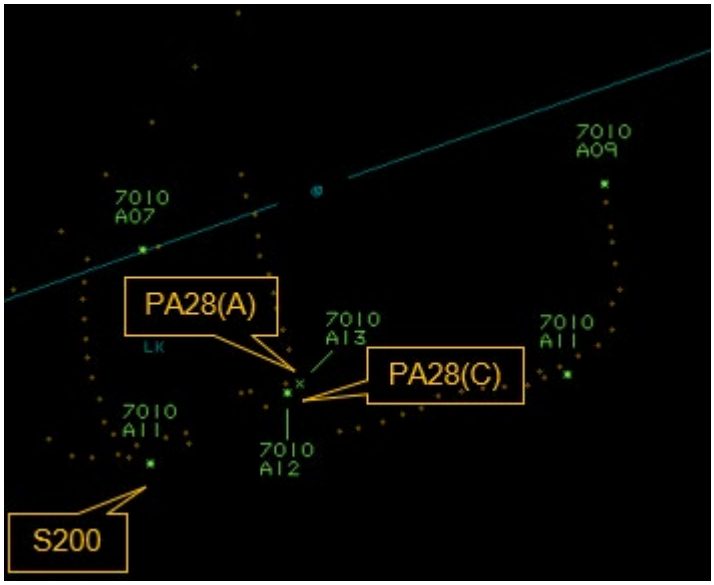


Figure 3 - 1604:15

The AFISO turned their attention to the pilot of an aircraft on final and issued a land at their discretion.

At 1604:40, 1604:54 and 1605:46 the aircraft were at the circuit positions in Figures 4, 5 and 6 below.

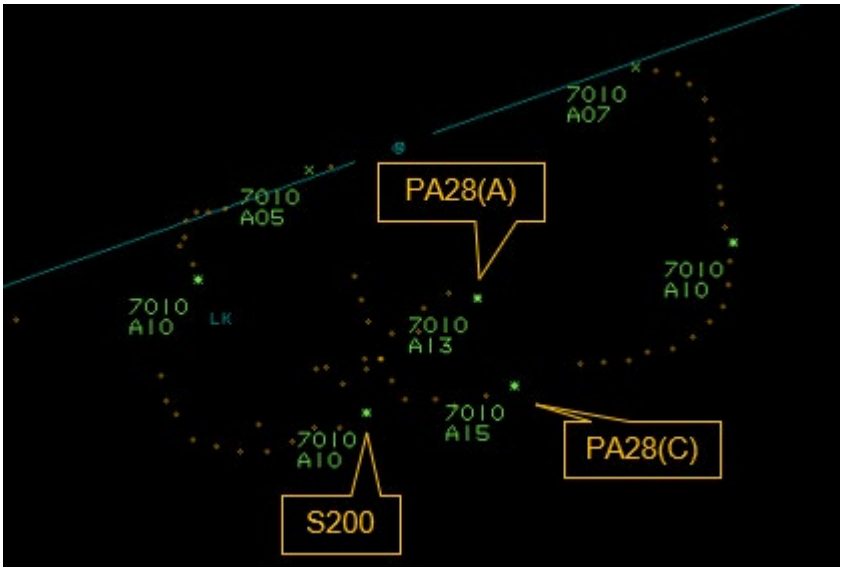


Figure 4 – 1604:40

At 1604:50 the S200(A) pilot reported downwind for a touch and go. The AFISO responded, "*report final, two ahead*." The pilot responded, "*wilco [callsign]*."
Note: at this point there were 3 ahead (one on final, one on base and the PA28(A) downwind) and PA28(C) climbing out of the circuit pattern. (Figure 5)

