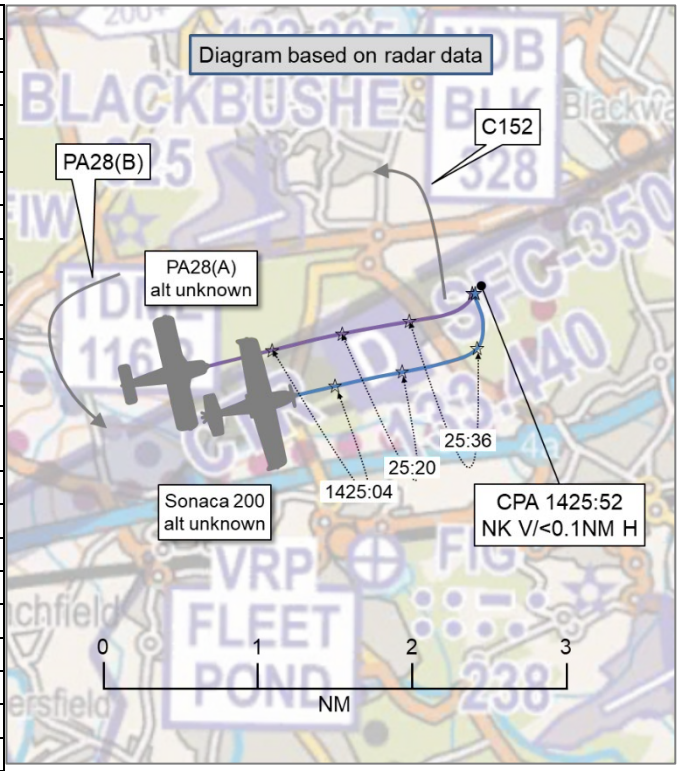
AIRPROX REPORT No 2020156

Date: 25 Oct 2020 Time: 1426Z Position: 5119N 00048W Location: Blackbushe circuit

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	Sonaca 200	PA28(A)
Operator	Civ FW	Civ FW
Airspace	Blackbushe ATZ	Blackbushe ATZ
Class	G	G
Rules	VFR	VFR
Service	AFIS	AFIS
Provider	Blackbushe Info	Blackbushe Info
Altitude/FL	Unknown	Unknown
Transponder	A, S	A, S
Reported		
Colours	Silver	Blue/white
Lighting	Nav, strobes, landing lights	Anti-colls
Conditions	VMC	VMC
Visibility	>10km	NR
Altitude/FL	800ft	500ft
Altimeter	QFE	QFE (985hPa)
Heading	160°	160°
Speed	75kt	75kt
ACAS/TAS	Not fitted	Not fitted
Separation		
Reported	50ft V/50m H	Not Seen
Recorded	NK V/<0.1NM H	



THE SONACA 200 PILOT reports that they had joined the circuit as prescribed in the operating procedures, overhead the upwind RW numbers, having been informed by radio and visually identifying an aircraft on downwind and another on climb-out. They elected to join crosswind before the climb-out traffic (they later learned that was the PA28) had turned crosswind, and determined that the traffic would have plenty of time to initiate any separation required. After completing their downwind leg, they turned left onto base leg when the student sitting in the left-hand seat spotted an aircraft just beneath them. They maintained circuit height as the other aircraft carried out a rapid descent. They had used radio communication throughout, calling north of the airport to join, dead-side with 7010 set, sequencing their aircraft as number two ahead of the aircraft on climb-out and also downwind.

