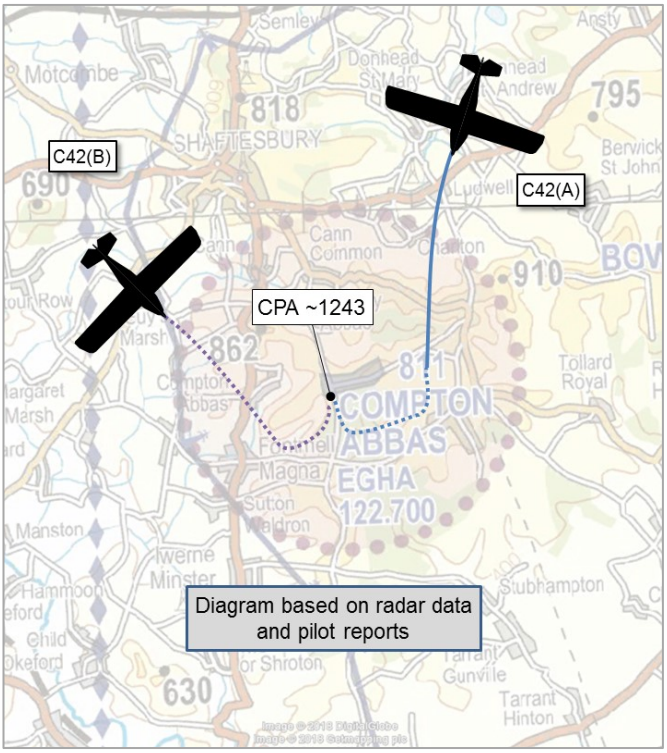
AIRPROX REPORT No 2017230

Date: 19 Sep 2017 Time: 1243Z Position: 5057N 00209W Location: Compton Abbas ATZ

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	C42(A)	C42(B)
Operator	Civ Pte	Civ Club
Airspace	Compton Abbas ATZ	Compton Abbas ATZ
Class	G	G
Rules	VFR	VFR
Service	AGCS	AGCS
Provider	Compton Abbas	Compton Abbas
Altitude/FL	Not known	Not known
Transponder	A, C	Not seen[1]
Reported		
Colours	White, Red	White, Blue
Lighting	Strobe	Strobe
Conditions	VMC	VMC
Visibility	>10km	10km
Altitude/FL	800ft	800ft
Altimeter	QFE (994hPa)	QFE
Heading	350°	340°
Speed	75kt	70kt
ACAS/TAS	Not fitted	Not fitted
Separation		
Reported	100-200ft V/0m H	200ft V/150m H
Recorded	NK	



THE C42(A) PILOT reports that he had made contact with Compton Radio and obtained the airfield information. He advised them that he was 4nm inbound from the north for a standard overhead join for RW26 (the runway in use). Very shortly after his radio exchange, another aircraft pilot checked in, also to the north with similar intentions [he thought]; his perception was that the other pilot's position report indicated that the aircraft was behind him and, since he was unable to see the other aircraft, he concluded that the aircraft was indeed in trail. However, as the other pilot had probably not heard his initial call, he made an additional call at the ATZ boundary stating that he was at 2nm and 2000ft on the QFE. About 10 seconds after calling 'dead-side descending', the pilot of the other aircraft made a similar call and it became apparent that the other pilot wasn't taking any separation on him [he thought]. He checked with Compton Radio that his calls were being received, which they were, so he carried out a fairly tight descending turn to position to join crosswind at the circuit height of 800ft. Again, about 10 seconds after making the 'joining crosswind' call, the other pilot made the same call. He carried out a thorough look-out, making sure he moved his head to cover blind spots, but could not see the other aircraft. He was wary about making any evasive manoeuvres to avoid an aircraft he couldn't see because of the collision risk. A moment later, he spotted C42(B) overtaking him about 100-200ft directly below him on a slightly diverging left-to-right heading. Having now established the other aircraft's position he climbed back up into the overhead at 2000ft, announcing his intentions on the radio, and subsequently carried out a further overhead join. He spoke to the other pilot later, who thanked him for going around but said that he had not seen him because the C42(A) was hidden behind his cockpit structure, nor had he heard any of his radio calls.

He assessed the risk of collision as 'High'.

[1] The pilot of C42(B) reports Mode A, C and S fitted and on, however there is no primary or secondary return from the radar replay. There are a number of factors that may explain this, e.g. equipment failure, radar blind-spot, aircraft altitude etc, however the actual reason is unknown due to insufficient evidence.

