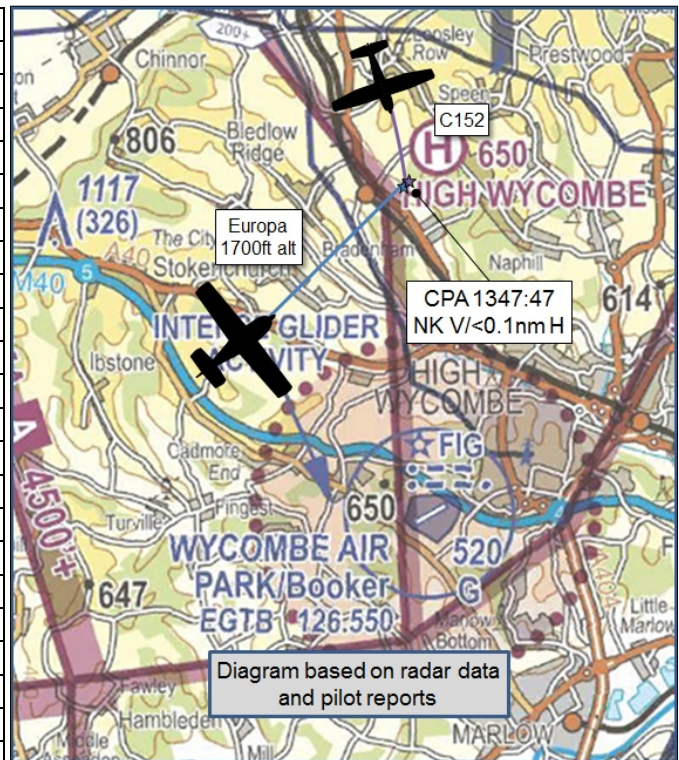


AIRPROX REPORT No 2016220

Date: 15 Oct 2016 Time: 1347Z Position: 5140N 00048W Location: 4nm NE Stokenchurch

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	Europa	C152
Operator	Civ Pte	Civ Club
Airspace	London FIR	London FIR
Class	G	G
Rules	VFR	VFR
Service	None	Aerodrome
Provider	N/A	Wycombe
Altitude/FL	1700ft	NK
Transponder	On/S	On/C (off)
Reported		
Colours	White	White, Blue
Lighting	None	Beacon
Conditions	VMC	VMC
Visibility	>10km	>10km
Altitude/FL	2100ft	1200ft
Altimeter	NK (1007hPa)	QFE
Heading	360°	170°
Speed	130kt	85kt
ACAS/TAS	PowerFLARM	Not fitted
Alert	None	N/A
Separation		
Reported	20ft V/30m H	50ft V/300-400m H
Recorded	NK V/<0.1nm H	



THE EUROPA PILOT reports that the other aircraft was neither on frequency with Farnborough nor using a transponder in busy airspace under the Heathrow tab (below 3500). He commented that the other aircraft cannot be seen on flightradar/plane tracker when he subsequently checked, but his aircraft’s track can. He also commented that no warning had been given by Farnborough LARS as part of his Basic Service; however, that said, he acknowledged that all the airspace down to the south coast was quite busy. He saw the other aircraft 50ft to port, at the same level, and had no idea why he didn't see it earlier. He suspected it was from Booker or Denham because it was heading towards Heathrow.

He assessed the risk of collision as ‘High’.

THE C152 PILOT reports that he was on a local flight from Wycombe conducting a trial lesson. He called Wycombe Tower for rejoin when overhead Princess Risborough. He was given the airfield information, and RWY24 was in use. He followed his usual routing 'down the valley' to the 'Golden Ball', and started a cruise descent to arrive at the ball at 1000' QFE. Whilst in the descent he took control from his student, completed the airfield approach check followed by his pre-landing checks. He was just pointing out the local landmarks when he looked to check for traffic in the Wycombe circuit downwind position for runway 24. He had about 1.5-2nm to run to the golden ball at 1200-1300' QFE descending when a Europa came into view in his windshield at about 500m. His initial reaction was to pitch down but he could see the Europa was flying straight and level and he himself was still in the descent and could see they were not in a risk of collision (plus he didn't want to alarm his student). He levelled off at 1000' QFE just before the golden ball. The pilot of the Europa was looking straight ahead and he doesn't think he had seen him. The Europa was on his right and he had not seen it until it came into view in his windshield. It was a very late sighting in his opinion. He thinks the Europa was shielded from his view by the structure of the airframe of the C152 for most of

the time that they may have been on a converging course. Having not seen the Europa until the last moment, he doesn't know where it had come from but, judging by the Europa's straight and level altitude when he saw him, he assumes he was tracking just outside Wycombe ATZ almost parallel with the downwind traffic on runway 24 at 1200' QFE. He believes that if the Europa pilot had turned to port just before he saw him there could have been a real risk of a collision.

