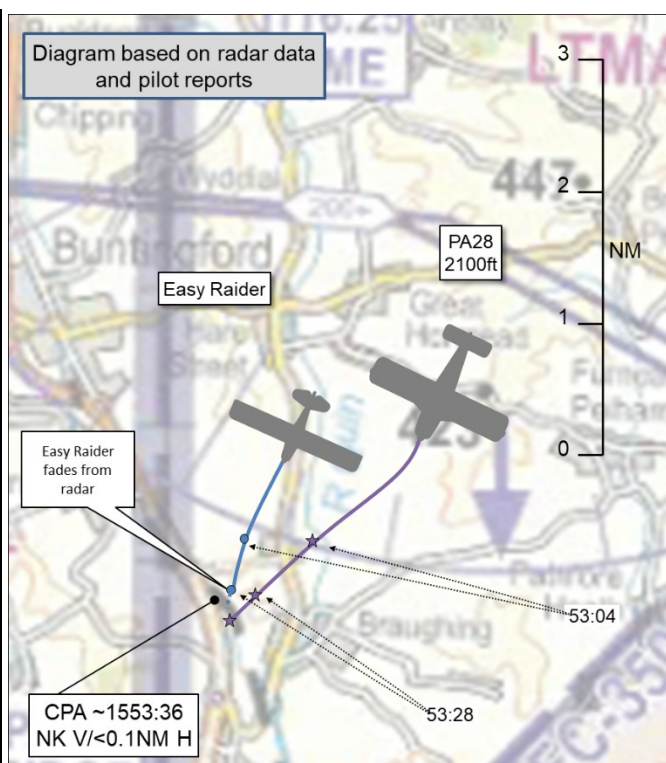


AIRPROX REPORT No 2022011

Date: 11 Feb 2022 Time: 1553Z Position: 5154N 00001E Location: 1NM N Puckeridge VRP

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	Easy Raider	PA28
Operator	Civ FW	Civ FW
Airspace	London FIR	London FIR
Class	G	G
Rules	VFR	VFR
Service	Basic	Basic ¹
Provider	Farnborough	Farnborough
Altitude/FL	NK	2100ft
Transponder	Not fitted	A, C
Reported		
Colours	Red	White, Red
Lighting	Strobes, Nav	NK
Conditions	VMC	VMC ²
Visibility	>10km	5-10km
Altitude/FL	2300ft	~2000ft
Altimeter	QNH (1033hPa)	NK
Heading	200°	220°
Speed	60kt	100kt
ACAS/TAS	Not fitted	Not fitted
Separation at CPA		
Reported	200ft V/0m H	Not Seen
Recorded	NK V/ <0.1NM H	



THE EASY RAIDER PILOT reports that they were flying [from departure airfield] towards BPK, straight and level, at about 2300ft, when they suddenly saw a Piper appear from beneath them. It came from their seven o'clock position, so close that they could read the other aircraft's registration and even see details on the pilot. The other aircraft was significantly faster than them, so by the time they saw it, it was already disappearing into the distance, roughly on a parallel heading. By the time they saw the other aircraft, it had left them behind, so there was no further risk of collision and too late for avoiding action and they thought that the other pilot had not seen them or had taken avoiding action.

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

THE PA28 PILOT reports that they were flying from [departure airfield] to [destination] via BPK. The weather had been good but had turned murky and the low sun made the visibility ahead difficult, and, as they had an IR(R) rating, were using instruments as well as look-out (ie not fully committed to instruments) and had also advised their passenger to keep a good look out. On the way up in the morning the visibility had been good and they had had a Basic Service from Farnborough, however, on the way back they had asked Farnborough for a Traffic Service [they believed], due to the murky conditions. They did not see the microlight and expressed surprise that anyone was flying a microlight in those conditions.

THE FARNBOROUGH LARS CONTROLLER reports that they had Farnborough LARS N and E band-boxed and the frequencies were very busy. They had no recollection of the event and there was no report of an Airprox on frequency.