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

THE PA28(A) PILOT reports that they were on the base leg of their 6th and final circuit of the day, descending from 800ft. They were aware of one aircraft in front of them, which was on final. As they descended they heard [the Sonaca pilot] call the Blackbushe Tower stating that their aircraft had just flown beneath them. They were completely unaware of [the Sonaca] being in the circuit; they later learnt that [the Sonaca] joined from the dead-side in front of them when they were on their crosswind leg. With [a C152] still occupying the runway (conducting a touch-and-go) and now knowing that [the Sonaca] was above them, they decided that the safest course of action was to continue with their landing rather than to conduct a go-around. They were fearful that if they opted for a go-around they would be sandwiched between [the C152] and [the Sonaca], hence they thought it safest to land and get out of the circuit. Once [the C152] had taken off and vacated the runway, they landed approximately 1/3rd of the way down the runway; it is a long runway at Blackbushe and they were comfortable that they could safely make the landing.

Once [the Sonaca] had landed they spoke to the pilot (an instructor) and apologised profusely for their lack of situational awareness for not being aware that [the Sonaca] had joined the circuit; they only knew that it was in the circuit when they heard the pilot call to say that they were beneath them.

The pilot has gone over the events of the day several times and they believe that their focus on their own circuit, the aircraft in front of them [the C152] and not wanting to breach the recently introduced local flying area meant that they failed to recognise that [the Sonaca] had joined the circuit. They have discussed the incident with the Chief Instructor at the Flying Club and they agreed that the pilot's lack of SA was a contributory factor.

The pilot was unable to make an assessment of the risk of collision.

THE BLACKBUSHE AFISO reports that [the Sonaca] joined into a busy circuit with [a C152], [PA28(B)], [PA28(A)] and [an R22] (which, at this point in time, was operating on the Helicopter Training Area). As [the Sonaca] flew crosswind, they gave the pilot specific information on traffic positions in the circuit and they fitted-in behind traffic on the downwind leg (the C152). The pilot also noted that they were visual with touch-and-go traffic on climb-out which was [PA28(A)]. At no point did the AFISO have concerns with the Sonaca pilot's join or any proximity to other traffic, and turned their attention back to circuit traffic on final and base ([PA28(B)] and [the C152]). Just a few seconds prior to [the Sonaca pilot] stating on the RT that [PA28(A)] had undertaken them, they had seen two aircraft on base and were looking through binoculars and alerted the assistant to get a better idea of what was happening. [PA28(A)] looked to have flown inside/below [the Sonaca] and ended up on final not far behind it. [PA28(A)] landed at this point (after six circuits) and [the Sonaca pilot] executed a go-around (they had little other choice). Following conversations between the pilots and the tower assistant it was agreed that the pilots would speak with each other.

Factual Background

The weather at Farnborough was recorded as follows:

```
METAR EGLF 251420Z 19008KT 160V220 9999 FEW022CB 12/08 Q0995=
```

Analysis and Investigation

CAA ATSI

The Airprox occurred in the Blackbushe circuit, with the Sonaca 200 having re-joined from the north into a circuit which was already occupied by the PA28 and two other aircraft, a second PA28 [PA28(B)] and a C152 as well as a helicopter in the helicopter training area. The Blackbushe AFISO was providing an Aerodrome Flight Information Service to all aircraft. ATSI had access to reports from both pilots and the AFISO, the Blackbushe RTF and area radar replay recordings from which the screenshots have been taken.

At **1420:42** the Sonaca pilot reported 3NM north for join and was advised by the Blackbushe AFISO that the circuit was left-hand RW25, and they were passed the QFE, all of which was readback correctly (Figure 1). The AFISO then advised the Sonaca pilot that there were four other aircraft in the circuit and requested the pilot to report "dead-side" which was acknowledged by the pilot.

At **1422:20** the Sonaca pilot reported on the dead-side and confirmed they were transponding 7010. The AFISO requested they report downwind which was acknowledged by the pilot (Figure 2).

