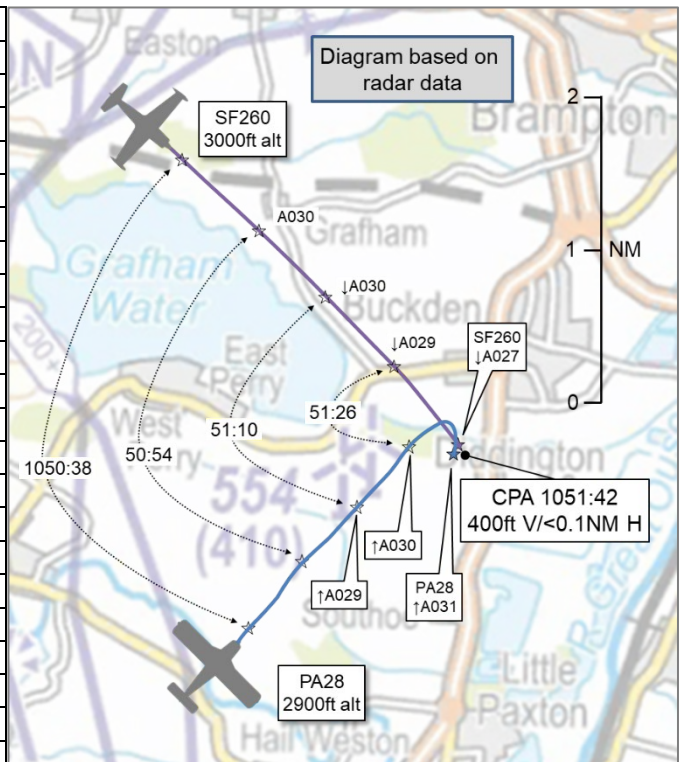


AIRPROX REPORT No 2022025

Date: 08 Mar 2022 Time: 1052Z Position: 5217N 00016W Location: 4.5NM SW Huntingdon

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	PA28	SF260
Operator	Civ FW	Civ FW
Airspace	London FIR	London FIR
Class	G	G
Rules	VFR	VFR
Service	Basic	Listening Out
Provider	Cranfield App	Duxford Info
Altitude/FL	3000ft	2800ft
Transponder	A, C, S	A, C, S
Reported		
Colours	White	Yellow
Lighting	Nav, Strobe	Strobe
Conditions	VMC	VMC
Visibility	>10km	>10km
Altitude/FL	3000ft	NK
Altimeter	QNH (1014hPa)	QNH (NK hPa)
Heading	052°	130°
Speed	110kt	180kt
ACAS/TAS	TAS	Not fitted
Alert	TA	N/A
Separation at CPA		
Reported	<100ft V/<1NM H	200ft V/0.5NM H
Recorded	400ft V/<0.1NM H	



THE PA28 PILOT reports that the event occurred on their qualifying cross country flight on the first leg bound for Kings Lynn then [destination] airport. They were heading 052° and the other aircraft was heading SE bound. They didn't get visual with the other aircraft until after the TAS warner had gone off to which they quickly performed a hazard avoidance turn to the right as they were converging. Halfway through the turn they saw, via their Garmin G1000, that [the other pilot] was not changing their heading or altitude thus they began to climb. Once the orbit was finished and they were back on their track the separation was around 400ft which [they opine] was due to their climb. Their aircraft would have appeared to the other pilot on their right meaning it was their duty to give way, which they failed to do. From this they just continued with their flight and reported the incident to their instructors who, after looking on flight radar and listening to their experience of it, instructed them to file a [safety] report (for the flight school) and complete an Airprox report. The other aircraft involved was [a/c description] with registration [redacted].

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

THE SF260 PILOT reports that they saw the PA28 in their left 10 o'clock, turning away and that they took no form of avoiding action.

The pilot assessed the risk of collision as 'None'.

THE CRANFIELD SATCO reported that they had become aware of the event after they had been contacted by the Airprox Board.