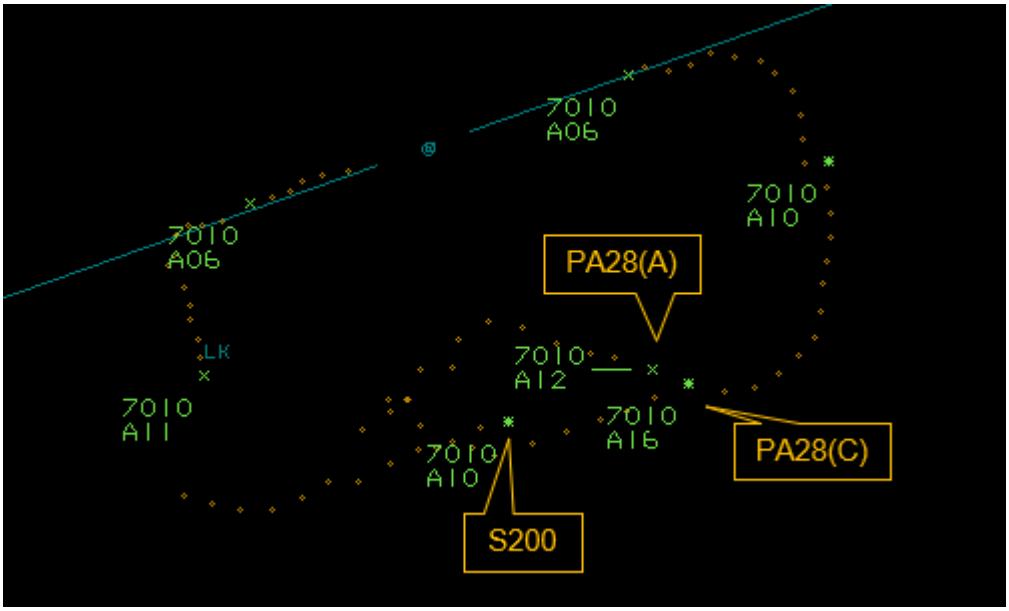


Figure 5 – 1604:50

At 1605:56 the pilot of PA28(A) had repositioned their aircraft from the inside of the pattern formed by other circuit traffic to the outside of the pattern formed by other circuit traffic. Having come into confliction with PA28(C) previously, they appeared to be trying to position behind and outside it (Figure 6).

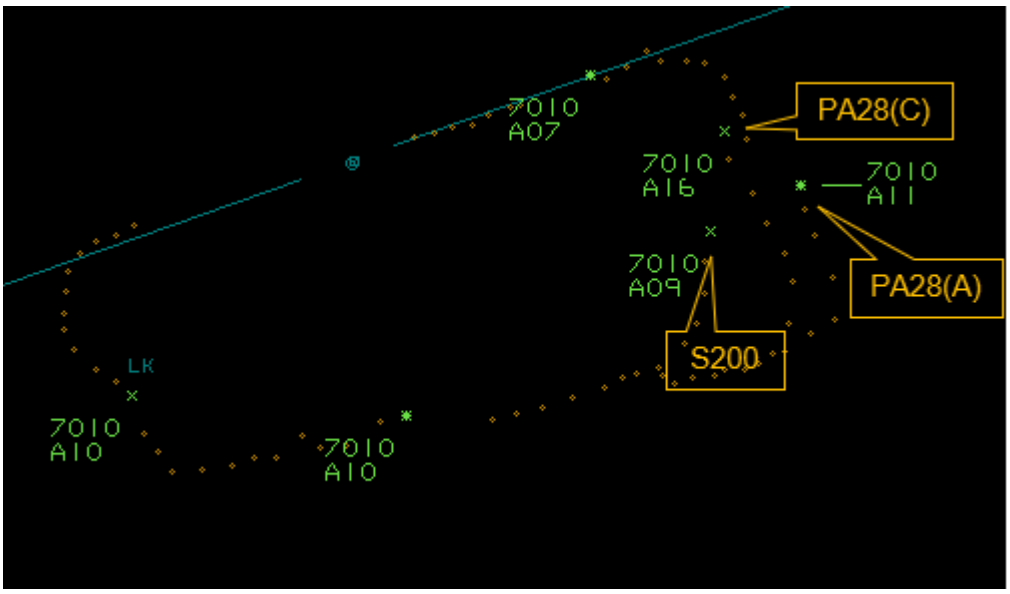


Figure 6 – 1605:46

At 1606:05 the AFISO asked the pilot of PA28(C) if they were turning final. The pilot responded that they were, "*at twelve hundred QFE and er on the deadside*." The AFISO then transmitted, "*aircraft on final approach report your callsign?*" The S200(A) pilot started to transmit their callsign and was then stepped-on by the pilot of the PA28(A) who reported, "*going around*." The AFISO acknowledged the PA28(A) pilot. The AFISO enquired again for the callsign of the aircraft on final approach and the S200(A) pilot responded with their callsign. The AFISO asked the S200(A) pilot, "*were you visual with the PA28 ahead of you, now appears in your left 2 o'clock on the go around*?" The S200(A) pilot responded, "*affirm, visual, I thought he was going deadside, my apologies, breaking-off deadside, going around*." (Figure 7).

Note: ATSI assumed that the AFISO had intended to report the position of the PA28(A) as right 2 o'clock. The report received from the S200(A) pilot states that the position of the conflicting traffic was in their left 9 o'clock, and that they first sighted it 50ft away on a parallel heading of 280°.