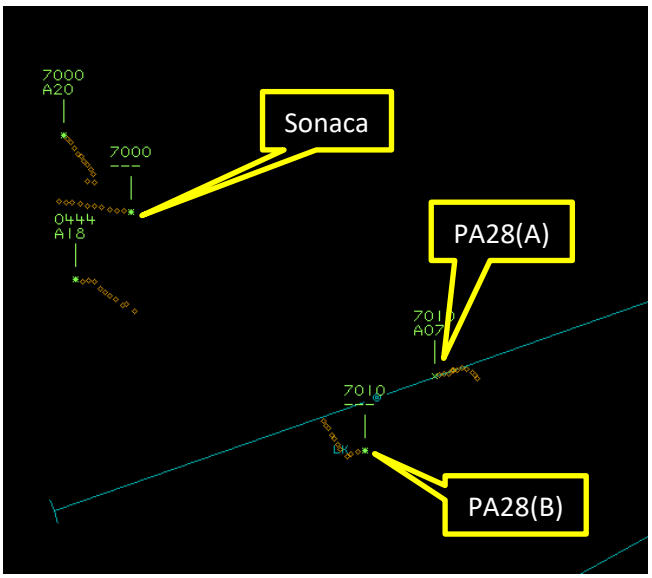


Figure 1 – 1420:42

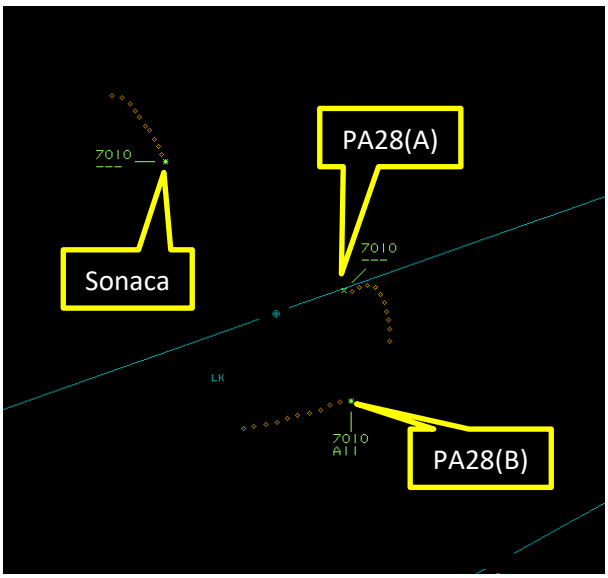


Figure 2 – 1422:20

The AFISO then passed Traffic Information to the Sonaca pilot; "*circuit traffic, one on climb-out, one on final and one on base*", to which the Sonaca pilot replied; "*keep a good lookout and fit in where we can*" (Figure 3). At **1423:19** the AFISO updated the traffic information "*er traffic downwind – appears ahead of you in your two o'clock*". The Sonaca pilot replied; "*visual with the two o'clock traffic, and the one just departed now. I'll fit in with the one on downwind*" (Figure 4).

