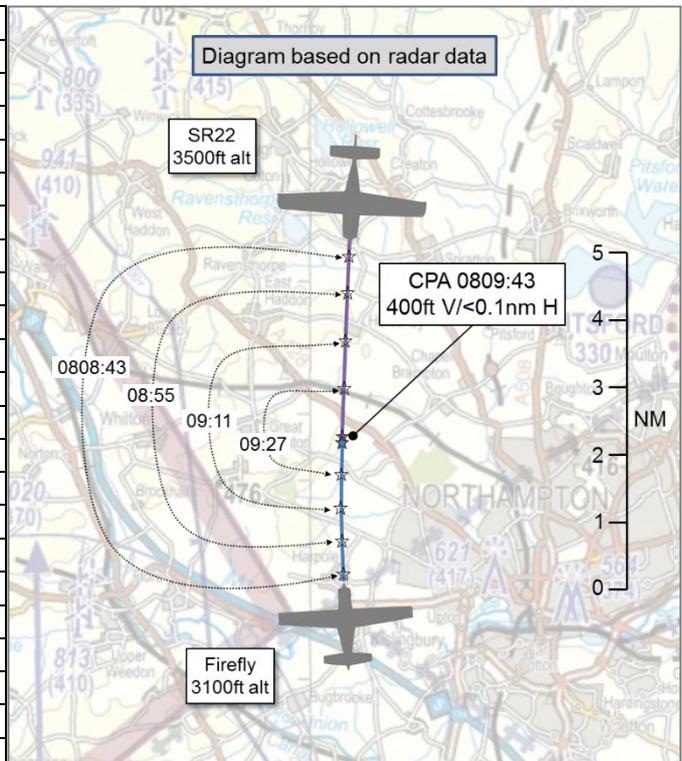


**AIRPROX REPORT No 2019280**

Date: 19 Sep 2019 Time: 0810Z Position: 5217N 00059W Location: 2.5nm NW of Northampton

**PART A: SUMMARY OF INFORMATION REPORTED TO UKAB**

Recorded	Aircraft 1	Aircraft 2
Aircraft	Slingsby Firefly	Cirrus SR22
Operator	Civ FW	Civ Comm
Airspace	London FIR	London FIR
Class	G	G
Rules	VFR	VFR
Service	Basic	Basic
Provider	Birmingham Radar	London Info
Altitude/FL	A031	A035
Transponder	A, C, S	A, C, S
<b>Reported</b>		
Colours	White	
Lighting	Strobes	
Conditions	VMC	VMC
Visibility	25km	
Altitude/FL	3300ft	
Altimeter	QNH (1032hPa)	
Heading	360°	
Speed	120kt	
ACAS/TAS	Not fitted	Unknown
Alert	N/A	Unknown
<b>Separation</b>		
Reported	200ft V/0m H	NR
Recorded	400ft V/<0.1nm H	



**THE SLINGSBY FIREFLY PILOT** reports that he was returning to his home airfield on an hours-building sortie, had agreed a Basic Service with Birmingham Radar and that the frequency seemed quiet. He first spotted the Cirrus when it was in his 12 o'clock at a range of approximately 500m. He deemed that 'slight' avoiding action was necessary, so he descended to increase separation. The pilot recalls that the first thing that alerted him to the presence of the other aircraft was his lookout, and he reported the Airprox on the radio.

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

**THE CIRRUS SR22 PILOT** did not respond to any requests to submit a report.

**THE BIRMINGHAM CONTROLLER** reports that they were working the Slingsby Firefly under a Basic Service. At 0810, the pilot of the Firefly stated that he would have to file an Airprox against an aircraft that flew 100ft above him in the opposite direction. The controller asked him to report his position and he reported 10nm NE of Daventry. The controller identified the aircraft that the Firefly pilot was referring to as a Cirrus SR22.

The controller did not make an assessment of the risk of collision.

**THE LONDON FISO** was not requested to submit a report by NATS Swanwick due to the time elapsed between the event and the notification thereof. [NATS were notified of the Airprox on 16th December 2019. Due to the time between the event and notification, together with the absence of any pilot report on the R/T, it was unlikely that the FISO would recall the incident or that a Unit Investigation would yield any value].

## Factual Background

The weather at Birmingham Airport was recorded as follows:

METAR EGBB 190820Z VRB01KT CAVOK 13/10 Q1032=

## Analysis and Investigation

### Birmingham Airport ATC Investigation

08:05:35 - The Slingsby Firefly pilot calls Birmingham Radar "*Firefly C/S Basic Service*".