He assessed the risk of collision as 'Medium'.

THE FARNBOROUGH CONTROLLER reports that he was advised that a pilot had reported an Airprox after leaving his frequency. He remembers the aircraft callsign but has no recollection of the events.

Factual Background

The weather at Benson was recorded as follows:

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METAR EGUB 151250Z 19007KT 9999 SCT038 15/06 Q1006 BLU NOSIG
METAR EGUB 151350Z 16007KT 9999 SCT040 17/06 Q1006 BLU NOSIG
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Analysis and Investigation

CAA ATSI

The Europa (code 0435/7000) was operating VFR on a flight to a private strip in Bedfordshire. At the time of the Airprox, the Europa was not in receipt of an Air Traffic Service. The C152 (also code 7000) was operating on a local VFR training flight from Wycombe Air Park aerodrome. At the time of the Airprox, the C152 was southbound, routeing towards St Lawrence Church near West Wycombe (the spire of which is a prominent landmark known locally as the 'Golden Ball'), prior to re-joining the visual circuit at Wycombe. At the time of the Airprox, the C152 was in receipt of an Aerodrome Control Service from Wycombe Tower.

Prior to the Airprox the Europa was in receipt of a Basic Service from Farnborough LARS (West) transponding the Farnborough code 0435. On leaving the LARS (West) sector the LARS (West) controller attempted to transfer the Europa to Farnborough LARS (North); however, this course of action was declined by the Europa pilot who explained that he wished to contact Luton Radar. The Europa's destination was a private strip within the Luton CTR. The Europa left the LARS (West) frequency at 1346:26 (Figure 1). The Europa retained the Farnborough transponder code until 1346:48 when the Europa's code changed to 7000.

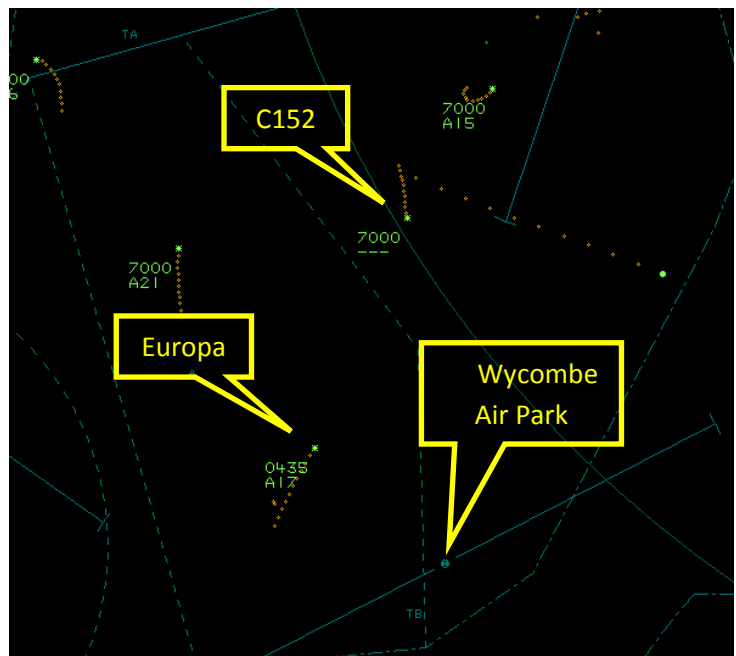


Figure 1 – 1346:26 UTC

CPA occurred at 1347:47 (Figure 2), with a minimum recorded lateral distance of less than 0.1nm. At CPA the Europa was indicating altitude 1800ft, however, it was not possible to measure the minimum vertical distance as the C152 (although Mode S equipped) was not transponding any altitude information. In the Europa pilot's written report the minimum vertical distance at CPA was described as 20ft. The Europa pilot did not contact Luton Radar until after CPA had occurred establishing communication with Luton at 1350:04