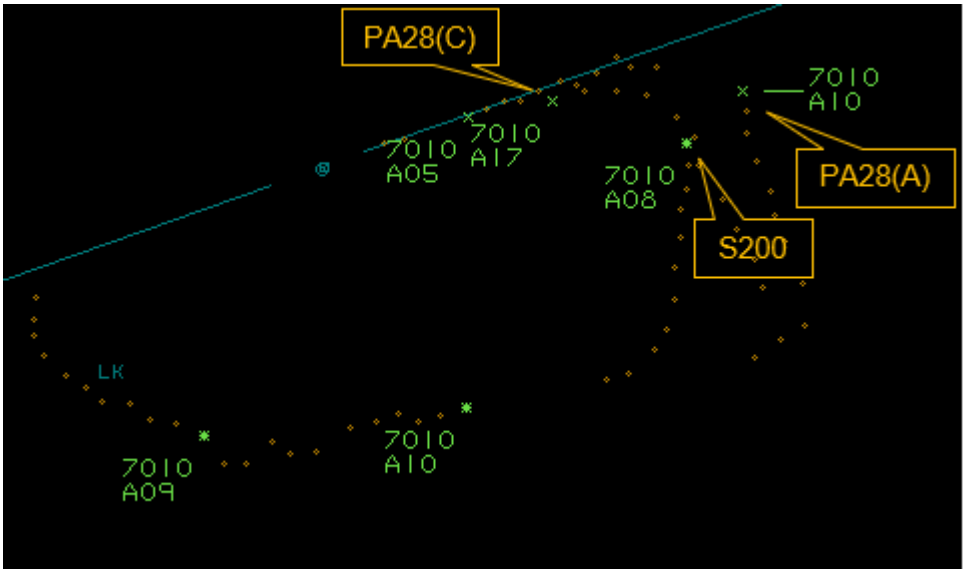


Figure 7 - 1606:05

At 1606:14 CPA was measured as 0.1NM laterally and 200ft vertically (Figure 8), however, the radar contact of the PA28(A) was lost 6sec later and as such CPA could potentially have been less than that measured on the radar (Figure 9).

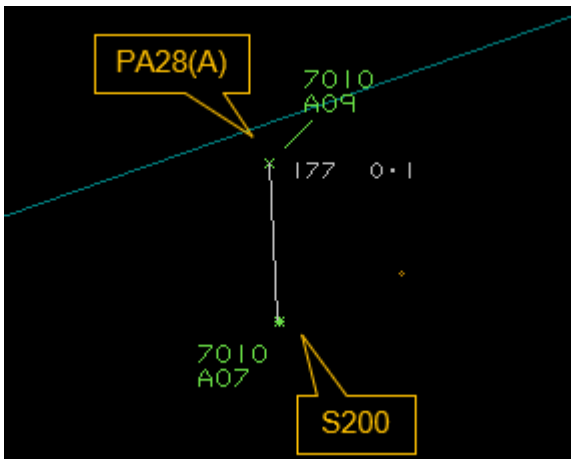


Figure 8 - 1606:14 Radar CPA (measured)

At 1606:20 the PA28(A) radar target was lost. There had remained 0.1NM and 200ft between the 2 aircraft until the target was lost (Figure 9).

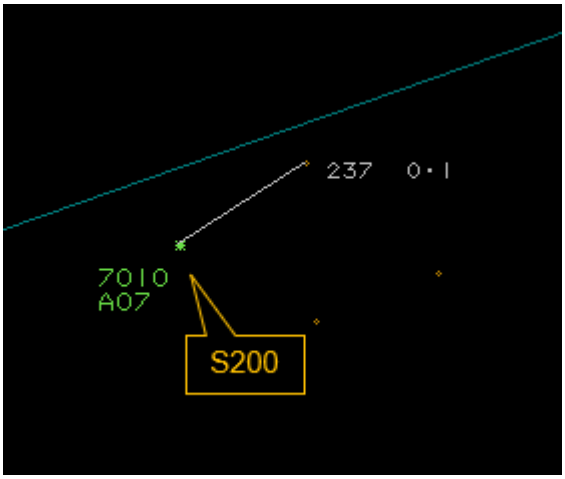
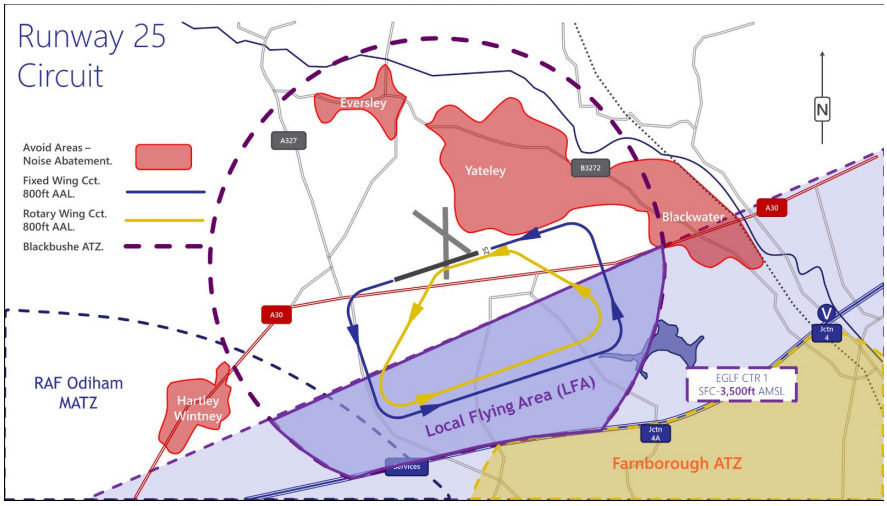


