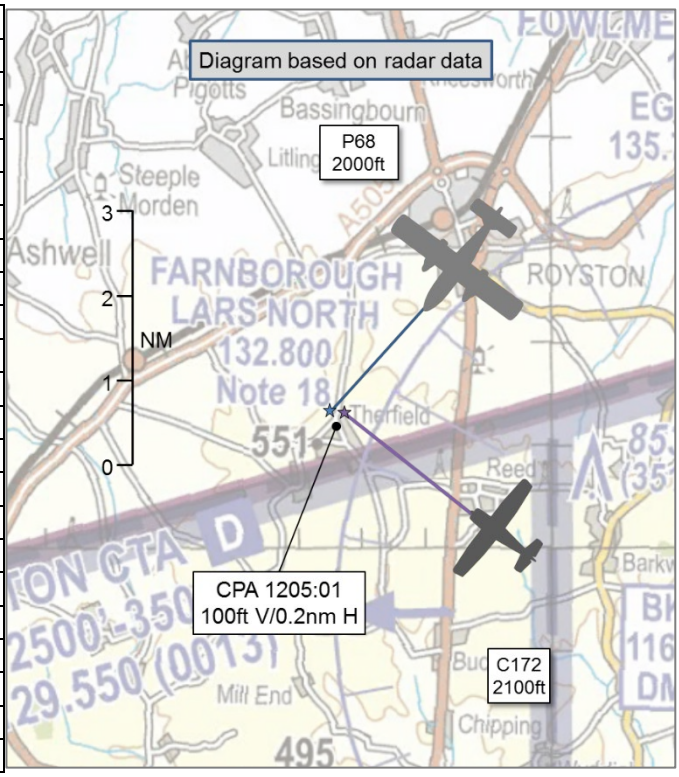
AIRPROX REPORT No 2019245

Date: 22 Aug 2019 Time: 1205Z Position: 5201N 00003W Location: Royston

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	P68	C172
Operator	Civ Comm	Civ FW
Airspace	London FIR	London FIR
Class	G	G
Rules	VFR	VFR
Service	Basic	Basic
Provider	Cambridge	Essex[1]
Altitude/FL	2000ft	2100ft
Transponder	A, C, S	A, C
Reported		
Colours	White, Blue	White, Gold
Lighting	Nav, Landing	Strobes
Conditions	VMC	VMC
Visibility	>10km	10km
Altitude/FL	1800ft	2000ft
Altimeter	QNH (1023hPa)	QNH
Heading	220°	285°
Speed	100kt	110kt
ACAS/TAS	Not fitted	Not fitted
Separation		
Reported	0ft V/30-50m H	Not Seen
Recorded	100ft V/0.2nm H	



THE P68 PILOT reports that he was conducting a survey task between the Mildenhall MATZ and the Luton zone. They were receiving a Basic Service from Cambridge ATC because they were transiting through the Cambridge ATZ; a radar service was unavailable. He spotted an aircraft in the 11 o'clock about 2nm away and assessed they would pass in front of it, but also expected that the other pilot would see them and give way. As he got closer he realised that although he would pass ahead of the other aircraft it was closer than he would normally be comfortable with. The other pilot clearly did not see them and did not take any avoiding action, and once in their 7 o'clock, the observer saw the aircraft turn towards them. He noted that with hindsight he regretted not changing course to maintain a safer distance from the other aircraft, the other pilot did not see them and a turn by the other aircraft could have made the situation worse.

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

THE C172 PILOT could not recall the incident and did not remember seeing an aircraft in close proximity. Having checked his flight log from SkyDemon, he thought that at the time of the Airprox he was leaving Essex radar and preparing to call Old Warden. He noted that he tries to avoid overflying VOR beacons to avoid conflicting traffic and thought that the incident might have happened as he was adjusting his course to avoid doing so.

THE CAMBRIDGE CONTROLLER reports that the P68 was outside the range of the ATM and so the Airprox was not observed. Traffic Information had been passed on known traffic on frequency. However, there were no aircraft on frequency in the vicinity of the Airprox and therefore no Traffic Information was passed to the P68 pilot.