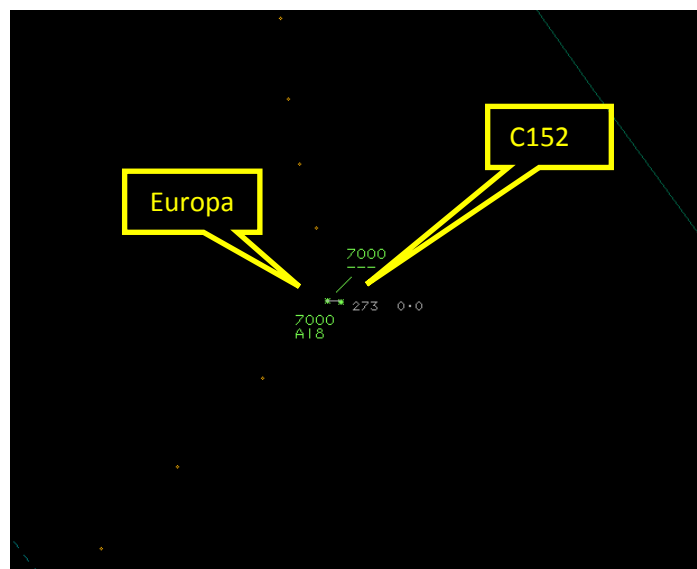


Figure 2 – 1347:47 UTC

The Airprox occurred in Class G (uncontrolled) airspace; at the time the Airprox occurred; only the C152 was in receipt of an ATS. Wycombe ATC is not surveillance equipped and would not have been aware of the presence of the Europa.

UKAB Secretariat

The Europa and C152 pilots shared an equal responsibility for collision avoidance and not to operate in such proximity to other aircraft as to create a collision hazard¹. If the incident geometry is considered as converging then the C152 pilot was required to give way to the Europa².

Summary

An Airprox was reported when a Europa and a C152 flew into proximity at 1347 on Saturday 15th October 2016. Both pilots were operating under VFR in VMC, the Europa pilot changing frequency from Farnborough to Luton and the C152 pilot in receipt of an Aerodrome Service from Wycombe.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of reports from the pilot of both aircraft and radar photographs/video recordings.

The Board began their discussion by looking at the actions of the C152 pilot. Members noted that the C152 had elected to turn his transponder mode C/Alt turned off and commented that this then denied any ATC units, or other aircraft fitted with suitable TAS, from receiving valuable information; in this instance the Europa was fitted with PowerFLARM and might have registered the C152. Some members wondered if the instructor may have been distracted as he pointed out ground features to his student, and that this could have resulted in the C152 instructor not maintaining a robust lookout to mitigate the effects of any aircraft obscuration. Other members were concerned that, on sighting the Europa, the C152 instructor had decided not to conduct a more positive avoiding manoeuvre for

¹ SERA.3205 Proximity.

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

fear of alarming his student. In continuing in the same direction in a gentle descent rather than turning and/or positively changing height, the instructor may have exacerbated the situation, especially when he could not know what the other pilot might do.

The Board then considered the actions of the Europa pilot. Members were mindful that he was entitled to transit in the area outside the Wycombe ATZ, but they noted that aircraft in the Wycombe visual circuit also invariably fly outside the ATZ for noise avoidance reasons. Being close to what can be a busy airfield, GA members opined that a call to Wycombe would have served to increase both his own situational awareness and that of other Wycombe traffic and ATC. Although Farnborough LARS was a useful previous frequency, he had already switched from them before the incident, and members opined that he had time to call Wycombe before changing to Luton. Members were also concerned that the Europa pilot seemed to think that in the run up to the incident he was receiving a service from Farnborough that would provide him with Traffic Information. Under a Basic Service this is not the case, and Farnborough were under no remit to track his flight, or provide Traffic Information, unless they happened to see the conflict as they scanned their radar screen during their other tasks.

The Board then looked at the safety barriers that were relevant to this Airprox and decided that the following were the key factors:

- **Situational Awareness** was assessed as being only **partially effective** because the Europa pilot was not in communication with Wycombe as he transited close to their visual circuit and therefore he could not either gain information on the Wycombe circuit traffic or inform them of his presence and intentions.
- **Collision Avoidance Systems** were considered **ineffective** because although the Europa had PowerFLARM fitted, the C152 pilot had either not turned on his Mode C/Alt or had turned it off when approaching Wycombe thus removing PowerFLARM's ability to detect the C152.
- **See and Avoid** was considered **partially effective** because although both pilots saw the other aircraft, it was a late sighting and neither pilot carried out any positive actions to increase the separation between the aircraft.

The Board then considered the cause and risk of the incident and members quickly agreed that although both aircraft had been there to be seen, both pilots had evidently not maintained a robust lookout. Notwithstanding, they had both seen each other in the end, albeit late, and members noted that the C152 pilot had been able to judge that they would not collide even with minimal avoiding action. The incident was therefore assessed as a late sighting by both pilots. Turning to the risk, there was much debate about the severity of this incident, with some members opining that safety had not been assured and was much reduced below the norm; Category B. Others pointed out that the C152 pilot had made a conscious decision that there was no risk of collision and, although safety had clearly been degraded, the risk should therefore be assessed as Category C. The debate ebbed and flowed, and, in the end, the Chair decided to take a vote wherein a small majority prevailed in favour of assessing the risk as Category C.