THE C42(B) PILOT reports that he was inbound to Compton Abbas from the north at about 2000ft QNH, about 1200ft QFE. He called Compton Abbas about 4nm NW of the airfield and advised that he intended to join deadside for RW26RH microlight circuit. He altered his course onto a SE heading about 1nm abeam the west end of the RW. He did not hear any aircraft calling inbound or deadside-descending after making his initial radio call, he also did not see any aircraft from his position. At about 0.5nm south of the airfield he turned onto a NNW heading, he still had not heard or seen any other aircraft on the deadside. He called Compton to advise that he was descending-deadside, RW26RH, microlight circuit. As he descended and approached 800ft on the deadside, heading NNW towards the RW08 numbers less than 0.25nm south, he first saw the visiting C42(A) in his 2 o'clock. The C42(A) was tracking parallel with the runway on the deadside, in a westerly direction, close to the edge of the wood on the south side of the runway. The C42(A) was higher than his aircraft, about 900ft, and the distance between the aircraft was about 100m. As soon as he saw the C42(A), he continued on his northerly heading and increased his rate of descent to 500ft, which is the GA poor-weather circuit height: he remained in the microlight circuit pattern. He advised that he was joining crosswind, continued in the microlight circuit at 500ft, and called downwind, base and final. He did not hear any other aircraft in the circuit. After landing, he advised the Operations Director, who was also the Air/Ground Operator, of the events. She informed him that nobody recalled hearing any radio calls from the C42(A) pilot relating to the C42(A)'s position on the deadside. He spoke to the C42(A) pilot and informed him he had first seen him in his 2 o'clock but had not heard him call deadside-descending or joining crosswind. The C42(A) pilot told him that some of his radio transmissions had not been answered and maybe the C42(A)'s radio was operating intermittently. He thanked the C42(A) pilot for re-establishing his deadside join.

He assessed the risk of collision as 'Low'.

THE AGCS OPERATOR reports that she liaised with the C42(B) pilot after his landing. They agreed that the C42(B) pilot would talk to the C42(A) pilot, in order to 'educate' him on the standing joining procedures at Compton Abbas, and on the Standard Overhead Join, as per the NOTAM. Given the C42(B) pilots position as Flight Instructor and his recent extensive work on an internal safety audit on the Compton Abbas circuit patterns and procedures, she deemed this a suitable measure. Her only recollection and points of note are that the visiting C42(A) pilot's join was abnormal and did not follow the standard overhead join that Compton Abbas require [UKAB note: in fact the radar recordings show that C42(A) pilot does seem to have followed the required overhead join track]. She can confirm that she observed the C42(A) take a track at around 800-1000ft above aerodrome level, just south of the runway, heading from east to west. She also opined that the radio work from the visiting C42(A) was minimal and also non-standard.

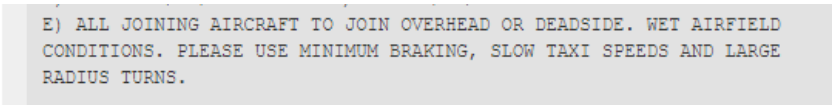

E) ALL JOINING AIRCRAFT TO JOIN OVERHEAD OR DEADSIDE. WET AIRFIELD CONDITIONS. PLEASE USE MINIMUM BRAKING, SLOW TAXI SPEEDS AND LARGE RADIUS TURNS.

Figure 1: EGHA NOTAM

Factual Background

The weather at Yeovilton was recorded as follows:

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METAR EGDY 191150Z 25005KT 9999 FEW030 17/09 Q1022 BLU NOSIG
METAR EGDY 191250Z 25005KT 9999 FEW045 17/09 Q1022 BLU NOSIG
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Analysis and Investigation

UKAB Secretariat

The C42(A) and C42(B) 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]. An aircraft operated on or in the vicinity of an aerodrome shall conform with or avoid the pattern of traffic formed by other aircraft in operation[3].

The radar replay shows C42(A), which can be identified from Mode 'S', joining from the north (figure 2). As the aircraft descends on the deadside the aircraft disappears from radar and doesn't reappear until after CPA, when the C42(A) climbs back into the overhead (figure 3).

C42(B) cannot be seen at any time on the radar replay, probably due to the fact that it was initially reported being at about 2000ft QNH (about 1200ft QFE) and subsequently descending, so therefore likely below radar coverage.

