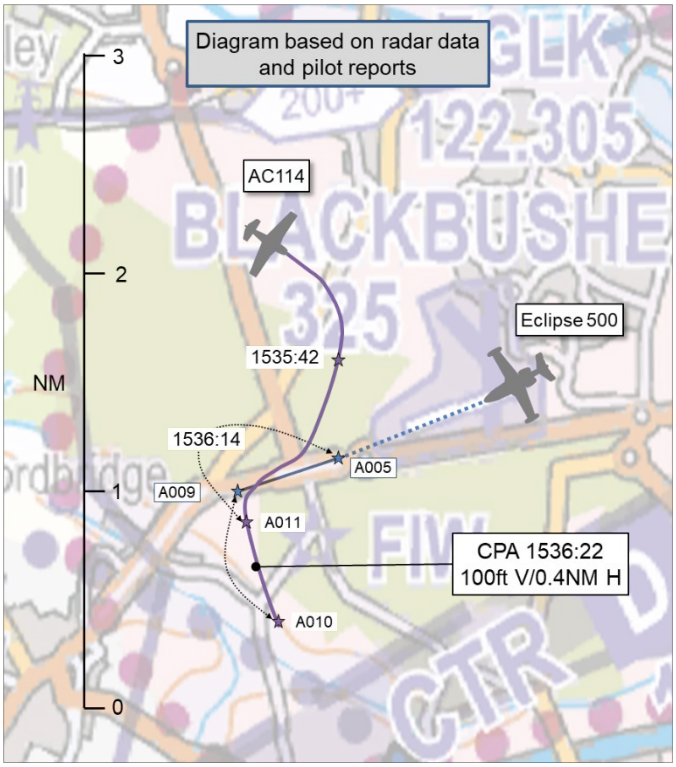
AIRPROX REPORT No 2024151

Date: 26 Jun 2024 Time: 1536Z Position: 5119N 00052W Location: Blackbushe

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	Eclipse 500	AC114
Operator	Civ Comm	Civ FW
Airspace	Blackbushe ATZ	Blackbushe ATZ
Class	G	G
Rules	IFR	VFR
Service	AFIS	AFIS
Provider	Blackbushe Info	Blackbushe Info
Altitude/FL	900ft	1000ft
Transponder	A, C, S+	A, C, S
Reported		
Colours	White	White/Blue
Lighting	Nav, taxi, landing and strobe.	Nav, strobes, and anti-collision.
Conditions	VMC	VMC
Visibility	>10km	5-10km
Altitude/FL	NR	800ft
Altimeter	QNH (1011hPa)	QFE
Heading	250°	180°
Speed	85kt	110kt
ACAS/TAS	TCAS I	Other
Alert	TA	None
Separation at CPA		
Reported	300ft V/0.3NM H	NK V/NK H
Recorded	100ft V/0.4NM H	



THE ECLIPSE 500 PILOT reports that, on the take-off roll at rotate, traffic was seen passing right-to-left across their climb-out path. They believed it to have been joining overhead, but was actually slightly to the west of the overhead. Their climb pitch was limited to 5° rather than 10° until clear of traffic with early thrust reduction made to reduce their rate of climb. It was a busy mixed traffic environment with an IFR departure into uncontrolled airspace.

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

THE AC114 PILOT reports that they joined the Blackbushe circuit deadside from the northwest, first calling Blackbushe Information at about 10NM as usual. After performing an orbit about 5NM out for separation with a PA28 joining from the same direction, they entered the ATZ at or just above 800ft QFE to join crosswind. Slowing down to follow a microlight as number 3, they flew a wide circuit extending downwind as far and as slowly as possible to allow for the slower microlight before turning base and then final for an uneventful arrival. They think they remember the Tower talking about a jet to someone else but that was in the background. Nothing about the flight stands out in memory as notable.

THE BLACKBUSHE AFISO reports as FISO on duty at the time, they were not aware of an Airprox. The departure of [the Eclipse 500] from Blackbushe was dealt with in accordance with usual procedures and relayed a clearance from Farnborough to the west not above altitude 3000ft.