PART C: ASSESSMENT OF CAUSE AND RISK

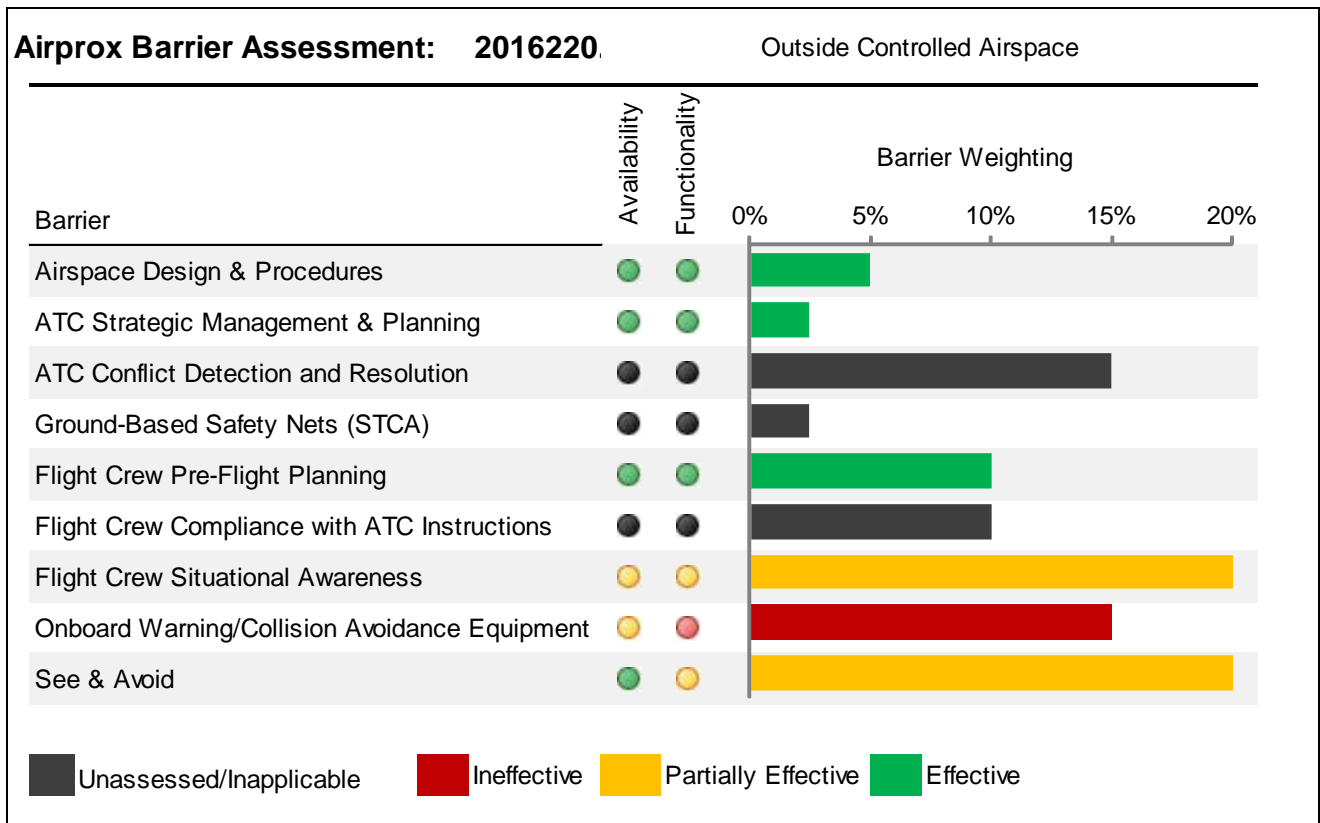
Cause: A late sighting by both pilots.

Degree of Risk: C.

Barrier Assessment³:

³ The UK Airprox Board scheme for assessing the Availability, Functionality and Effectiveness of safety barriers can be found on the [UKAB Website](#)

Modern safety management processes employ the concept of safety barriers that prevent contributory factors or human errors from developing into accidents. Based on work by EASA, CAA, MAA and UKAB, the following table depicts the barriers associated with preventing mid-air-collisions. The length of each bar represents the barrier's weighting or importance (out of a total of 100%) for the type of airspace in which the Airprox occurred (i.e. Controlled Airspace or Uncontrolled Airspace).⁴ The colour of each bar represents the Board's assessment of the effectiveness of the associated barrier in this incident (either Fully Effective, Partially Effective, Ineffective, or Unassessable/Absent). The chart thus illustrates which barriers were effective and how important they were in contributing to collision avoidance in this incident.



⁴ Barrier weighting is subjective and is based on the judgement of a subject matter expert panel of aviators and air traffic controllers who conducted a workshop for the UKAB and CAA on barrier weighting in each designation of airspace.