[1] Although the pilot reported being on the Essex frequency, in fact he had just left it.

Factual Background

The weather at Luton was recorded as follows:

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METAR EGGW 221150Z AUTO 23009KT 200V270 9999 BKN030 OVC037 21/13 Q1024=
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Analysis and Investigation

CAA ATSI

The P68 was conducting a survey flight, VFR, between the Mildenhall MATZ and the Luton CTR. The routeing involved the aircraft passing through the Cambridge ATZ. The pilot was in receipt of a Basic Service from Cambridge ATC at the time of the Airprox. The C172 pilot reported being in receipt of a Basic Service from Essex Radar at the time of the Airprox, although in fact the pilot was transponding code 4671 initially (listed as a London TC code for Stansted/Luton) and the transponder code subsequently changed to 7000 just prior to the Airprox occurring.

The Cambridge controller was providing Approach non-radar services at the time of the event and the C172 was unknown traffic to the Cambridge controller. ATSI had access to the Cambridge R/T recordings but not the London TC R/T recordings. Screenshots in this report have been taken from the Area Radar recordings.

At 10:37:20, the P68 pilot passed their initial contact details to the controller and advised that they were currently at 1800ft and that their survey route would take them through the Cambridge ATZ. The controller instructed the pilot to squawk 6177 (the Cambridge Conspicuity code) and a Basic Service was agreed. The flight continued as expected and the screenshots below illustrate the Airprox unfolding. CPA took place at 12:05.10 with the aircraft separated by 0.2nm laterally and 100ft vertically (Figure 4).