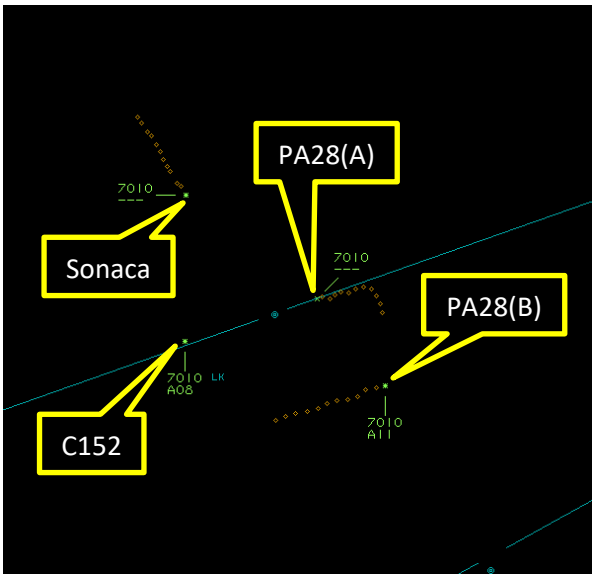


Figure 3 – 1422:36

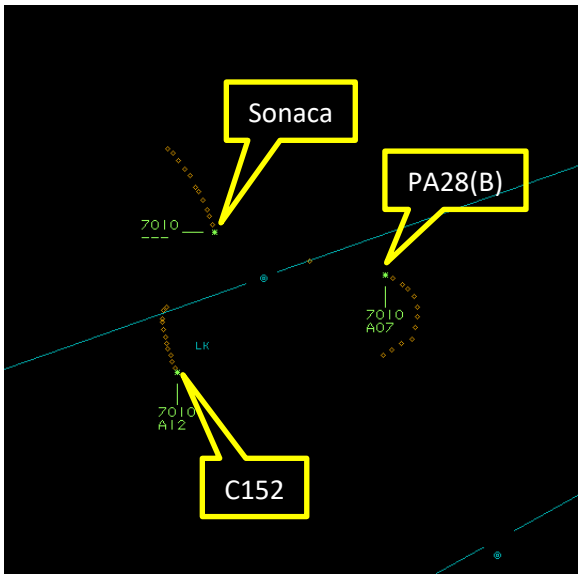


Figure 4 – 1423:19

The PA28(B) pilot reported on final for a touch-and-go at **1423:34**. The C152 pilot reported downwind for a touch-and-go at **1423:52** and was requested to report final (Figure 5). At **1424:34** the PA28(A) pilot reported downwind to land and was asked by the AFISO to report final. Immediately following this the Sonaca pilot reported downwind to land also, and was told "*one ahead – report final*", which was acknowledged by the pilot (Figure 6).

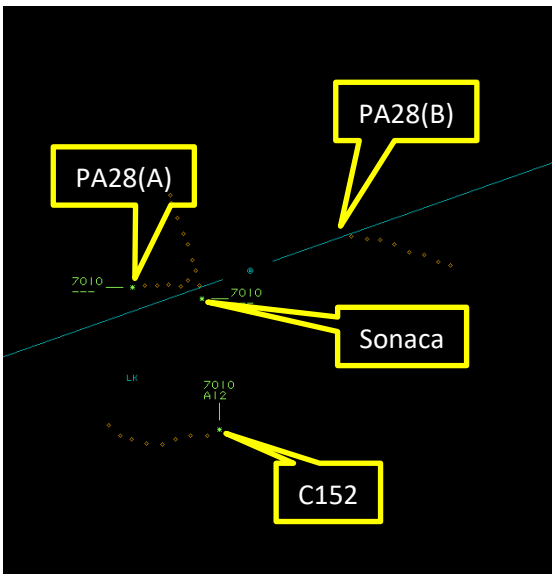


Figure 5 – 1423:52

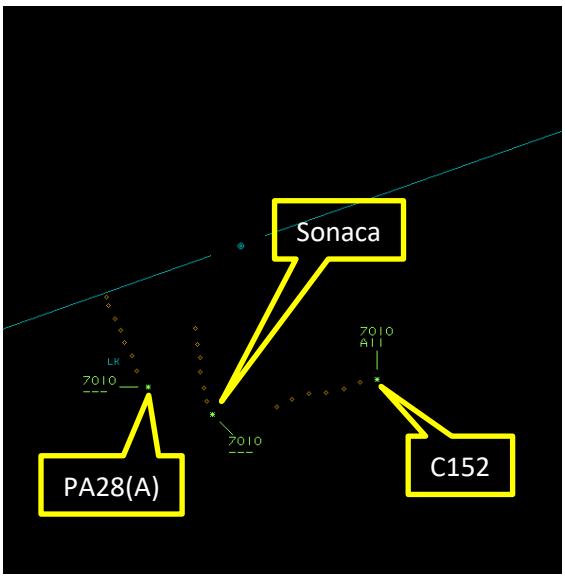


Figure 6 – 1424:34

At **1425:40** the C152 pilot reported on final for a touch and go (Figure 7). CPA occurred at **1425:52** with the aircraft separated laterally by less than 0.1NM (Figure 8).