[The Eclipse 500 pilot] was passed all Traffic Information on relevant traffic when they departed, and was then handed to Farnborough. For the occurrence with [the AC114], this aircraft was entering the visual circuit and was provided Traffic Information on the jet shortly to depart. The jet [pilot] was provided information on a departure ahead to remain in the circuit and the [AC114] descending on the deadside.

Factual Background

The weather at Farnborough was recorded as follows:

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METAR EGLF 261520Z AUTO VRB05KT 9999 NCD 28/12 Q1010
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Analysis and Investigation

Blackbushe Airport Unit Safety Officer[1]

Blackbushe Airport was not made aware of the occurrence at the time, but has conducted a brief unit investigation as below, including reviewing recordings of the Blackbushe frequency as well as ADS-B traces of the two aircraft.

From the wording of the Airprox notification they understand the reports were both reported by the crew of [the Eclipse 500]. The occurrences were not reported to them at the time or since by the operator. The operator [is familiar with] Blackbushe. From their records, the PIC of [the Eclipse 500] has operated into and out of Blackbushe on 3 previous occasions in the past 12 months onboard Eclipse 500 aircraft from the same fleet, but may also have operated other aircraft to or from Blackbushe. They contacted the operator to understand their concerns. In a telephone discussion with the operator's Safety Officer, they were informed that, whilst the operator did not feel the distance between aircraft in either occurrence was particularly close, they did record the occurrences with a concern of "What if?". The [Safety Officer] informed them that they had consulted informally with the AAIB and were recommended to file an Airprox report.

Timeline:

1520:20 (Eclipse 500): *Blackbushe, [callsign] request engine start, air temperature and QNH*

1520:30 (FISO): *[Eclipse 500 callsign] Blackbushe Information good afternoon, readability 5, start is approved outside air temp is plus 28 RW25 left-hand circuit QNH 1011.*

1520:42 (Eclipse 500): *25 left, 1011 [callsign]*

1522:30 - 15:22:40 unrelated calls

1522:31 (Eclipse 500): *[callsign] request departure clearance [destination]*

1522:47 (FISO): *[Eclipse 500 callsign] roger, we have just been on the phone to London and they have said they will call us back in 5 minutes, will call you back when we have it.*

1522:50 (Eclipse 500): *No problem, [callsign]*

1522:56 – 1524:49 unrelated calls from arriving, departing and taxiing aircraft.

1525:29 (Eclipse 500): *[callsign] request taxi*

1525:39 (FISO): *[Eclipse 500 callsign] roger right turn, taxi holding point A1, I've still not heard anything on your clearance, I'll call you back.*

1525:35 (Eclipse 500): *Right turn A1 [callsign].*

1526:27-1529:29 unrelated calls from 2 arriving aircraft.

[1] UKAB note: This investigation covered 2 Airprox reports covering the departing [Eclipse 500] and has been redacted to provide pertinent information to this Airprox.

1529:31 (AC114): *Blackbushe information [callsign] 9NM to the west inbound requesting airfield information.*

1529:38 (FISO): *Blackbushe Information, good afternoon, RW25 left hand circuit, QFE 999hPa, Basic Service, report entering the ATZ.*

1529:46 (AC114): *RW25 left hand circuit, err, 999hPa is the QFE and wilco [callsign].*

1529:58-1530:20 other unrelated calls on further arrivals.

1530:47 <2 second clip, no transmission picked up, suspected to be Blackbushe Information contacting [the Eclipse 500]>

1530:51 (Eclipse 500): *Go ahead [callsign*].

1530:54 (FISO): *So, we've had a call back from London, we're just waiting on Farnborough now so I'll give you a call back apologies for the delay.*

1531:03 (Eclipse 500):*Thank you [callsign].*

1531:08-1531:20 unrelated circuit calls.

1531:38 (AC114): *[callsign] has the PA28 in sight, ½ a mile in front.*

1531:43-1532:08 unrelated circuit details.

1532:10 (FISO): *Sorry [AC114 callsign] was that you calling?*

1532:12 (AC114): *Affirm, I was just reporting the traffic in sight, I'm now doing a left orbit for space.*

1532:15 (FISO): *roger many thanks*.