¹ Reported as a Traffic Service, however the Farnborough Electronic Flight Progress Strip indicated a Basic Service.

² The pilot reported that the conditions were such that they were using their instruments to supplement visual references due to a poor horizon.

Factual Background

The weather at Luton was recorded as follows:

METAR EGGW 111550Z AUTO 19005KT 160V230 9999 OVC037 07/00 Q1031=

Analysis and Investigation

Occurrence Investigation

The Farnborough Investigation initially concentrated on the Easy Raider only as follows:

[Easy Raider], an unidentified light aircraft, was working Farnborough LARS North and East on a Basic Service.

The pilot reported the Airprox retrospectively and the ATCO on duty had no recollection of the event.

The RT and radar replays were reviewed in conjunction with the controller and pilot reports and the ATCO involved was spoken with.

LARS North and East were operating band boxed at medium to high traffic levels. The ATCO stated that [Easy Raider] had been on the frequency for a while but was primary only and not identified, they remembered working a few primary only contacts that day but did not have an opportunity to identify them.

The radar recordings were reviewed; it was not possible to detect the Airprox or potential conflict. There were lots of intermittent primary contacts in the sector at this time.

CAP774 states:

2.1 '...The avoidance of other traffic is solely the pilot's responsibility. Basic Service relies on the pilot avoiding other traffic, unaided by controllers/ FISOs. It is essential that a pilot receiving this ATS remains alert to the fact that, unlike a Traffic Service and a Deconfliction Service, the provider of a Basic Service is not required to monitor the flight'

2.4 'A controller may identify an aircraft to facilitate co-ordination or to assist in the provision of generic navigational assistance but is not required to inform the pilot that identification has taken place.'

The ATCO did not identify this primary contact which is common practice at Farnborough due to the high number of aircraft and the proximity to CAS (London TMA).

The ATCO had no way of detecting [whether the Easy Raider] came in close proximity to another aircraft and it would not have been possible to issue a warning.

The radar recordings were reviewed and it was not possible to detect the Airprox or potential conflict.

UKAB Secretariat

Farnborough were subsequently informed that the PA28 pilot reported receiving a Traffic Service from them. Unfortunately, by the time the PA28 pilot's report was received, only a 25 minute portion of the RTF had been retained, during which time there were no exchanges between the PA28 pilot and the controller and the initial request for a service was no longer available. However,

Farnborough reported that during the radar replay there was no highlighted squawks around the PA28 that would indicate that the controller was keeping a track of the aircraft if on a Traffic Service, and the electronic flight strip recorded that the PA28 was in receipt of a Basic Service.

An analysis of the NATS area radar replay was undertaken. The PA28 could be seen tracking south-west squawking 5023 (Farnborough LARS North) and indicating 2100ft (radar QNH 1032hPa). The Easy Raider was not fitted with a transponder and so could not be positively identified on the radar, however, a primary contact could be seen following the profile described by the Easy Raider pilot. The two aircraft converged as seen in Figures 1 and 2, until, at 1553:28, the Easy Raider primary contact faded from radar. It is likely that CPA occurred shortly afterwards. The Easy Raider primary contact could not be seen again until 1554:31 when it reappeared behind the PA28.