THE DUXFORD AFISO reports that this Airprox was unknown to Duxford until notified by the Airprox Board and therefore they had nothing to report.

Factual Background

The weather at Cranfield was recorded as follows:

METAR EGTC 081050Z 12012KT CAVOK 07/M01

Analysis and Investigation

CAA ATSI

ATSI has reviewed this event and have made the following observations:

- The pilot of the PA28 first called Cranfield Approach on departure from Cranfield at **1042:25** and a Basic Service was agreed. There were no further calls until the pilot reported leaving the frequency for Marham at **1103:22**, approximately 12 minutes after CPA (**1051:32**). The pilot did not mention the Airprox on the Cranfield frequency at the time.
- The pilot of the SF260 first called Duxford at **1041:31** having just apparently left the East Midlands frequency (was squawking 4552). They reported inbound to Duxford with 41NM to run. The Duxford AFISO requested they report 10NM to run to Duxford. No service was requested by the pilot nor offered by the AFISO. The pilot called again with 10NM to run to Royston¹ at **1053:14**.
- The Cranfield ATCO would not have been aware of the presence of the SF260 as its pilot was not on their frequency, and the unit is not surveillance equipped.
- The Duxford AFISO would not have been aware of the presence of the PA28 as its pilot was not on their frequency.
- ATSI noted that in this area, there is no published LARS available, see Figure 1.

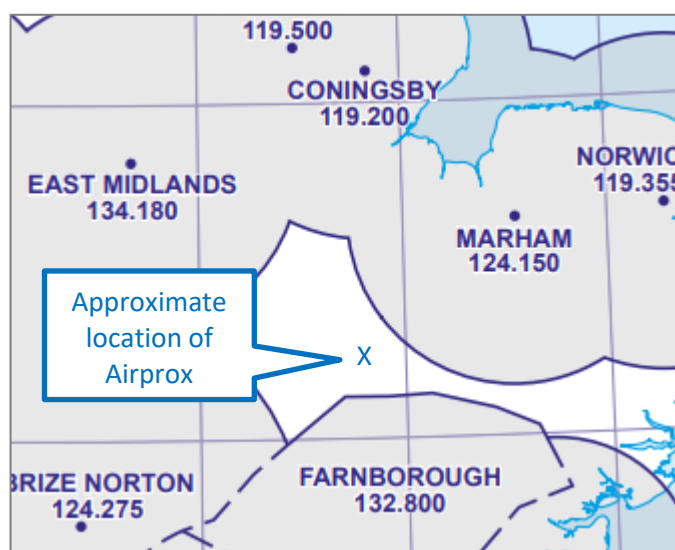


Figure 1. UK LARS provision.

Cranfield investigation

Cranfield ATSU conducted an investigation during which the SATCO interviewed the Approach controller, listened to the [RT recordings] and checked the flight progress strips.

[The PA28 pilot] was in receipt of a Basic Service from Cranfield Approach, and left the frequency at **1104** with no report of the incident, therefore Cranfield did not know of the occurrence. [The SF260 pilot] did not receive a service from Cranfield on the 8th March at any time.

¹ Royston is 5.5 NM to the south-west of Duxford on the RW06/24 extended centreline.

UKAB Secretariat

An analysis of the NATS radar replay was undertaken and both aircraft had been detected and were identifiable using Mode S transponder data.

Both pilots had been maintaining a relatively straight course however the pilot of the SF260 had been in a slow descent whereas the pilot of the PA28 had been in a slow climb. Figure 2 shows the aircraft at **1050:30**, 1min 4sec before CPA when the SF260 was 200ft above the PA28, separation was 3.5NM. The SF260 pilot then flew level and, 48sec later at **1051:18**, the aircraft were co-alt and separated by 0.9NM, Figure 3.