1532:17 (FISO): *[Eclipse 500 callsign] I finally have your clearance if you're ready to copy?*

1532:20 (Eclipse 500): *Affirmative [callsign].*

1532:22 (FISO): [Eclipse 500 callsign and clearance]

1532:44 (Eclipse 500): [read back clearance]

1532:58 (FISO): *[Eclipse 500 callsign] the updated QNH is now 1010*.

1533:01 (Eclipse 500): *1010 [callsign].*

15:33:05 (FISO): *your readback is correct report fully ready for departure.*

15:33:09 (Eclipse 500): *Wilco [callsign].*

1533:14-1533:52 unrelated calls, landing, parking and ATZ entry.

1533:58 (Eclipse 500): *[callsign] ready at Alpha 1.*

1534:02 (FISO): *[Eclipse 500 callsign] roger hold position we are just waiting your release from Farnborough.*

1534:06 (Eclipse 500): *Hold position Alpha 1 [callsign].*

1534:22 (FISO): *[Eclipse 500 callsign] report lined up Runway 25.*

1534:25 (Eclipse 500): *Wilco [callsign].*

1534:43 (AC114): *entering the ATZ err squawking 7010*

1534:47 (FISO): *report downwind circuit traffic is a PA28 just turning downwind now, [S200] on the climb-out, and I will have IFR Eclipse jet [(Eclipse 500)] traffic to depart off [RW]25 to the west to altitude 3000ft.*

1535:00 (AC114): *I am visual with the traffic entering downwind and err copy the other traffic [callsign] and wilco.*

1535:02 (FISO): *[Eclipse 500 callsign] Traffic Information [S200] on the climb-out to turn left to remain in the circuit, I've got [AC114] traffic descending deadside, Farnborough have released you, surface wind is variable, [RW] 25, take off your discretion.*

1535:16 (Eclipse 500): *Take off our discretion [callsign].*

1535:20 unrelated aircraft call.

1536:16 (FISO): *[Eclipse 500 callsign] contact Farnborough Radar now 134.355 goodbye.*

1536:20 (FISO): *134.355 bye bye [Eclipse 500 callsign].*

1536:41-1537:02 Various circuit calls.

1537:08 (AC114) *[callsign] is downwind for [RW]25 and full stop.*

An overlay in this situation was not particularly helpful, but by noting the first return on the [Eclipse 500] trace [they noted that] the aircraft had lifted from the end of the runway at 1536:01 and showed an altitude of approximately 450ft which, given Blackbushe's elevation ([325ft)], would be approximately 125ft above the ground. By contrast, [the AC114] passed over the extended runway centreline at approximately 1535:58 (slightly before [the Eclipse 500]) and its altitude was shown as 1275ft, approximately 950ft above the ground and 825ft above [the Eclipse 500].

In a clip from the airport Weather Cam, which commenced at 1535:30 [the AC114] could be seen transiting the picture from right-to-left, [the Eclipse 500] could then be seen starting its departure roll. In a clip from a camera mounted on the tower, which commenced at 1535:00, [the AC114] could be seen faintly at approximately 20sec into the clip, just to the left of a hangar logo. At this point [the Eclipse 500] was just commencing its departure roll. In a clip from a camera mounted on the flying school, which commenced at 1535:30, [the AC114] could be seen faintly from the start of the clip passing behind the end of the hangar's logo. At this point [the Eclipse 500] was just commencing its departure roll. Unfortunately, due to the height [the AC114] was operating at, none of the cameras effectively captured it as it crossed the runway, but it did demonstrate that there was a significant vertical and lateral separation between the aircraft.

Review: IFR departures from Blackbushe are relayed a clearance from Terminal Control/ Farnborough. These will follow a standard structure when departing from each runway. For RW25, this clearance is: Farnborough instructs "callsign" to depart on track to the west remaining outside Controlled Airspace, climb to altitude 3000ft, squawk xxxx, QNH yyyy. Next frequency Farnborough Radar 134.355. [The Eclipse 500 pilot] was provided with this clearance, along with relevant Traffic Information on an S200 which departed ahead and was to remain in the circuit, and on [the AC114] descending on the deadside.