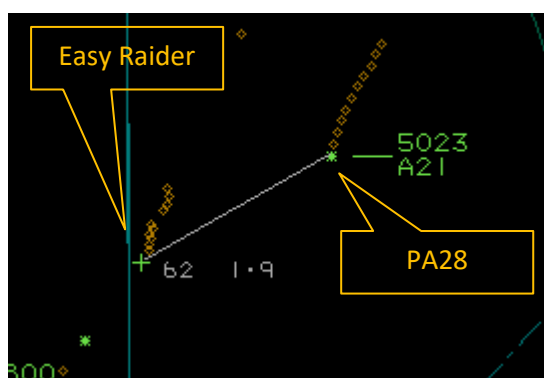


Figure 1 - 1551:02

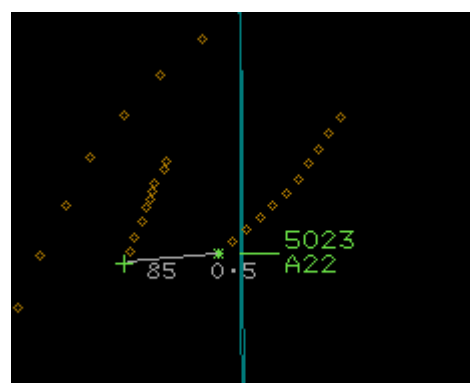
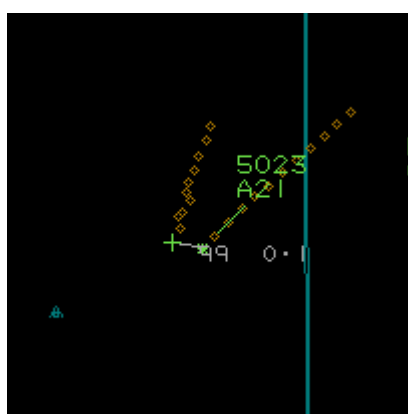
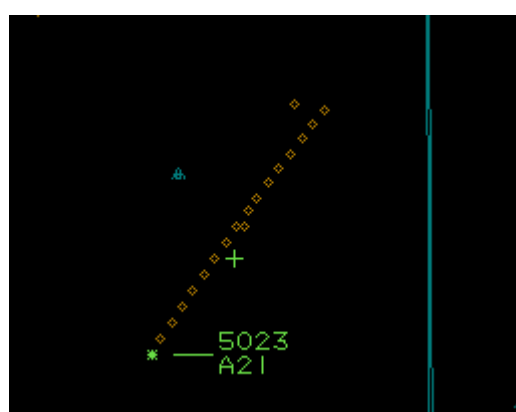


Figure 2 - 1553:05

Figure 3
Radar CPA 1553:27Figure 4
1554:31- primary contact reappears

The Easy Raider 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.³ If the incident geometry is considered as converging then the PA28 pilot was required to give way to the Easy Raider.⁴ If the incident geometry is considered as overtaking then the Easy Raider pilot had right of way and the PA28 pilot was required to keep out of the way of the other aircraft by altering course to the right.⁵

Summary

An Airprox was reported when an Easy Raider and a PA28 flew into proximity approximately 1NM north of Puckeridge VRP at 1553Z on Friday 11th February 2022. The Easy Raider pilot was operating under VFR in VMC, and in receipt of a Basic Service from Farnborough LARS. The PA28 pilot was operating under VFR in VMC and in receipt of a Basic Service from Farnborough LARS.

³ (UK) SERA.3205 Proximity.

⁴ (UK) SERA.3210 Right-of-way (c)(2) Converging.

⁵ (UK) SERA.3210 Right-of-way (c)(3) Overtaking.

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 looked at the actions of the Easy Raider pilot. They were receiving a Basic Service from Farnborough, however, because they were not transponder equipped, the controller had not identified the aircraft on radar. Consequently, the controller did not provide any Traffic Information and without any form of additional electronic conspicuity (EC) equipment either, the pilot had no prior situational awareness that the PA28 was in the vicinity (**CF3**). Furthermore, because the PA28 was approaching from behind, it was obscured from the Easy Raider pilot's view until it passed below (**CF5**). By the time the pilot saw the PA28 it was passing beneath and it was too late for the pilot to take any avoiding action to improve the situation, making it effectively a non-sighting (**CF4**).

Members wished to highlight the importance of reporting an Airprox on frequency where at all possible. By doing so, controllers are alerted to the situation and it enables the ATSU to begin the process of impounding the relevant data. In this Airprox valuable data was lost because Farnborough were not initially aware that the PA28 that they were providing an ATS to was the other aircraft involved in the Airprox.