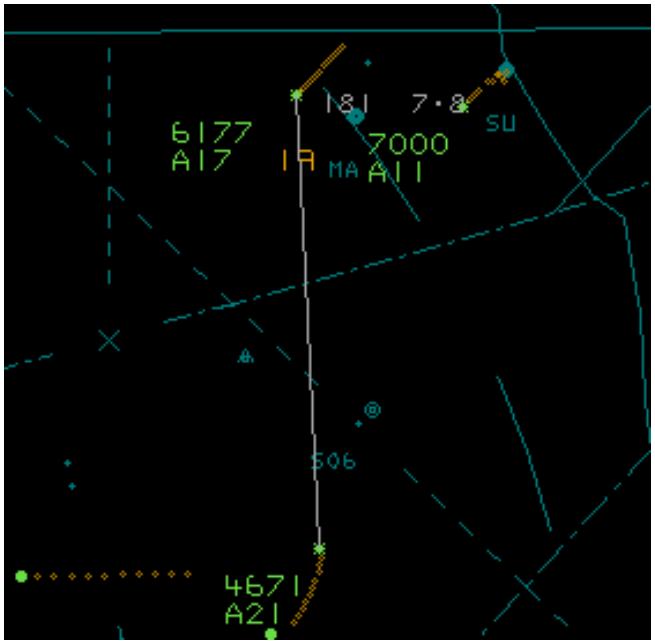


Figure 1 - 12:02.09

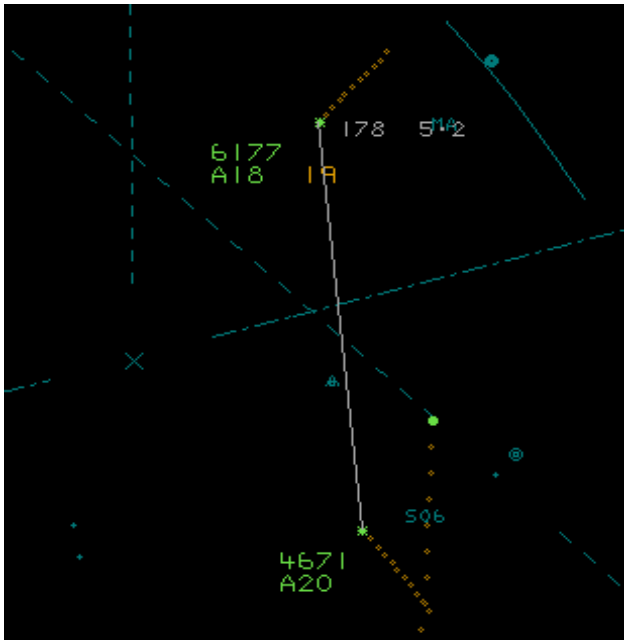


Figure 2 – 12:03.01

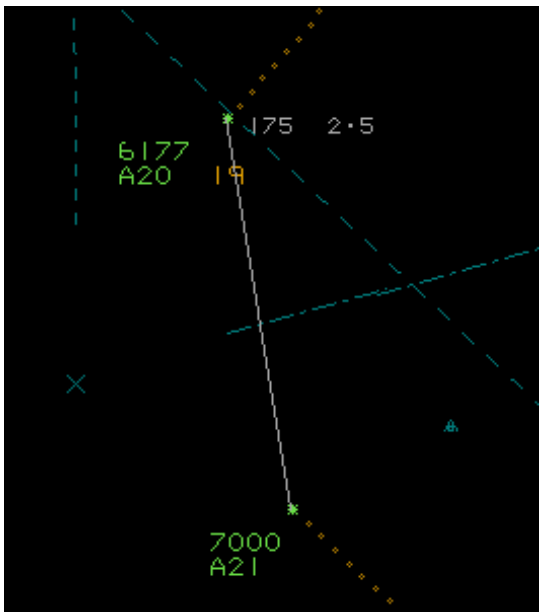


Figure 3 – 12:04.02

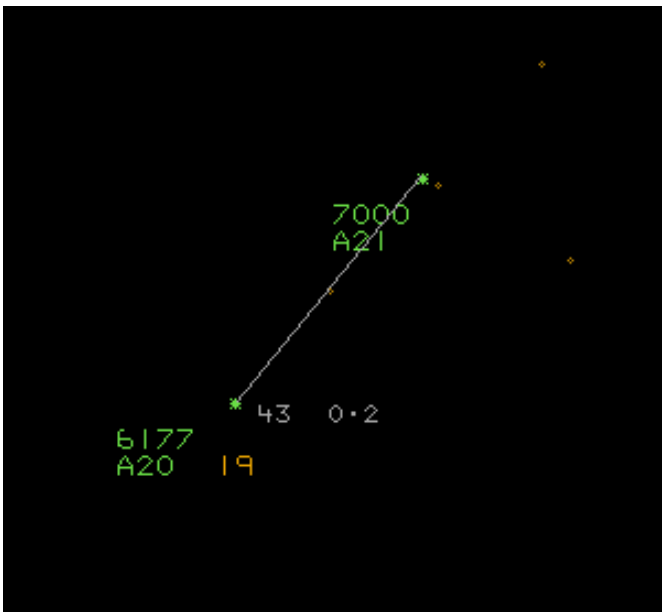


Figure 4 – 12:05.10 CPA

At 12:05.20, the Cambridge Approach controller passed Traffic Information on two sets of known but unrelated traffic to the P68 pilot. The pilot did not respond and the controller prompted the pilot. The pilot acknowledged the Traffic Information and advised the controller that they had just had an Airprox with a C172, about 3 miles southwest of Royston, at 200ft. The controller acknowledged.

The C172 was unknown traffic to the Cambridge Approach controller, who was providing a Basic Service to the P68 pilot without the availability of Surveillance equipment that might have enabled the hazard to be detected.

Cambridge Investigation

A Cambridge investigation reported that the Cambridge radar was working, but the controller was not APS rated and therefore was providing a Basic Service without radar. The controller was conducting a handover of the position (to another controller) when the P68 pilot reported the Airprox at 1205:46. The aircraft was 14.5nm southwest of Cambridge and therefore not visible on the ATM. A review of the radar subsequently showed the C172 squawking 7000, it had not been on the Cambridge frequency at any time, nor was any Traffic Information passed by any other agency to Cambridge and therefore it was not known to the controller.

UKAB Secretariat

The P68 and C172 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 C172 pilot was required to give way to the P68[3].

Summary

An Airprox was reported when a P68 and a C172 flew into proximity near Royston at 1205hrs on Thursday 22nd August 2019. Both pilots were operating under VFR in VMC, the P68 pilot in receipt of a Basic Service from Cambridge. The C172 pilot was not receiving an ATS.