In [the unit] assessment [it was considered that this] occurrence [had not] resulted in a compromise in aircraft safety. Without seeing the [Eclipse 500 pilot's] account or receiving their perspective, they were unable to make a complete assessment of the root cause.

Information was provided to [the pilots of] both aircraft on each other. [The AC114 pilot] read back this information whereas [the Eclipse 500 pilot] did not. [The Eclipse 500] commenced its take off as [the AC114] was crossing the end of the runway at 950ft, and [the AC114] was on the crosswind leg by the time [the Eclipse 500] reached the end of the runway.

With the benefit of hindsight, it was considered that potentially the pilot of [the Eclipse 500] did not appreciate the information provided by the FISO on [the AC114] meant that [the AC114] would be joining the circuit from the deadside. It was noted, however, that the pilot was not unfamiliar with Blackbushe.

[Blackbushe] will undertake to provide a copy of [the unit's safety] report to FISOs and recommend to them that they make it clear to departing aircraft, by using plain language, if necessary, that joining aircraft on the deadside can be expected to cross the runway at circuit height so as not to cause alarm. Otherwise, new procedures were not required.

CAA ATSI

A review of the NATS radar replay and R/T transcripts was made, and it was noted that the exact time of CPA could not be established from the radar replay. The screenshot below displays the AC114 very slightly north of the climb-out lane at time 1535:56, crossing from north-to-south, indicating altitude 1200ft QNH. The AC114 pilot had initially been following a track that would take them much closer to the airfield, however, they made a wide right turn when they were still to the north of the climb-out lane, appearing to be positioning themselves to integrate into the circuit pattern already formed by the PA28 and Sonaca that were ahead of them (Figure 1).

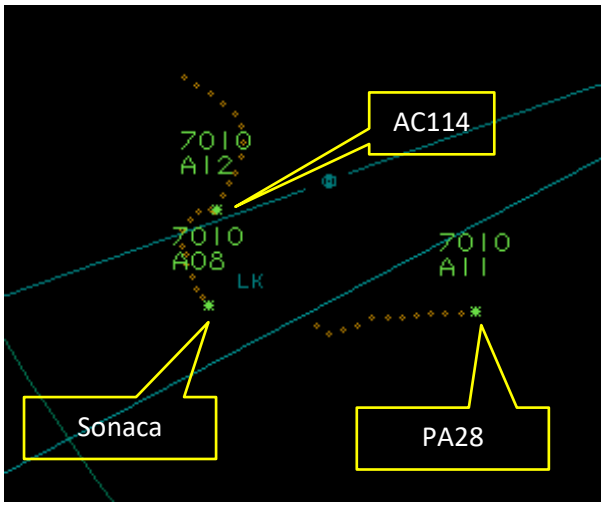

Figure 1 Time 1535:56 AC114 integrating in circuit.

Blackbushe reported that the Eclipse 500 was airborne at 1536:01, however the aircraft did not display on the radar replay until 1536:11, when they were indicating altitude 600ft QNH. It seems likely that the AC114 was passing through the climb-out lane when the Eclipse 500 was lifting from the runway (Figure 2).

Analysis: The AC114 pilot had been passed and acknowledged the Traffic Information on the Eclipse 500 departing, at 1535:00.

The Eclipse 500 pilot was passed Traffic Information on the AC114 at 1535:16 when they were lined up on the runway and had been released for take-off. The pilot did not acknowledge the Traffic Information. The Traffic Information passed to both pilots was timely and accurate.