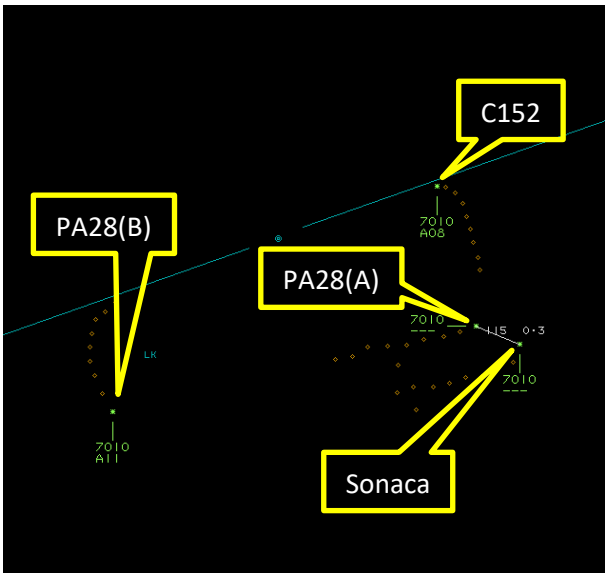


Figure 7 – 1425:40

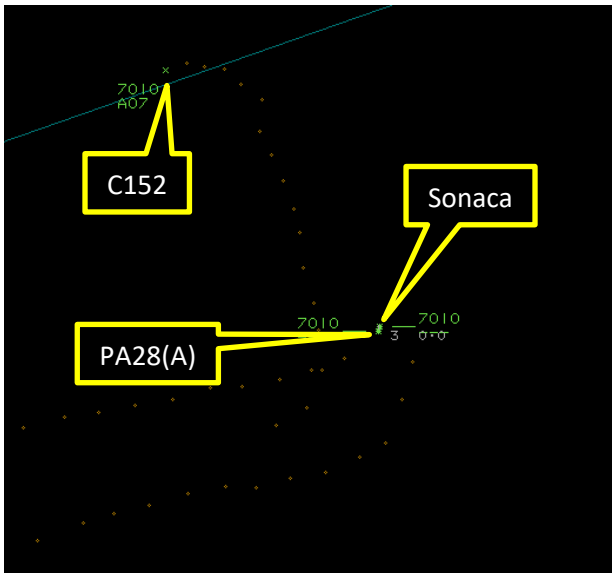


Figure 8 – 1425:52 – CPA

At **1426:13** the pilot of the Sonaca reported "*(Sonaca c/s) is now behind (PA28(A) c/s). I think he's just come underneath me*" (Figure 9). The AFISO acknowledged this, followed by one of the pilots (not identifiable) advising "*not visual*". Then the PA28(A) pilot reported on final and was advised that the runway was occupied with an aircraft conducting a touch-and-go. At **1426:40** the AFISO advised the Sonaca pilot that "*traffic appears underneath you – ahead of you*" to which the Sonaca pilot replied "*yeah, visual now*" (Figure 10).