Turning to the PA28 pilot, they reported that they were receiving a Traffic Service from Farnborough, however, the evidence from Farnborough indicated that in fact they were providing a Basic Service. Whether the pilot had asked for a Traffic Service which was not forthcoming, or whether the pilot had simply mis-remembered was not known, however, members thought it worth highlighting to pilots that if they requested an ATS that was refused due to controller workload, pilots could report this to the CAA on a F1522.⁶ Without any Traffic Information from ATC and without any additional EC the PA28 pilot also had no situational awareness that the Easy Raider was in the vicinity (**CF3**). The pilot reported encountering murky weather conditions resulting in needing to fly using instruments and members noted that as a result, the pilot's workload would have increased markedly, making it harder to maintain a good look-out. The pilot had utilised their passenger by asking them to look-out, but ultimately, neither saw the Easy Raider at all (**CF4**).

Members noted that neither aircraft was fitted with any additional electronic conspicuity equipment, which on this occasion may have provided some additional information to aid visual acquisition. It was for pilots to decide on their own requirements for additional equipment according to their needs and the Board wished to highlight to pilots that additional funding has been made available for electronic conspicuity devices through the CAA's Electronic Conspicuity Rebate Scheme, which has been extended until 31st March 2023.⁷

The Board briefly looked at the role of ATC. It was unfortunate that the RT recording did not cover the initial call from the PA28 pilot, because without it, it was not known what type of service the pilot had requested. However, as Basic Service was annotated on the EFPS, that would have been the service being provided by the controller. The controller was therefore not required to monitor either aircraft on the radar (**CF1**). The STCA is not utilised on Farnborough LARS N and E but given that the Easy Raider was non-transponding, it would not have alerted in this Airprox anyway (**CF2**).

Finally, the Board assessed the risk of collision. They considered the radar screenshots together with the reports from both pilots and agreed that, because the Easy Raider pilot had not seen the PA28 until after it had flown beneath them and the PA28 pilot had not seen the Easy Raider at all, there had been a risk of collision. The vertical separation could not be measured on the radar due to the lack of transponder on the Easy Raider, but the pilot had reported 200ft vertical separation, which accorded

⁶ Available on the CAA website at link <https://applications.caa.co.uk/CAAPortal/servlet/SmartForm.html?formCode=fcs1522>

⁷ <https://www.caa.co.uk/general-aviation/aircraft-ownership-and-maintenance/electronic-conspicuity-devices/>

with the reported heights of both aircraft and so the Board agreed that safety had been much reduced; Risk Category B (CF6).

PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK

Contributory Factors:

	2022011			
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
• Electronic Warning System Operation and Compliance				
2	Technical	• Conflict Alert System Failure	Conflict Alert System did not function as expected	The Conflict Alert system did not function or was not utilised in this situation
Flight Elements				
• Situational Awareness of the Conflicting Aircraft and Action				
3	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				
4	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
5	Contextual	• Visual Impairment	Events involving impairment due to an inability to see properly	One or both aircraft were obscured from the other
• Outcome Events				
6	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: B.

Safety Barrier Assessment⁸

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 Farnborough controller was not required to monitor the flight aircraft under a Basic Service.

Electronic Warning System Operation and Compliance were assessed as **not used** because the STCA is not utilised by Farnborough LARS N and E.

Flight Elements:

Situational Awareness of the Conflicting Aircraft and Action were assessed as **ineffective** because neither pilot had any situational awareness that the other aircraft was in the vicinity.

⁸ 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.

Airprox Barrier Assessment: 2022011		Outside Controlled Airspace					
Barrier	Provision	Application	Effectiveness				
			Barrier Weighting				
			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	✗	✗				
Key:			Full	Partial	None	Not Present/Not Assessable	Not Used
Provision	✓	○	✗	○			
Application	✓	○	✗	○		○	
Effectiveness							