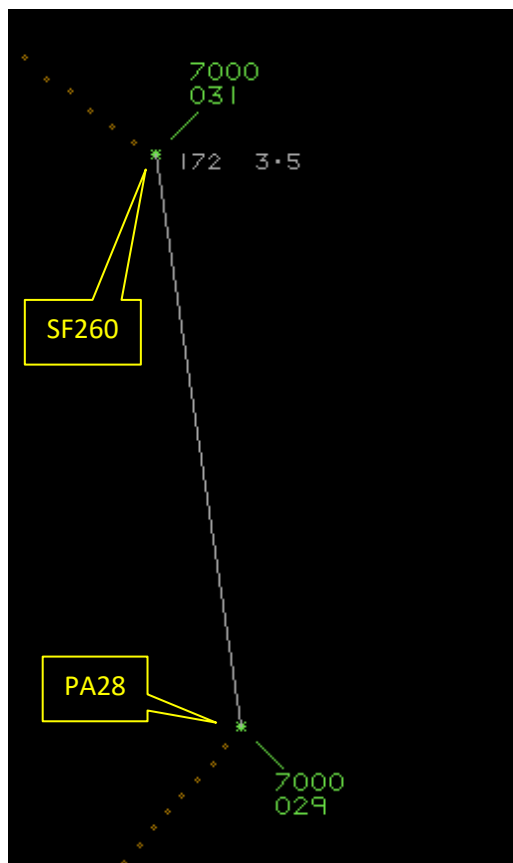


Figure 2 - **1050:30**

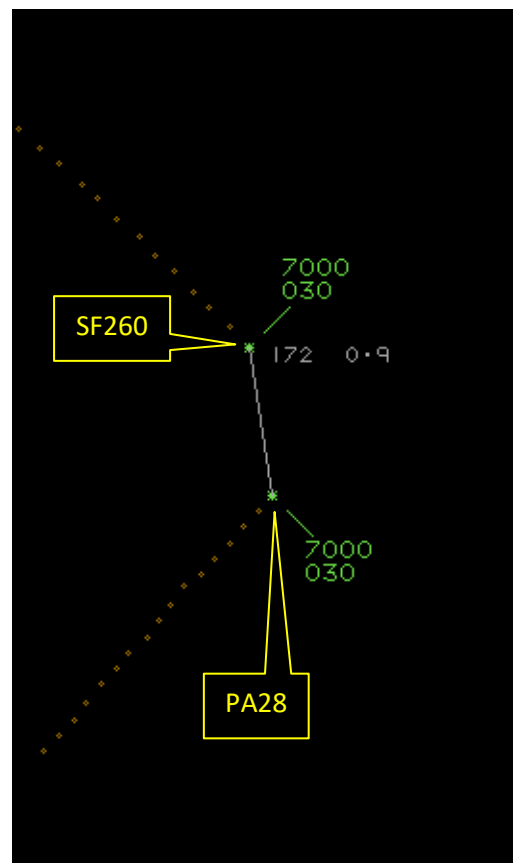


Figure 3 - **1051:18**

The pilots maintained their trajectory and the aircraft continued to converge until at **1051:34** when the PA28 crossed ahead of the SF260, with a separation of 0.2NM and 200ft, Figure 4.

On the next sweep, the radar recorded the right turn and climb as reported by the PA28 pilot. Although the SF260 pilot reported taking no avoiding action, the Mode C readout from the radar showed rate of descent for the SF260 of 450fpm increasing to 1000fpm. CPA occurred at **1051:42**, Figure 5. After CPA the PA28 pilot maintained their level and continued enroute and the SF260 pilot's rate of descent reduced to approximately 300fpm.