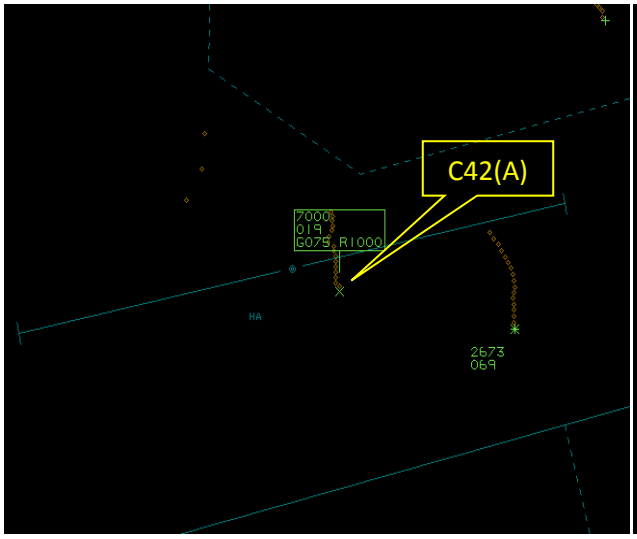


Figure 2: C42(A) deadside descending 1241:49

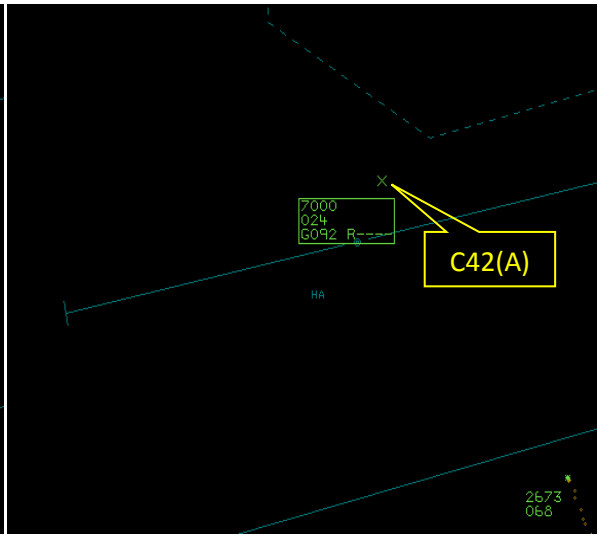


Figure 3: C42(A) climbing into the overhead 1244:25

[2] SERA.3205 Proximity.
[3] SERA.3225 Operation on and in the Vicinity of an Aerodrome.