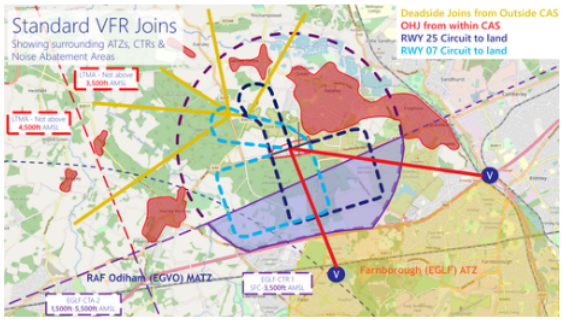
Figure 9 -1606:20 PA28 radar target lost

RW25 circuit diagram and joining procedures, as published in the pilot information section of Blackbushe Aerodrome website:



Joining Procedures

There are two standard VFR / SVFR joins:



1. From Outside Controlled Airspace (North and West)

   Joins from the north and west shall descend to circuit height on the "Deadside" (to the north of the Aerodrome. Care must be taken not to overfly Yateley or Eversley to the north (see Diagram in 4.1), and aircraft arriving from a north east should ensure they are positioned sufficiently west to avoid them.

2. From Within Controlled Airspace (South and East)

   Aircraft coming from within the Farnborough CTR shall join overhead at 1,600ft aal to ensure they are within the LFA. They shall descend on the Deadside and integrate with the visual circuit. Care should be exercised not to overfly the noise abatement area of Yateley except in an emergency.

RUNWAY 25 JOINS

When on final for Runway 25, try to keep as far south as possible and avoid excessive use of power, keeping the housing estate to the right (north).

Turn Base Leg before reaching Hawley Lake to ensure circuits remain inside the ATZ/LFA. If aircraft ahead are establishing a wider circuit, do not follow, but reposition deadside or orbit as appropriate, and in communication with ATSU.

Relevant extracts from the UK AIP

1 AIRPORT REGULATIONS

a. Non-radio aircraft not accepted except in an emergency.
b. Limited to four aircraft undertaking circuit practice/training. All circuit bookings managed by ATSU.
c. All pilots/operators are bound by the Blackbushe Airport Terms and Conditions and Rules & Procedures, which are available on the aerodrome website: www.blackbusheairport.co.uk/aerodrome.

EGLK AD 2.22 FLIGHT PROCEDURES

1 GENERAL

a. Circuits are always to the south of the airfield and are flown at 800 FT (QFE) for most fixed wing aircraft (including twins).

2 JOINING AND DEPARTURE PROCEDURES

a. There are two standard VFR / SVFR joins:

i. From outside CAS (north and west). Joins from the north and west shall descend to circuit height on the "deadside" (to the north of the Aerodrome). Care must be taken not to overfly Yateley or Eversley to the north, and aircraft arriving from the northeast should ensure they are positioned sufficiently west to avoid them.

For more information on circuit procedures, including diagrams, visit the airport website: (www.blackbusheairport.co.uk/aerodrome)

3 MISSED APPROACHES

a. In the event of an aircraft carrying out a Missed Approach, pilots are requested where able, to carry out a visual circuit (south side of the Runway), remain within the Blackbushe ATZ north of the M3 and operate VFR.