The Radar controller responds "*Pass your message*".

Firefly pilot "*Firefly C/S is a Slingsby Firefly, 1 person on board, currently 5 miles North of Turweston, currently maintaining 3300ft on 1032 from RAF Benson, routing to Leicester, requesting a Basic Service*".

Birmingham Radar controller "*Firefly C/S Basic Service*".

08:08:46 - STCA alert activates on the Cirrus SR22 and 7000 squawk to the SE.

08:09:55 - Firefly pilot "*I've just had an Airprox with another single-engine fixed-wing, it went overhead, above me by about 100ft*".

Birmingham Radar controller "*Firefly C/S roger, just report your position*".

Firefly pilot "*Currently I am 5 miles south of Goldsborough or approximately 10 miles north of Daventry*".

It is observed on the radar replay that the Radar controller interrogates the Mode S.

08:10:31 - Birmingham Radar controller "*Firefly C/S you have been identified by your Mode S, I can see the other aircraft as well, it's indicating about 3 or 4 hundred feet above*".

Firefly pilot "*Affirm, I didn't feel like I was going to hit him but I definitely felt like I had to move*".

Birmingham Radar controller "*Roger*".

08:11:56 - Firefly pilot "*I'll continue now with Leicester*".

In summary, the Firefly pilot calls Birmingham Radar to request a Basic service, aircraft and route details are passed, a Basic Service is granted, the aircraft is not identified. STCA alert is activated to the South East and the pilot of the Firefly informs the Radar controller they have had an Airprox with an aircraft passing approximately 100ft above. The pilot did not feel at risk of collision but did feel he should move out of the way. The Radar controller then requests a position report and states that he can see the other aircraft, stating it is indicating 3 or 400ft above. The other aircraft is identified via Mode S as a Cirrus SR22.

### NATS Safety Investigations

The Cirrus SR22 pilot was in receipt of a Basic Service from London Information and had requested clearance to enter Controlled Airspace in accordance with the filed flight plan. The aircraft came into close proximity with an aircraft squawking 7000, the Slingsby Firefly, whilst operating outside Controlled Airspace. No reference was made to an Airprox by the pilot of the SR22 over the R/T.

The pilot of the SR22 called on the London Information frequency at 08:04:06 (all times UTC) and was initially requested to standby as the Flight Information Service Officer (FISO) was making other

R/T and telephone calls at the time. At this time, the Firefly was 27nm south of the SR22, squawking the Oxford Approach Basic Service conspicuity code of 4520. The Mode A code of the Firefly changed to 7000 at 08:05:07. The London Information FISO subsequently asked the pilot of the SR22 to pass their message. The pilot requested activation of their flight plan, together with a clearance to enter Controlled Airspace. At 08:06:15, the pilot was given a squawk of 0027, a Basic Service and instructed to remain outside Controlled Airspace. During this R/T exchange, the pilot confirmed that they were maintaining 3500ft on QNH 1031hPa.

Both aircraft continued along their respective tracks, coming into close proximity approximately 2.5nm NW of Northampton. CPA occurred at 08:09:43 and was shown as 0.1nm and 400 feet. However, extrapolation between radar sweeps would indicate the aircraft passed with no lateral separation (Figure 1).