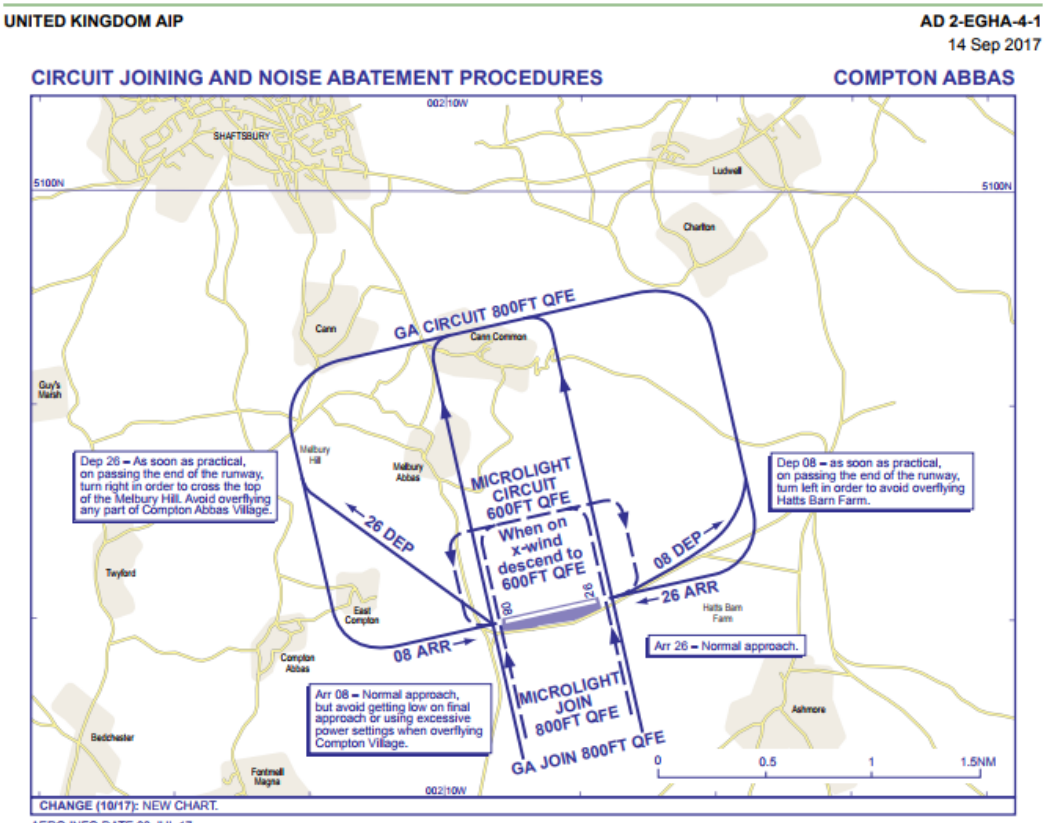


Figure 4: UKAIP entry for Compton Abbas

Summary

An Airprox was reported when a C42(A) and a C42(B) flew into proximity at approximately 1243 on Tuesday 19th September 2017. Both pilots were operating under VFR in VMC, both pilots in receipt of an Air/Ground Service from Compton Abbas.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of reports from the pilots of both aircraft, transcripts of the relevant RT frequencies, radar photographs/video recordings and reports from the Air/Ground operator involved.

The Board began by looking at the actions of the C42(A) pilot. The Board agreed that the radar reply indicated that the C42(A) pilot had carried out a standard overhead join. They also agreed that the C42(A) pilot had misunderstood the position and joining intentions of C42(B), believing that it was following him, when in fact it was actually conducting an entirely different join procedure from the NW to descend deadside rather than a standard overhead join. This had resulted in the mistaken mental model that the C42(B) pilot would be visual with him, and that he would be ahead of C42(B) when he flew crosswind for the visual circuit. It was only as the C42(A) pilot descended deadside that he unexpectedly saw the C42(B) below him and, now probably confused, he sensibly climbed into the overhead to reposition and increase separation. Noting that the C42(B) pilot and A/G operator reported that they did not think they had heard all of the C42(A) pilot's transmissions, the Board urged the C42 pilot to have his radio checked for any intermittent faults.

The Board then turned to the actions of the C42(B) pilot. The pilot reported that he had not heard any calls from the C42(A) pilot, (although the A/G Operator indicated that she had received some of the transmissions). As a result, members opined that he would not have been aware that the C42(A) pilot was conducting an overhead join. That being said, they also commented that all pilots should be aware of likely conflict points when joining (and in) the visual circuit in case other radio failure or non-radio aircraft were also in the pattern. This was particularly pertinent when manoeuvring near the overhead join procedure which would be the default choice for any non-radio aircraft. The C42(A)

was there to be seen, and the C42(B) pilot eventually saw it above him, wherein he descended into the low-level circuit whilst the C42(A) pilot climbed back into the overhead.

The Board then looked at the cause and risk of the Airprox. They opined that the incident had resulted because of a combination of the C42(A) pilot misunderstanding C42(B) pilot's intentions, and the C42(B) pilot not seeing C42(A) descending on the standard overhead join as he himself manoeuvred for his deadside join. In effect, neither pilot had integrated effectively with the other as they carried out their different join procedures, and the Board agreed that this was probably the best description of what had occurred. In agreeing this, the Board thought that it was contributory that some of the C42(A) pilot's transmissions were not received by the C42(B) pilot, although they stressed that this did not absolve either pilot from the need to maintain a robust lookout at all times. Turning to the risk, the Board agreed that, in the end, both pilots had seen each other and had taken timely and effective actions; C42(A) pilot in climbing back to the overhead, and C42(B) pilot in descending and turning to avoid C42(A). As a result, although safety had been degraded, they agreed that there had been no risk of collision and therefore assessed the risk as Category C.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: Neither pilot integrated with the other during the join.

Contributory Factor(s): Some of the C42(A) pilot's transmissions were not received.

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:

ANSP

Situational Awareness & Action was assessed as **not used** because an Air/Ground operator may be used to assist a pilot in making decisions, however, the safe conduct of the flight remains the pilot's responsibility[5].