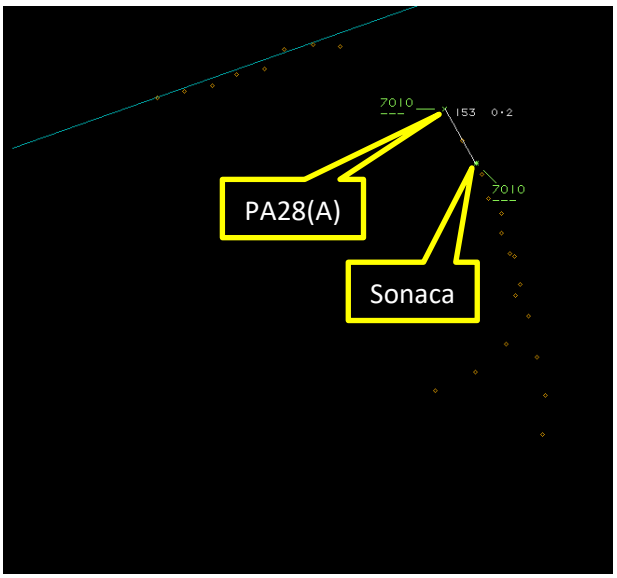


Figure 9 – 1426:13

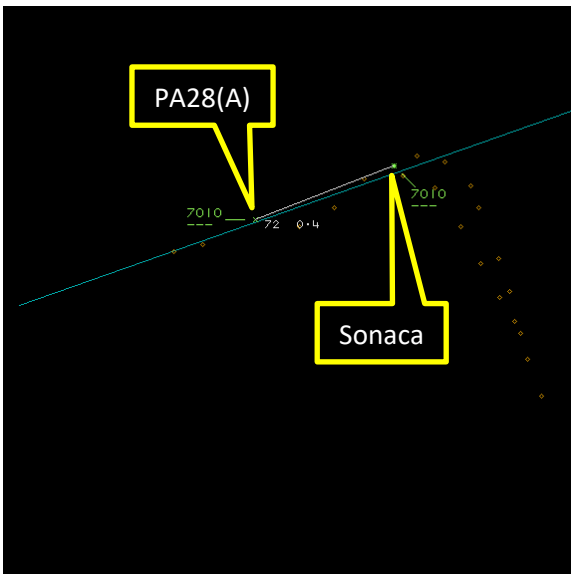


Figure 10 – 1426:40

The pilot of the Sonaca 200 in their written report stated that they had received Traffic Information on an aircraft downwind and one on climb-out and that they had seen both aircraft as a result. They believed they were in the crosswind position before the PA28(A) and that "*the traffic would have plenty of time to initiate any separation required*". When they turned onto base-leg they reported that the student "*sitting in the left-hand seat spotted aircraft just beneath us*" and that they had "*maintained circuit height as other aircraft carried out a rapid descent*".

The pilot of the PA28(A) in their written report stated that "*the other aircraft, (Sonaca c/s), was above me and not seen by me throughout the incident. I only realised that (Sonaca c/s) was in the vicinity when I heard his call to the Tower*". Their "*rapid descent*" reported by the Sonaca pilot was apparently their standard descent in the circuit whilst on base leg, turning onto finals. They had apparently not assimilated the presence of the Sonaca despite that aircraft's pilot having called for join, dead-side and ultimately "*downwind*" just after them.

The AFISO reported that having passed the Traffic Information to the Sonaca pilot, the pilot appeared to position themselves into the circuit between the C152 downwind and the PA28(A) on the climb-out. Their attention was then drawn elsewhere until they saw two aircraft on base-leg and, using binoculars and supported by their assistant, they attempted to re-assess the actual traffic situation.

The unit did not provide an investigation report.

When the Sonaca pilot called crosswind and was provided with Traffic Information on the C152 downwind and PA28(A) in the climb-out, no reciprocal Traffic Information on the Sonaca was passed to the pilot of PA28(A). (Also, when the pilot of PA28(A) called downwind, no Traffic Information was passed on the C152 ahead.) When the Sonaca pilot then called downwind they were advised that there was "*one ahead*", but it cannot be determined if the AFISO was referring to the C152 late downwind, or PA28(A) which was actually behind the Sonaca. As both the PA28(A) and Sonaca pilots continued downwind, neither was apparently aware of their proximity to the other. Had Traffic Information been passed to the PA28(A) pilot on the Sonaca earlier, or the pilot of PA28(A) assimilated the presence of the Sonaca, then the pilot of PA28(A) might have widened their circuit to follow the Sonaca.

Inadequate and imprecise Traffic Information by the AFISO, and a lack of situational awareness by the pilot of PA28(A) contributed to the Sonaca and PA28(A) coming into proximity.

CAP797 The Flight Information Service Officer Manual states:

8.15 Whilst generic traffic information provided to a pilot may be useful to indicate how busy the aerodrome environment is, as the pilot gets closer to the aerodrome and is required to integrate with other traffic, specific traffic information is needed in order to achieve a safe, orderly and expeditious flow of air traffic and to assist pilots in preventing collisions.