4 LOCAL FLYING AREA

a. Within a Local Flying Area (LFA) of 2 NM radius, centred on the aerodrome (511926N 0005051W) excluding that part of the circle on or south of the M3 motorway, and that part north of a line joining positions 511705N 0005508W - 512112N 0004247W. The part north of these positions is existing Blackbushe ATZ.
b. Pilots are required to contain their circuits within the LFA and ATZ. In particular, on Runway 25 note to turn base leg west of Hawley Lake to avoid infringing the CTR to the east. On Runway 07 turn base leg east of The Elvetham Hotel to avoid infringing the CTR to the west. See circuit diagrams on Blackbushe Airport website for more information.
c. Pilots of aircraft operating within LFA are responsible for providing their own separation from other aircraft operating within the LFA.
d. VFR flights may take place within the LFA subject to the following conditions:
i. In compliance with the Class D Airspace weather minima as defined in ENR 1.4;
ii. Maximum altitude: 2000 FT QNH.

The number of aircraft within the visual circuit at the time of the Airprox exceeded the maximum published restriction of 4 aircraft.

The pilot of PA28(C) had complied with the RW25 joining procedure and correctly descended to circuit height on the deadside. The Traffic Information they received prior to entering the circuit was that there was one joiner ahead, two on the climb-out and one downwind (4 in total). The S200(A) was given take-off at their discretion 15sec later. When PA28(C) reached the live side of the circuit pattern the S200(A) was airborne and there were 5 aircraft in the circuit. The pilot made a decision to climb out of the circuit and go around on the deadside. As they commenced the climb, they came into confliction with the PA28(A) subsequently involved in the Airprox (Figure 3).

The PA28(A) pilot subsequently apologised to the AFISO and the pilot of PA28(C) and then appeared to adjust their downwind leg to remain inside of the circuit pattern initially, until PA28(C) had passed ahead of them, and then adjusted their downwind leg to outside of the established circuit pattern, crossing behind and below PA28(C), and ahead of and above the S200(A) (Figures 4, 5 and 6).

When the S200(A) pilot had reported downwind for a touch and go, the AFISO responded, "*report final, two ahead*." At this point there were 3 ahead (one on final, one on base leg and the PA28(A) downwind) plus PA28(C) climbing out of the circuit pattern (Figure 5).

The S200(A) pilot subsequently turned onto base leg at Hawley Lake, as per the published circuit procedures.

The PA28(A) pilot passed Hawley Lake before turning onto base leg, resulting in the aircraft being to the east of the S200(A).

The AFISO identified the confliction between the S200(A) and the PA28(A) at the same time as the PA28(A) pilot made the transmission advising that they were going around. When the AFISO asked the S200(A) pilot whether they had been visual with the conflicting PA28(A) they passed the Traffic Information as the PA28 being left 2 o'clock, rather than right 2 o'clock. At this point PA28(C) was on their left and the PA28(A) was on their right. The response from the S200(A) pilot confirming that

they were visual and that they thought that the PA28 was going deadside, would indicate that they had sighted PA28(C).

The Airprox report received from the S200(A) pilot states that the position of the conflicting traffic was in their left 9 o'clock, and that they first sighted it 50ft away, on a parallel heading of 280°. This, together with the S200(A) pilot reporting having seen the PA28 join ahead of them via an overhead join, would indicate that they had been visual with, and monitoring the progress of PA28(C), and were potentially unaware of the presence of the PA28(A).

Conclusion

The number of aircraft in the circuit at the time of the Airprox was in excess of the published restriction of 4 aircraft. This resulted in the AFISO having to work very hard, in challenging circumstances, to keep all of the pilots up to date with Traffic Information on the position and intentions of the other traffic.

The circuit was already full when PA28(C) entered the circuit, and the PA28(A) pilot flew a non-standard circuit pattern (after encountering PA28(C)) and subsequently turned onto base-leg to the east of Hawley Lake.

The Traffic Information passed to the S200(A) pilot in response to their downwind call was incomplete, in that there were 3 aircraft ahead (rather than 2) and information on the position and intentions of PA28(C) was omitted. This had the potential to degrade the situational awareness of the S200 pilot.

Blackbushe Occurrence Investigation

There is nothing within legislation or regulation that had an impact on the occurrence. There has been a longstanding "unwritten" rule between the ATSU and resident flying schools that the number of aircraft permitted doing circuit details should be limited to 4 to allow arriving and departing traffic to integrate. In practice this is difficult to manage, as anecdotally instructors will return from a local flight, and will not inform the ATSU in advance of their intention to enter the circuit for touch and go's or go-arounds at the end of a detail. At times, it has been attempted to ask the flying schools to book circuit slots, but this led to issues where slots were booked but not used and other schools missed an opportunity to operate. In addition, resident pilots also like to conduct currency circuits, and so circuit activity is not limited just to the 5 resident schools.