Flight Crew

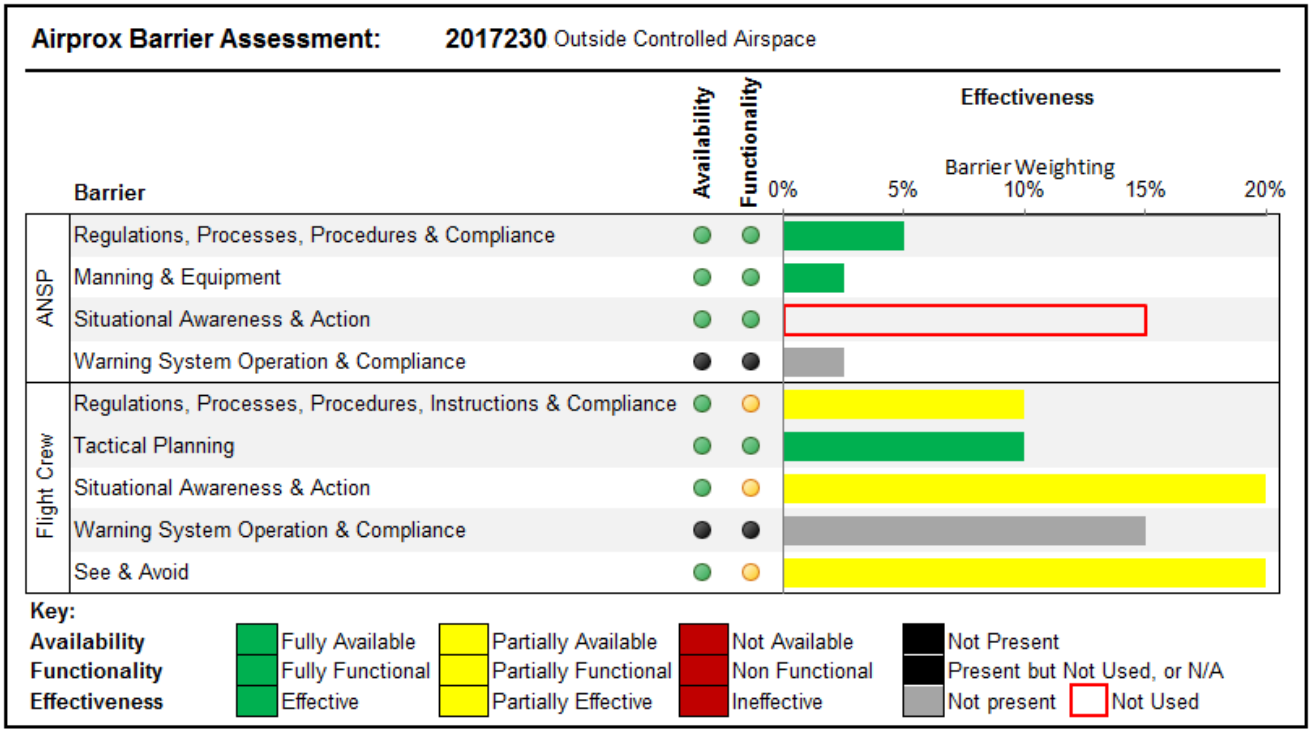
Regulations, Processes, Procedures, Instructions & Compliance was assessed as **partially effective** because neither pilot effectively integrated into the visual circuit.

Situational Awareness & Action was assessed as **partially effective** because C42(A) pilot misunderstood C42(B) pilot's intentions, and C42(A) pilot's R/T calls were not received by C42(B) pilot, thereby reducing the latter's situational awareness.

Warning System Operation and Compliance was assessed as **not present** because neither aircraft was fitted with an electronic warning system.

See and Avoid was assessed as **partially effective** because both pilots saw the other aircraft later than ideal and had to carry out avoiding action.

[4] The UK Airprox Board scheme for assessing the Availability, Functionality and Effectiveness of safety barriers can be found on the UKAB Website.
[5] CAP413, Chapter 4, 4.149


Airprox Barrier Assessment: 2017230 Outside Controlled Airspace
Barrier
Availability
Functionality
Effectiveness
Barrier Weighting
0%
5%
10%
15%
20%
ANSP
Regulations, Processes, Procedures & Compliance
Manning & Equipment
Situational Awareness & Action
Warning System Operation & Compliance
Flight Crew
Regulations, Processes, Procedures, Instructions & Compliance
Tactical Planning
Situational Awareness & Action
Warning System Operation & Compliance
See & Avoid
Key:
Availability
Functionality
Effectiveness
Fully Available
Fully Functional
Effective
Partially Available
Partially Functional
Partially Effective
Not Available
Non Functional
Ineffective
Not Present
Present but Not Used, or N/A
Not present
Not Used