8.16 Traffic information shall be described so as to be easily identified by the pilot.

And;

8.18 Traffic information to traffic operating in the vicinity of an aerodrome, and specifically within the ATZ and to flights conducting Instrument Approach Procedures (IAP) shall be issued in a timely manner when, in the judgement of the AFISO, such information is necessary in the interests of safety, or when requested by the aircraft. When a pilot report indicates, or an AFISO considers, that there may be a collision risk, specific traffic information shall be passed to each pilot concerned.

8.19 In addition to the information listed in paragraph 8.94, before entering the traffic circuit an aircraft should be informed of the current traffic circuits and other traffic when necessary.

UKAB Secretariat

The Sonaca 200 and PA28(A) 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]

Summary

An Airprox was reported when a Sonaca 200 and a PA28 flew into proximity in the Blackbushe circuit at 1426Z on Sunday 25th October 2020. Both pilots were operating under VFR in VMC and both were in receipt of an Aerodrome Flight Information Service from Blackbushe Information.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of reports from both pilots, radar photographs/video recordings and a report from the AFISO involved. 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 Sonaca pilot and heard from a GA pilot member that, as the pilot of the aircraft joining the circuit, it was for them to integrate with the other traffic already established in the pattern. Members considered that the Sonaca pilot had correctly integrated – between the Cessna 152 and PA28(A) – as they had proceeded towards their crosswind leg. However, having positioned in front of PA28(A) as its pilot completed their touch-and-go, the Sonaca pilot had only generic situational awareness of the aircraft being behind them (**CF5**) and was unaware of its relative proximity as they followed the Cessna 152 downwind. The Board felt that this had been exacerbated by the AFISO's response to their downwind call of '*one ahead*' which, members considered, had probably been understood by the Sonaca pilot as meaning the Cessna 152. This had meant that the Sonaca pilot had not expected to see PA28(A) appear on their inside as they turned onto their base leg and, as such, had contributed to the late sighting of PA28(A) by the Sonaca pilot, by which time it was too late for them to take any action to increase separation. The Board was

[1] SERA.3205 Proximity.
[2] SERA.3225 Operation on and in the Vicinity of an Aerodrome.

heartened by the actions of the Sonaca pilot in electing to go-around at circuit height, as this action is not often considered by GA pilots (**CF9**).

Turning to the actions of the pilot of PA28(A), and noting that they had been conducting their 6th circuit when the Airprox occurred, some members wondered if a degree of habit had formed whereby the PA28(A) pilot would have expected to have been following the Cessna 152. The Board also agreed with the pilot's reported assessment that their pre-occupation with following the Cessna downwind (albeit on a narrower downwind track than that of the Cessna) and not wanting to risk infringing Farnborough's controlled airspace had led to their becoming distracted (**CF7**) and not assimilating either the presence of the Sonaca in the circuit or its proximity to their aircraft (**CF5**, **CF6**). Members concluded that the PA28(A) pilot's appreciation of the total number of aircraft in the circuit, and their relative position to the Sonaca, had meant that they had been unable to correctly integrate their aircraft into the pattern on the downwind leg (**CF4**). Furthermore, because the pilot had not been expecting there to be another aircraft, aside from their own, on the downwind leg they had not been looking in that direction prior to executing their turn onto base leg and that this had led to them not sighting the Sonaca until after the Airprox had occurred (**CF9**).