The presence of Farnborough Airspace overlapping the ATZ, and the limitation of the size of the Local flying Area (LFA) has created an environment where pilots are afraid to extend downwind to create space, because this will result in airspace infringement, and the fear of potential repercussions from the team investigating them. Discussions have been had between the CAA, NATS Farnborough, and Blackbushe to resolve this, but there is no easy solution to implement. The result is pilots will often take the decision to position early to the deadside (as PA28(C) did in this case), but this occurrence highlights the confusion this can have on other pilots operating within the circuit.

The pilot of Sonaca S200(A) mistook one aircraft in the circuit for another, both similar type, and operated by the same flying school, and turned final in front of an aircraft already established on final.

Observations for Contributing Factors

• Busy circuit towards the end of a busy good-weather weekend day when activity is naturally higher.

• Similar Aircraft:

i. Aircraft operating on similar callsigns (4 aircraft had the callsign ending “Mike”).
ii. 2 x Sonacas with same livery.
iii. 2 x PA28 operated by the same school.
iv. 2 aircraft with the same abbreviated callsign, despite the FISO using full callsigns, pilots were responding with abbreviated callsigns.

• Airspace design, constraining the circuit and removing the option of a downwind extension to create spacing.

The Airport Accountable Manager (AAM) will bring the issue to the attention of the CFIs of the flying schools at the next Safety Action Group to ask for views on how they can better manage busy circuits. There are options, such as further reducing the number of aircraft on circuit details, circuit slot allocations, or limitations on the time of day, or pilot skill level when circuits are appropriate. Any restriction is likely to receive pushback from the schools as it may limit their ability to operate, and so any decision needs to be based on a balance of safety within the circuit and commercial sensitivities. AAM will also raise whether the flying schools could make use of callsigns to avoid some of the issues with conflicting callsigns.

Feedback for FISOs shall include:
• Emphasis on highlighting confusing callsigns, by expressly informing pilots to use the full callsign. This happens regularly but, whilst the FISO used full callsigns, and in accordance with CAP413, pilots should not abbreviate unless the ATSU does so first, it does not appear that an express message highlighting the issue was passed on this occasion. Whilst this did not directly contribute to the occurrence, it was noticeable in confusing messages being passed around at the time.
• Highlighting that a message to the pilot of Sonaca S200(A) highlighting PA28(C) positioning above them to the deadside may have enabled the pilot to spot PA28(A) earlier and avoid the earlier turn which led to the conflict.

CONCLUSION

Pilots are ultimately responsible for avoiding one another, and for ensuring they maintain visual contact with the aircraft ahead of them in the circuit. Blackbushe Airport is a busy training airfield, and aircraft turning in front of one another while in the circuit does happen occasionally, it is part and parcel of students practising, making mistakes, and learning from them. As an ATS unit, we will consider guidance to our FISOs on the provision of information, particularly where we can identify aircraft making calls of completing manoeuvres which may become confusing to others operating within the circuit.

UKAB Secretariat

The Sonaca S200 and PA28 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] When two or more aircraft are approaching an aerodrome to land, the aircraft at the higher level shall give way to aircraft at the lower level, but the latter shall not take advantage of this rule to cut in front of another which is in the final stages of an approach to land.[2]

Summary

An Airprox was reported when a Sonaca 200 and a PA28 flew into proximity on final at Blackbushe at 1606Z on Sunday 22nd May 2022. Both pilots were operating under VFR in VMC and both were in receipt of an AFIS from Blackbushe.

PART B: SUMMARY OF THE BOARD’S DISCUSSIONS

Information available consisted of reports from both pilots, radar photographs/video recordings, reports from the AFISO involved and reports from the appropriate operating authorities. Relevant contributory

[1] (UK) SERA.3205 Proximity.
[2] (UK) SERA 3210 Right-of-way.

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.

The Board first looked at the Airprox as a whole; members agreed that this had been a complicated scenario within a busy circuit environment and, as such, some questioned whether the Blackbushe procedures were sufficiently robust (**CF1**). In particular, members were concerned about solo students being allowed to conduct multiple circuits in such a busy environment, with some members citing other airfields that restrict circuit numbers to as little as 2 when solo students were airborne in the circuit. Controller members opined that, although 4 in the circuit with others joining was workable when things were operating as planned, when the unexpected happened, as it had here, no-one had the sufficient spare capacity to successfully bring the circuit back under control. Indeed, members acknowledged that the AFISO, whilst doing their utmost to provide accurate Traffic Information, did not have the authority to tell pilots to hold-off or go-around, in the way that a controller would have been able to, therefore it had been left to the pilots, many of whom were solo students, to make such decisions. Furthermore, the constraints of the airspace, with the truncated ATZ and the inability to extend downwind for fear of entering Farnborough's Class D airspace, also added a layer of complexity. Whilst members thought that it was not for the Board to dictate solutions, and recognised that there were commercial pressures at play, they still felt that the operating risk in the visual circuit required further understanding and resolved to make a recommendation that Blackbushe review their published circuit occupancy limitations.