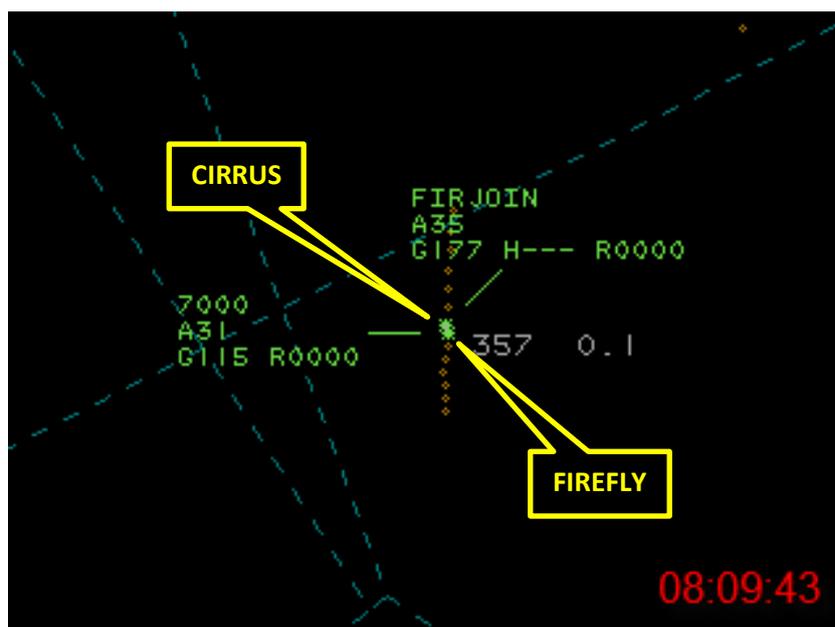


Figure 1 – CPA

At 08:09:50, shortly after CPA had occurred, the London Information FISO made a transmission to the pilot of the SR22, the pilot responded with “pass your message”. An exchange took place over the following 40 secs where the FISO passed the aircraft’s joining clearance and the pilot completed a correct readback. The exchange concluded and communication with the pilot of the SR22 was transferred to London Terminal Control. No mention of the Airprox was made over the R/T by the pilot of the SR22. The pilot of the Firefly did not make contact with any London Control or London Information frequencies.

London Information provides Basic and Alerting Services only, and is not equipped with radar. The pilot of the Firefly was not in contact with London Information, therefore the FISO was unaware of the aircraft’s presence.

### UKAB Secretariat

The Slingsby Firefly and Cirrus SR22 pilots shared an equal responsibility for collision avoidance and not to operate in such proximity to other aircraft as to create a collision hazard.<sup>1</sup> If the incident geometry is considered as head-on or nearly so then both pilots were required to turn to the right.<sup>2</sup>

<sup>1</sup> SERA.3205 Proximity.

<sup>2</sup> SERA.3210 Right-of-way (c)(1) Approaching head-on.

## Summary

An Airprox was reported when a Slingsby Firefly and a Cirrus SR22 flew into proximity 2½nm NW of Northampton at 0810hrs on Thursday 19<sup>th</sup> September 2019. Both pilots were operating under VFR in VMC, the Firefly pilot in receipt of a Basic Service from Birmingham Radar and the Cirrus pilot in receipt of a Basic Service from London Information.

### **PART B: SUMMARY OF THE BOARD'S DISCUSSIONS**

Information available consisted of a report from the pilots of the Slingsby Firefly, transcripts of the relevant RT frequencies, radar photographs/video recordings, a report from the Birmingham air traffic controller involved and reports from the appropriate ATC authorities. Relevant contributory factors mentioned during the Board's discussions are highlighted within the text in bold, with the numbers referring to the Contributory Factors table displayed in Part C.

Due to the exceptional circumstances presented by the coronavirus pandemic, this incident was assessed as part of a 'virtual' UK Airprox Board meeting where members provided a combination of written contributions and dial-in/VTC comments. Although not all Board members were present for the entirety of the meeting and, as a result, the usual wide-ranging discussions involving all Board members were more limited, sufficient engagement was achieved to enable a formal assessment to be agreed along with the following associated comments.

The Board first considered the actions of the Firefly pilot and was heartened to hear that he had agreed an Air Traffic Service with a local surveillance-equipped airfield. However, members noted that, rather than opt for a Basic Service, which provides no guarantee of monitoring by the controller, the Firefly pilot would have been better served in requesting a Traffic Service; if a Traffic Service is agreed, the controller is then required to maintain situational awareness on the aircraft (**CF3**). As it was, the controller had not passed Traffic Information on the Cirrus to the Firefly pilot and he therefore had no awareness of its presence (**CF4**), effectively removing this barrier. Members discussed the constant relative bearing of the 2 aircraft and agreed that this would have hampered both pilots' visual acquisition of the other aircraft and that this was contributory to the Airprox (**CF5**). However, the Firefly pilot had eventually seen the approaching Cirrus, albeit at a closer range than ideal, and was concerned enough by its proximity (**CF6**) to initiate a slight descent to further increase the vertical separation.