The Board then discussed the actions of the Blackbushe AFISO and heard from an ATC member that Blackbushe is a busy airfield where it is often necessary to keep transmissions as short as practicable in order to increase the time available for pilots to make their mandatory circuit calls. Whilst this was not an especially busy circuit for Blackbushe, the light-aircraft fixed-wing circuit had been at capacity and members wondered if the AFISO had stopped short of passing full Traffic Information (including circuit positions) as a matter of habit. The Board considered that there had been the opportunity for the AFISO to pass more detailed Traffic Information to both the Sonaca pilot and to the pilot of the PA28(A) and that the imprecise and/or lack of Traffic Information to the pilots involved had contributed to the Airprox (**CF1**, **CF2**). The Board noted from the AFISO's report that, once they had been content that the Sonaca pilot had integrated correctly into the circuit, the AFISO had then turned their attention to the 2 other aircraft in the circuit that had been on final and base. Members agreed that this had meant that the PA28(A) pilot's turn from crosswind onto downwind had not been seen by the AFISO (**CF3**) and that therefore they had not noticed that the PA28(A) pilot had been flying a narrower downwind leg than the Sonaca pilot and almost abeam the other aircraft. This geometry had meant that, if the Sonaca pilot turned base before the PA28(A) pilot, then the aircraft would inevitably come into conflict.

Finally, the Board discussed the risk involved in this event and members were in agreement that this had been a very close encounter. The NATS radar replay did not display the Mode C information from either aircraft's transponder and this meant that there had been no way to confirm the reported altitudes of either aircraft.[3] However, members felt that it was highly likely that both pilots would have been flying a reasonably accurate circuit profile, leading to an assessment that there would have been very little vertical separation between the 2 aircraft. When coupled with the negligible lateral separation (as observed on the NATS radar replay) and with neither pilot sighting the other aircraft until CPA, the Board concluded that safety had been much reduced and that a risk of collision had existed (**CF8**). Consequently, the Board assigned a Risk Category B to this event.

[3] Whilst there was no suggestion that the pilots had not selected Mode C on, the Board wished to remind pilots of their obligations to select all available modes when their aircraft is equipped with a transponder.

PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK

Contributory Factors:

	2020156		
CF	**Factor**	**Description**	**Amplification**
	Ground Elements		
	• Regulations, Processes, Procedures and Compliance		
1	Human Factors	• ATM Regulatory Deviation	Regulations and/or procedures not fully complied with
	• Situational Awareness and Action		
2	Human Factors	• ANS Traffic Information Provision	TI not provided, inaccurate, inadequate, or late
3	Human Factors	• Distraction - Job Related	Controller engaged in other tasks
	Flight Elements		
	• Tactical Planning and Execution		
4	Human Factors	• Monitoring of Other Aircraft	Did not avoid/conform with the pattern of traffic already formed
	• Situational Awareness of the Conflicting Aircraft and Action		
5	Contextual	• Situational Awareness and Sensory Events	The pilot had generic, late or no Situational Awareness
6	Human Factors	• Understanding/Comprehension	Pilot did not assimilate conflict information
7	Human Factors	• Distraction - Job Related	Pilot engaged in other tasks
	• See and Avoid		
8	Contextual	• Near Airborne Collision with Aircraft, Balloon, Dirigible or Other Piloted Air Vehicle	Piloted air vehicle
9	Human Factors	• Monitoring of Other Aircraft	Non-sighting or effectively a non-sighting by one or both pilots

Degree of Risk: B

Safety Barrier Assessment[4]

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 AFISO did not pass reciprocal Traffic Information on the Sonaca to the pilot of PA28(A).

Situational Awareness of the Confliction and Action were assessed as **partially effective** because the Blackbushe AFISO only passed Traffic Information to the joining Sonaca pilot and then became engaged in monitoring the position of other aircraft on final approach.

Flight Elements:

Tactical Planning and Execution was assessed as **partially effective** because the PA28(A) pilot had not received Traffic Information on the Sonaca and also had not assimilated the presence of the Sonaca through its pilot's radio calls.

Situational Awareness of the Conflicting Aircraft and Action were assessed as **ineffective** because the Sonaca pilot only had a generic understanding of the position of PA28(A), and the PA28(A) pilot was unaware of the presence of the Sonaca in the circuit.

[4] 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 were assessed as **ineffective** because neither pilot saw the other aircraft in time to materially affect the separation.