Turning to the Sonaca pilot, members questioned whether the instructor that had allowed the student to go solo had realised just how busy and complex the circuit had been at the time. Certainly, those with flying instructor experience thought that they would have been reluctant to release a student into such an environment. Once airborne, the Sonaca pilot had positioned downwind behind the PA28(A), but unfortunately when the PA28(C) joined the circuit and flew into proximity with the PA28(A), the Sonaca pilot lost ident on PA28(A) and believed that PA28(C) had been the only PA28 ahead of them. This inaccurate situational awareness about the aircraft ahead led the Sonaca pilot to believe that the PA28 ahead had left the circuit (as indeed PA28(C) had done), when in fact PA28(A) had flown a wider visual circuit than normal, after having moved out to avoid PA28(C). Consequently, the Sonaca pilot had had an incorrect mental model of the circuit order (**CF6**) and had turned onto final and into proximity with PA28(A) (**CF4**, **CF5**). Members thought that the student Sonaca pilot had probably been focused on the runway and turning at the specific landmark points in the circuit, which meant that they simply had not seen the PA28(A) as they turned onto final, despite reporting that they had looked up the approach lane. Furthermore, members thought that it was likely that the Sonaca pilot had not seen PA28(A) at all, as their report seemed to indicate that they had probably been visual with PA28(C) at CPA (**CF7**).

For their part, the PA28(A) pilot had also been instructing and had needed to adjust their own circuit when PA28(C) had flown towards them. Once established downwind, slightly wider than the norm, but still within the ATZ, the pilot would have had only had generic situational awareness that the Sonaca pilot had been behind them, and would not have expected that the Sonaca would turn into them when on final (**CF6**). Although they had seen the Sonaca at the last minute and had taken action to avoid by descending rapidly, members thought that this had been so last minute as to make this effectively a non-sighting (**CF7**). Unusually, members also discussed a third aircraft in the circuit, PA28(C). This aircraft had also been flown by a solo student, and members thought that their attempt to slot into the downwind position and subsequent close encounter with PA28(A) had set off a chain of events that had led to the subsequent Airprox. The Board therefore attributed a contributory factor that this pilot had not conformed with the pattern of traffic already formed in the circuit (**CF5**).

When looking at the role of the AFISO, members had great sympathy; with the busy RT and so many similar types and callsigns on frequency they thought that it had been an unenviable situation. The AFISO had no authority to tell pilots to hold-off as such, although members wondered whether they could have invoked the authority of the airfield procedures to tell pilots that the circuit was full. Nevertheless, faced with the busy circuit the AFISO had been doing their best to provide pilots with Traffic Information and position reports. Unfortunately, when giving Traffic Information to the Sonaca pilot downwind, they had told the pilot that there had been 2 ahead, when in fact there had been 3 (**CF2**,

CF3). Whether more accurate Traffic Information would have made any difference, given that the Sonaca pilot had already formed the mental model that PA28(C) was the PA28 ahead of them, could not be known. Irrespective, the AFISO had become aware that the Sonaca pilot had turned onto final and into confliction with the PA28(A) and had attempted to warn the pilots. Members thought that the confusion as to which aircraft had turned onto final was symptomatic of the whole situation in which the high workload caused by the sheer numbers of aircraft in the circuit, coupled with the use of similar abbreviated callsigns (which the AFISO had attempted to correct), sapped any extra capacity to deal with the unexpected. As it happened, the PA28(A) pilot called going-around at the same time as the AFISO made their call.

Finally, the Board discussed the risk of the Airprox, they quickly agreed that there had been a risk of collision. However, some members thought that the PA28(A) pilot's last minute avoiding action had increased the separation (Risk Category B), whilst others argued that the PA28(A) pilot's description of the event, on final with the Sonaca in their 9 o'clock, its right-wing raised, sliding towards them and passing overhead, was inherently more dangerous and described a situation where providence had played a major part in events. In the end the Chair took a vote and, by a large majority, the latter view prevailed; Risk Category A (**CF8**).

PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK

Contributory Factors:

	2022086			
CF	**Factor**	**Description**	**ECCAIRS Amplification**	**UKAB Amplification**
	Ground Elements			
	• Regulations, Processes, Procedures and Compliance			
1	Organisational	• Aeronautical Information Services	An event involving the provision of Aeronautical Information	The Ground entity's regulations or procedures were inadequate
2	Human Factors	• ATM Regulatory Deviation	An event involving a deviation from an Air Traffic Management Regulation.	Regulations and/or procedures not fully complied with
	• Situational Awareness and Action			
3	Human Factors	• ANS Traffic Information Provision	Provision of ANS traffic information	TI not provided, inaccurate, inadequate, or late
	Flight Elements			
	• Tactical Planning and Execution			
4	Human Factors	• Action Performed Incorrectly	Events involving flight crew performing the selected action incorrectly	Incorrect or ineffective execution
5	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			
6	Contextual	• Situational Awareness and Sensory Events	Events involving a flight crew's awareness and perception of situations	Pilot had no, late, inaccurate or only generic, Situational Awareness
	• See and Avoid			
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
	• Outcome Events			
8	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: A.

Recommendation: Blackbushe aerodrome reviews published circuit occupancy limitations to ensure that traffic complexity levels are appropriate for solo student pilot operations.

Safety Barrier Assessment[3]

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

Ground Elements:

Regulations, Processes, Procedures and Compliance were assessed as **partially effective** because the Blackbushe regulations were lacking in some respects, in allowing the circuit environment to become so congested.

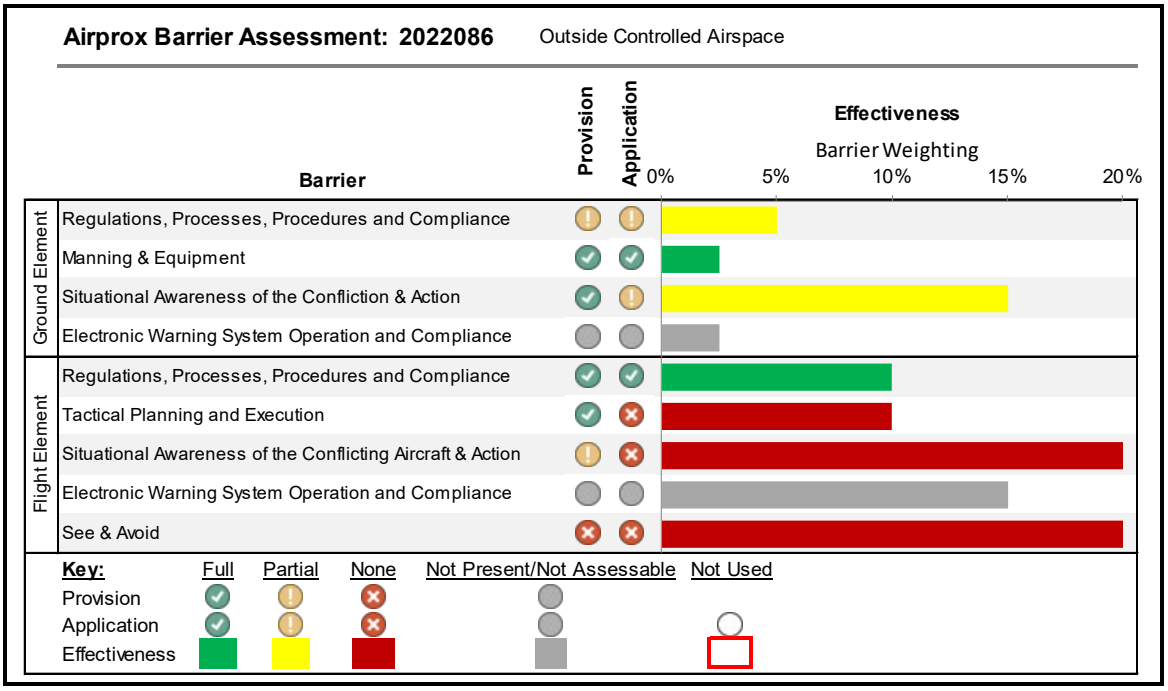
Situational Awareness of the Confliction and Action were assessed as **partially effective** because the AFISO gave inaccurate Traffic Information to the Sonaca pilot when they were downwind.

Flight Elements:

Tactical Planning and Execution was assessed as **ineffective** because the Sonaca pilot did not fit in behind the PA28(A) on final and PA28(C) pilot did not integrate into the circuit effectively, causing PA28(A) to amend their circuit and fly a wider than normal circuit.

Situational Awareness of the Conflicting Aircraft and Action were assessed as **ineffective** because the Sonaca pilot had inaccurate SA about the aircraft ahead when turning onto base-leg and the PA28(A) pilot did not know that the Sonaca was turning into confliction with them.

See and Avoid were assessed as **ineffective** because it was effectively a non-sighting by the PA28(A) pilot and a non-sighting by the Sonaca pilot.



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