[2] SERA.3205 Proximity. MAA RA 2307 paragraphs 1 and 2.
[3] SERA.3210 Right-of-way (c)(2) Converging. MAA RA 2307 paragraph 12.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of reports from the pilots of both aircraft, transcripts of the Cambridge RT frequencies, radar photographs/video recordings, reports from the air traffic controllers involved and reports from the appropriate ATC and 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 P68 pilot. He was receiving a Basic Service from Cambridge, but because the controller was not radar qualified he was not using the radar and therefore couldn't provide the P68 pilot with any Traffic Information on the C172 (**CF4, CF6**). A lengthy discussion followed about who the P68 pilot should have called in order to receive a surveillance-based service. Members were split, with some acknowledging that because the P68 was on a survey and would be turning to go back to the Cambridge overhead he needed to be talking to Cambridge, but others arguing that Luton or Farnborough would have been able to see the C172 on their radar and could have provided Traffic Information had he been receiving a Traffic Service; whether either unit would have been willing to provide a service to an aircraft transiting in and out of their area of responsibility was debated at some length, but in the end members agreed that a surveillance based service would have been preferable, and ideally he would have used a second radio to speak to Cambridge as required (**CF5**). Once he had seen the C172, the P68 pilot thought he would have enough separation and expected the other pilot to give way to him, but unfortunately the C172 did not see the P68 and so did not give-way. Members thought this was a salutary lesson in why pilots should not assume the other would take action even if they were required to give way, and, although they could understand that the P68 pilot probably didn't want to alter his track due to the survey, they thought that he ought to have taken earlier action to increase the separation rather than hang on to the last minute in the hope that they would do so (**CF8**).

Turning to the C172 pilot, he did not see the P68 at all, and members thought that this incident highlighted to pilots that at busy phases of flying and when there were in-cockpit tasks to attend to such as changing squawks and frequencies, pilots should be mindful of the need for robust prioritised look-out. Although it was for the C172 pilot to give-way to the P68, he did not see it and so was not able fulfil his obligation (**CF7**).

At the time of the Airprox Cambridge ATC were not providing any radar services due to a lack of suitably qualified personnel (**CF1**). Members briefly discussed the implications of this, but Cambridge are not the LARS unit in the area and so did not have any specific responsibility to provide radar services. Under the terms of a Basic Service they were not required to provide Traffic Information unless they knew a definite risk of collision existed (**CF2**), but, without a radar, they had no knowledge that the C172 was there and so could not provide Traffic Information to the P68 pilot (**CF3**).

There followed a discussion about a lack of LARS provision in that particular part of the country and CAA representatives acknowledged that LARS provision had been severely reduced with the closure of various RAF units. A review of the provision of Flight Information Services outside controlled airspace was underway by the CAA as part of the Airspace Modernisation Strategy (outlined in CAP1711); however, this was not due to be concluded until around 2025.

In assessing the risk, the Board quickly agreed that there had not been any risk of collision because the P68 pilot was visual with the C172 at all times. Some members thought that with a radar separation of 0.2nm this could be considered normal operations, however, because the C172 pilot had not been visual with the P68 it was agreed that safety had been degraded and therefore the risk was judged to be Category C.

PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK

Contributory Factors:

	2019245		
CF	**Factor**	**Description**	**Amplification**
	Ground Elements		
	• Manning and Equipment		
1		• Any other event	**Controller not APS qualified**
	• Situational Awareness and Action		
2	Contextual	• Situational Awareness and Sensory Events	Not required to monitor the aircraft under the agreed service
3	Contextual	• Situational Awareness and Sensory Events	Generic, late, no or incorrect Situational Awareness
	Flight Elements		
	• Tactical Planning and Execution		
4	Human Factors	• Communications by Flight Crew with ANS	Controller not able to provide requested ATS
5	Human Factors	• Communications by Flight Crew with ANS	Pilot did not communicate with appropriate service provider
	• Situational Awareness of the Conflicting Aircraft and Action		
6	Contextual	• Situational Awareness and Sensory Events	Generic, late, no or incorrect Situational Awareness
	• See and Avoid		
7	Human Factors	• Monitoring of Other Aircraft	Non-sighting or effectively a non-sighting by one or both pilots
8	Human Factors	• Lack of Action	Pilot flew into conflict

Degree of Risk: C.