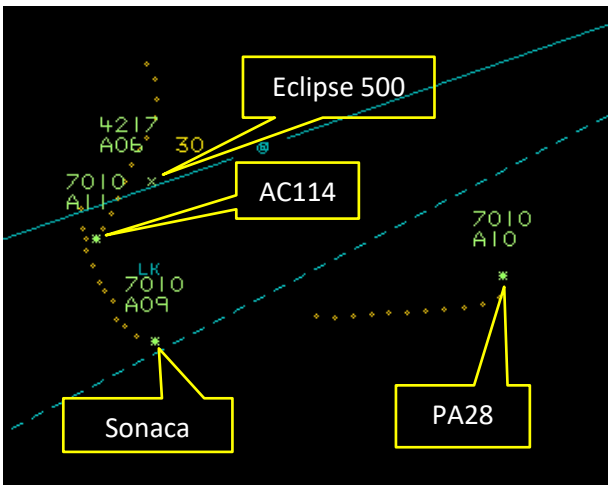

Figure 2 – Time 1536:11 with the Eclipse 500 displaying

UKAB Secretariat

An analysis of the NATS radar reply was undertaken and both aircraft were positively identified using Mode S data. The Eclipse 500 first appeared at 1536:10 at 500ft and the AC114 was seen on the crosswind leg at 1100ft, as the Eclipse 500 was taking off (Figure 3).

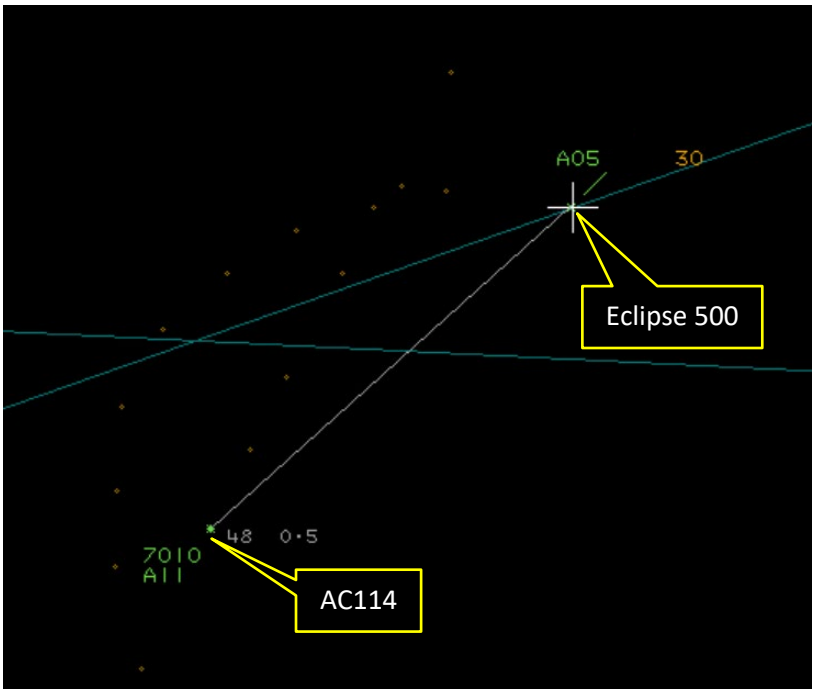

Figure 3 – Time 1536:10 First appearance of the Eclipse 500, separation 0.5NM and 600ft.