Turning to the actions of the controllers, members quickly agreed that there was no opportunity for the London FISO to pass Traffic Information to the Cirrus pilot because, working in a non-surveillance environment, he had had no SA of the Firefly's presence. However, although the Birmingham controller was not required to monitor the progress of the Firefly under the terms of a Basic Service (**CF1**), the Board considered that there had been an opportunity for the Birmingham controller to pass Traffic Information to the Firefly pilot, particularly in light of the fact that the controller's Short Term Conflict Alert (STCA) had triggered on the 2 aircraft. Controller members explained that STCA will often alert on conflicts within Class G airspace but that, usually, the controller's focus is on the aircraft within controlled airspace and these alerts are considered to be 'nuisance' alerts. Ultimately, the Board agreed that the alert should have at least drawn the controller's attention momentarily and, because the alert was not acted upon (**CF2**), this had been a contributory factor in the Airprox.

When considering the risk, the Board regretted that the Cirrus pilot had not responded to requests for information because this made the task of analysis difficult without his perspective. The Board took into account that neither pilot had had situational awareness of the presence of the other aircraft, and that it seemed that neither pilot had seen the other aircraft in time to materially increase CPA. Acknowledging that events had unfolded largely without input from either pilot, members noted that the Firefly and Cirrus had passed each other with at least 400ft of vertical separation, and that the Firefly pilot was taking action to increase this separation still further. The Board considered that it was possible that the Cirrus pilot had seen the Firefly and was comfortable with the vertical separation. Unfortunately, without his perception of the event, it was not possible to conclusively understand if this had been the case. Ultimately, the Board agreed that, although safety had been degraded, there had been no actual risk of collision and assigned a Risk Category C to this event.

**PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK****Contributory Factors:**

	2019280		
CF	Factor	Description	Amplification
	<b>Ground Elements</b>		
	• <b>Situational Awareness and Action</b>		
1	Contextual	• Situational Awareness and Sensory Events	Not required to monitor the aircraft under the agreed service
	• <b>Electronic Warning System Operation and Compliance</b>		
2		• Any other event	STCA alerted but was not used
	<b>Flight Elements</b>		
	• <b>Tactical Planning and Execution</b>		
3	Human Factors	• Communications by Flight Crew with ANS	Apt ATS not requested by pilot
	• <b>Situational Awareness of the Conflicting Aircraft and Action</b>		
4	Contextual	• Situational Awareness and Sensory Events	Generic, late, no or incorrect Situational Awareness
	• <b>See and Avoid</b>		
5	Human Factors	• Monitoring of Other Aircraft	Late-sighting by one or both pilots
6	Human Factors	• Perception of Visual Information	Pilot was concerned by the proximity of the other aircraft

**Degree of Risk:** C

**Safety Barrier Assessment<sup>3</sup>**

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

**Ground Elements:**

**Situational Awareness of the Confliction and Action** were assessed as **not used** because the controllers were not required to monitor the aircraft under the terms of the agreed Service.

**Electronic Warning System Operation and Compliance** were assessed as **ineffective** because, although the Birmingham controller was not required to monitor the aircraft under the terms of the agreed Service, the STCA alerted but was not acted upon by the controller.

**Flight Elements:**

**Tactical Planning and Execution** was assessed as **partially effective** because the Firefly pilot, having secured a Basic Service from Birmingham Radar, could have requested to upgrade to a surveillance-based Service.

**Situational Awareness of the Conflicting Aircraft and Action** were assessed as **ineffective** because neither pilot had any prior warning of the presence of the other aircraft.

<sup>3</sup> 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 **partially effective** because, although the Firefly pilot sighted the Cirrus at a range of approximately 500m, this was probably too late for him to be able to materially increase the CPA.

<b>Airprox Barrier Assessment: 2019280</b>		Outside Controlled Airspace						
<b>Barrier</b>		<b>Provision</b>	<b>Application</b>	<b>Effectiveness</b>				
				<b>Barrier Weighting</b>				
				0%	5%	10%	15%	20%
Ground Element	Regulations, Processes, Procedures and Compliance	✓	✓					
	Manning & Equipment	✓	✓					
	Situational Awareness of the Confliction & Action	✓	○					
	Electronic Warning System Operation and Compliance	✓	✗					
Flight Element	Regulations, Processes, Procedures and Compliance	✓	✓					
	Tactical Planning and Execution	✓	⚠					
	Situational Awareness of the Conflicting Aircraft & Action	✗	✓					
	Electronic Warning System Operation and Compliance	⊖	⊖					
	See & Avoid	⚠	✓					
<b>Key:</b>		<u>Full</u>	<u>Partial</u>	<u>None</u>	<u>Not Present/Not Assessable</u>	<u>Not Used</u>		
Provision	✓	⚠	✗	⊖				
Application	✓	⚠	✗	⊖	○			
Effectiveness								