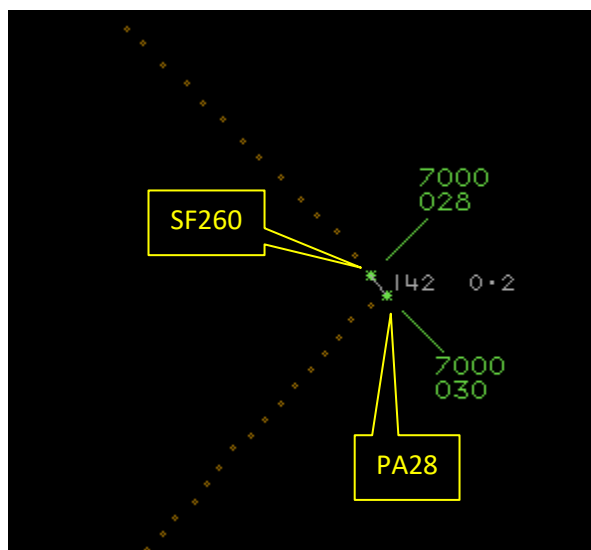


Figure 4 – 1051:34

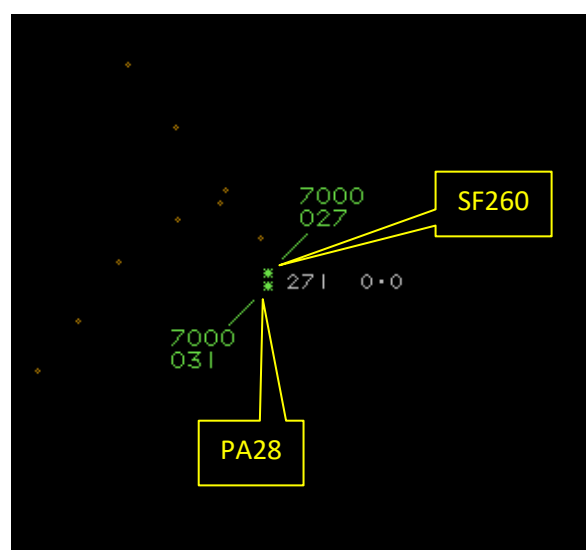


Figure 5 – CPA

The SF260 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.² If the incident geometry is considered as converging then the SF260 pilot was required to give way to the PA28.³

Summary

An Airprox was reported when a PA28 and an SF260 flew into proximity 4.5NM southwest of Huntingdon at 1052Z on Tuesday 8th March 2022. Both pilots were operating under VFR in VMC, the PA28 pilot in receipt of a Basic Service from Cranfield Approach and the SF260 pilot not in receipt of an ATS.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of reports from both pilots, radar photographs/video recordings, reports from the air traffic controllers 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 considered the actions of the PA28 pilot and had been encouraged that they had been using a TAS to aid their situational awareness and lookout. Members discussed the pilot's actions following the TAS alert (**CF5**), and appreciated that, whilst the turn to the right had been in a direction away from where the traffic had been, due to the geometry of the Airprox, this had had the potential to both restrict the PA28 pilot's view of the SF260 and prolong the encounter, as it had brought the PA28 back towards the flight path of the SF260 (**CF2, CF6**). Members agreed that the proximity of the SF260, and the perceived inaction of the pilot, had caused concern to the PA28 pilot (**CF8**), with a GA pilot member commenting that, although regulation states that the SF260 had been required to give way to the PA28, all pilots have a responsibility to do all that they can to avert a collision.

Members next discussed the actions of the SF260 pilot and agreed that they had had no prior awareness of the PA28 (**CF4**). Members considered the point at which the SF260 pilot had become visual with the PA28 and concluded that they had acquired it late (**CF7**). A discussion followed to determine whether the SF260 pilot had taken any action to give way to the PA28 and, although they had reported having taken no avoiding action, members noted that the radar had recorded an increased rate of descent at CPA and agreed that this had constituted an avoidance manoeuvre. The Board

² (UK) SERA.3205 Proximity.

³ (UK) SERA.3210 Right-of-way (c)(2) Converging.

determined that the plan adaption by the SF260 pilot to facilitate the avoidance manoeuvre had been inadequate (**CF3**) and that greater separation would have been desirable.