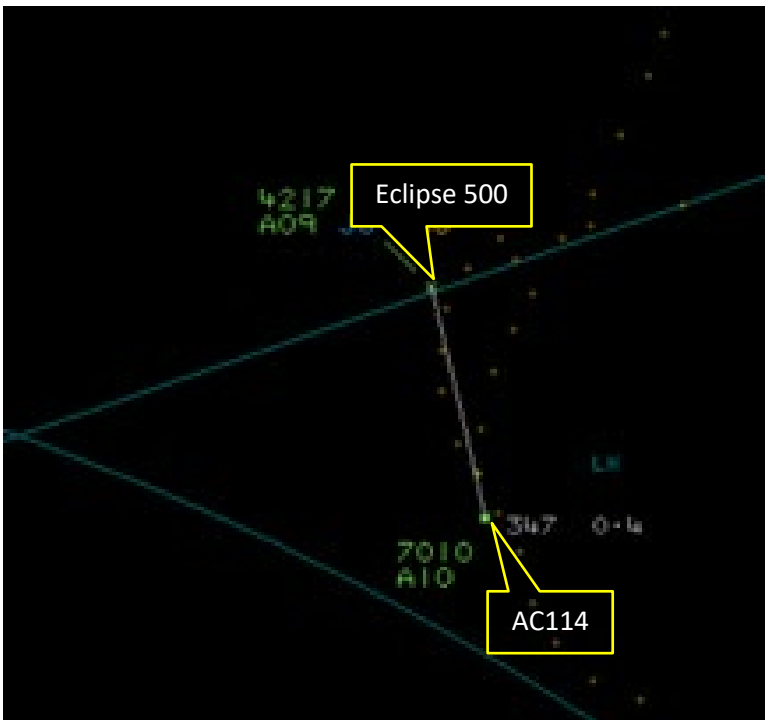

Figure 4 - Time 1536:26 CPA separation 0.4NM and 100ft

CPA was seen to have occurred at 1536:26 with a separation of 0.4NM and 100ft (Figure 2)

The Eclipse 500 and AC114 pilots shared an equal responsibility for collision avoidance and not to operate in such proximity to other aircraft as to create a collision hazard.[2] 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.[3]

Summary

An Airprox was reported when an Eclipse 500 and a AC114 flew into proximity at Blackbushe at 1536Z on Wednesday 26th June 2024. The Eclipse 500 pilot was operating under IFR in VMC and the AC114 pilot was operating under VFR in VMC; both pilots 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, a report from the AFISO 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.

The Board first discussed the actions of the Blackbushe AFISO and agreed that the correct processes had been followed with appropriate Traffic Information passed accordingly.

The Board then discussed the actions of the AC114 pilot, and noted that the pilot's join had appeared to have been slightly wider than expected. Members agreed, however, that the AC114 pilot had correctly positioned their aircraft to conform with the circuit traffic pattern already established.

Turning their attention to the Eclipse 500 pilot, the Board agreed that they had only had generic situational awareness of the position of the arriving AC114 from received radio transmissions and that they had not assimilated the position of it in relation to a potential conflict on their departure. The Board

[2] (UK) SERA.3205 Proximity.
[3] (UK) SERA.3225 Operation on and in the Vicinity of an Aerodrome.

was heartened to note that the Eclipse 500's TCAS had displayed the AC114 as a TA and had alerted the pilot to its position, enabling the pilot to adapt their take-off plan by reducing their climb-rate.

In making their assessment of risk, the Board agreed that the Eclipse 500 pilot had been concerned by the proximity of the AC114 during their take-off and taken appropriate action to reduce the closure rate of the 2 aircraft. Members were therefore satisfied that there had been sufficient separation between the aircraft and that there had been no risk of collision. It was therefore agreed that normal safety parameters had pertained and, as such, the Board assigned Risk Category E to this event. Members agreed the following factors (detailed in Part C) had contributed to this Airprox:

CF1. The Eclipse 500 pilot had only had generic situation awareness of the position of the arriving AC114**.**

CF2. The Eclipse 500 pilot had not assimilated the position of the AC114 joining from the deadside.

CF3. The Eclipse 500 TCAS had provided the pilot with a TA.

CF4. The Eclipse 500 pilot had been concerned by the proximity of the AC114.

PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK

Contributory Factors:

	2024151			
CF	**Factor**	**Description**	**ECCAIRS Amplification**	**UKAB Amplification**
	Flight Elements			
	• Situational Awareness of the Conflicting Aircraft and Action			
1	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
2	Human Factors	• Understanding/ Comprehension	Events involving flight crew that did not understand or comprehend a situation or instruction	Pilot did not assimilate conflict information
	• Electronic Warning System Operation and Compliance			
3	Contextual	• ACAS/TCAS TA	An event involving a genuine airborne collision avoidance system/traffic alert and collision avoidance system traffic advisory warning triggered	
	• See and Avoid			
4	Human Factors	• Perception of Visual Information	Events involving flight crew incorrectly perceiving a situation visually and then taking the wrong course of action or path of movement	Pilot was concerned by the proximity of the other aircraft

Degree of Risk: E.

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:

Flight Elements:

Situational Awareness of the Conflicting Aircraft and Action were assessed as **partially effective** because the Eclipse 500 pilot had only had generic situational awareness of the position

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

of the AC114, and that they had not assimilated the AC114's arrival path prior to starting their take-off run.