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:

Manning and Equipment were assessed as **partially effective**; a radar service was not available because there wasn't a suitably qualified controller.

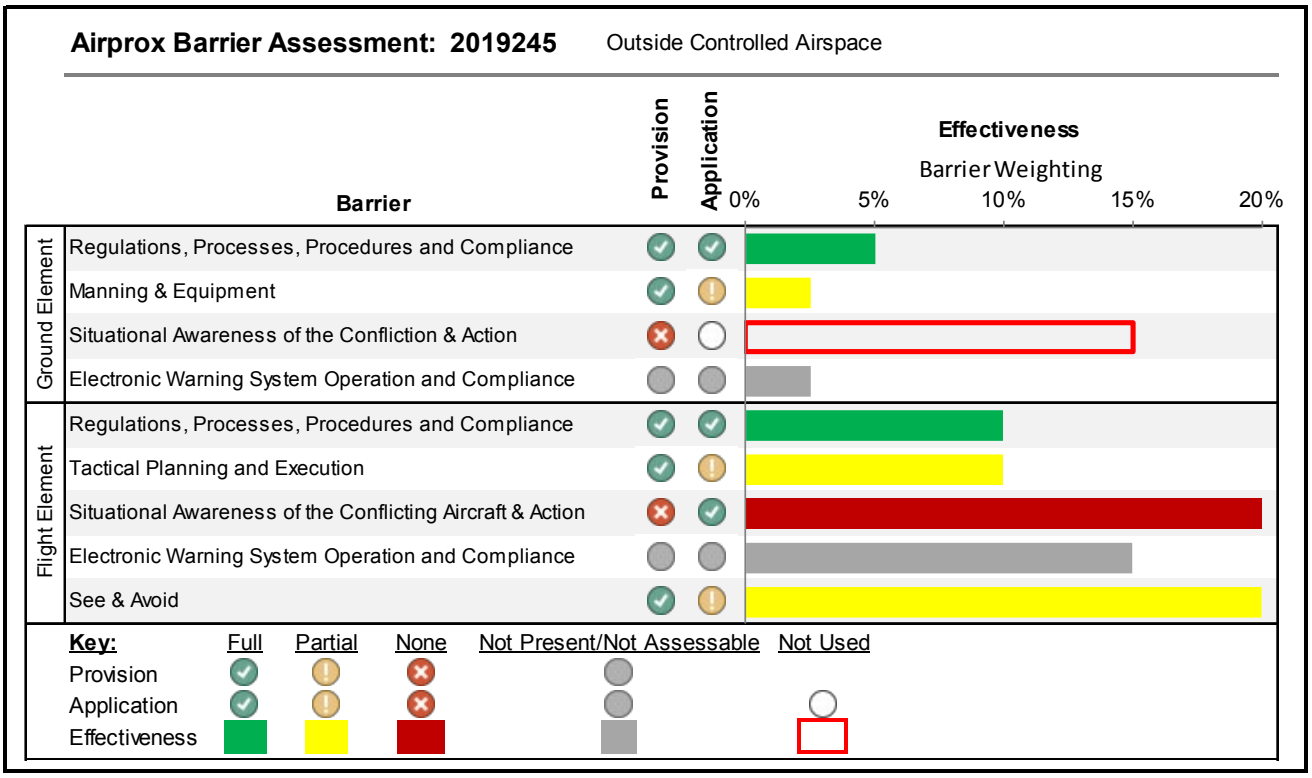
Flight Elements:

Tactical Planning and Execution was assessed as **partially effective** because the P68 pilot would have been better served with radar surveillance-based ATS.

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

See and Avoid were assessed as **partially effective** because the P68 pilot assessed avoiding action was not necessary, but was expecting the C172 to give way to him to increase the CPA. However, the C172 pilot was not visual with the P68 and so did not do so.

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


Airprox Barrier Assessment: 2019245
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