The Board then turned its attention to the contribution of the ground elements and agreed that, as there was no obvious service available, both of the pilots had chosen to operate on different frequencies and noted that the general provision of air traffic services in the area was sub-optimal. However, members agreed that, under the Basic Service which Cranfield approach had been providing to the PA28 pilot, there had been no requirement for the controller to monitor the flight (**CF1**).

Finally, the Board considered the risk involved in this Airprox. Members noted that, although the PA28 pilot had received a TAS alert and had manoeuvred to avoid the SF260, and despite the observed descent of the SF260, the separation between the aircraft had reduced sufficiently to result in safety being degraded. However, as both pilots had visually acquired the other aircraft there had been no risk of collision. Consequently, the Board assigned a Risk Category C to this event.

PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK

Contributory Factors:

2022025				
CF	Factor	Description	ECCAIRS Amplification	UKAB Amplification
Ground Elements				
• Situational Awareness and Action				
1	Contextual	• ANS Flight Information Provision	Provision of ANS flight information	The ATCO/FISO was not required to monitor the flight under a Basic Service
Flight Elements				
• Tactical Planning and Execution				
2	Human Factors	• Action Performed Incorrectly	Events involving flight crew performing the selected action incorrectly	Incorrect or ineffective execution
3	Human Factors	• Insufficient Decision/Plan	Events involving flight crew not making a sufficiently detailed decision or plan to meet the needs of the situation	Inadequate plan adaption
• Situational Awareness of the Conflicting Aircraft and Action				
4	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
• Electronic Warning System Operation and Compliance				
5	Contextual	• Other warning system operation	An event involving a genuine warning from an airborne system other than TCAS.	
6	Human Factors	• Response to Warning System	An event involving the incorrect response of flight crew following the operation of an aircraft warning system	CWS misinterpreted, not optimally actioned or CWS alert expected but none reported
• See and Avoid				
7	Human Factors	• Identification/Recognition	Events involving flight crew not fully identifying or recognising the reality of a situation	Late sighting by one or both pilots
8	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:

C

Safety Barrier Assessment⁴

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, under a Basic Service, the Cranfield controller had not been required to monitor the flight of the PA28.

Flight Elements:

Tactical Planning and Execution was assessed as **partially effective** because the manoeuvres performed by the pilots of both aircraft to avoid the other had been sub-optimal.

Situational Awareness of the Conflicting Aircraft and Action were assessed as **ineffective** because the SF260 pilot had had no awareness of the presence of the PA28 prior to sighting it.

See and Avoid were assessed as **partially effective** because the SF260 pilot had become visual with the PA28 at a late stage and the PA28 pilot had become concerned by the proximity of the SF260.

Airprox Barrier Assessment: 2022025		Outside Controlled Airspace						
Barrier	Provision	Application	Effectiveness					
			Barrier Weighting					
			0%	5%	10%	15%	20%	
Ground Element	Regulations, Processes, Procedures and Compliance	✓	✓	[Green bar to 5%]				
	Manning & Equipment	✓	✓	[Green bar to 2.5%]				
	Situational Awareness of the Confliction & Action	✗	○	[Red bar to 15%]				
	Electronic Warning System Operation and Compliance	●	●	[Grey bar to 2.5%]				
Flight Element	Regulations, Processes, Procedures and Compliance	✓	✓	[Green bar to 10%]				
	Tactical Planning and Execution	✓	⚠	[Yellow bar to 10%]				
	Situational Awareness of the Conflicting Aircraft & Action	✗	✓	[Red bar to 20%]				
	Electronic Warning System Operation and Compliance	⚠	✓	[Green bar to 15%]				
	See & Avoid	✓	⚠	[Yellow bar to 20%]				
Key:		Full	Partial	None	Not Present/Not Assessable	Not Used		
Provision	✓	⚠	✗	●				
Application	✓	⚠	✗	●	○			
Effectiveness	Green	Yellow	Red	Grey	Red box			

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