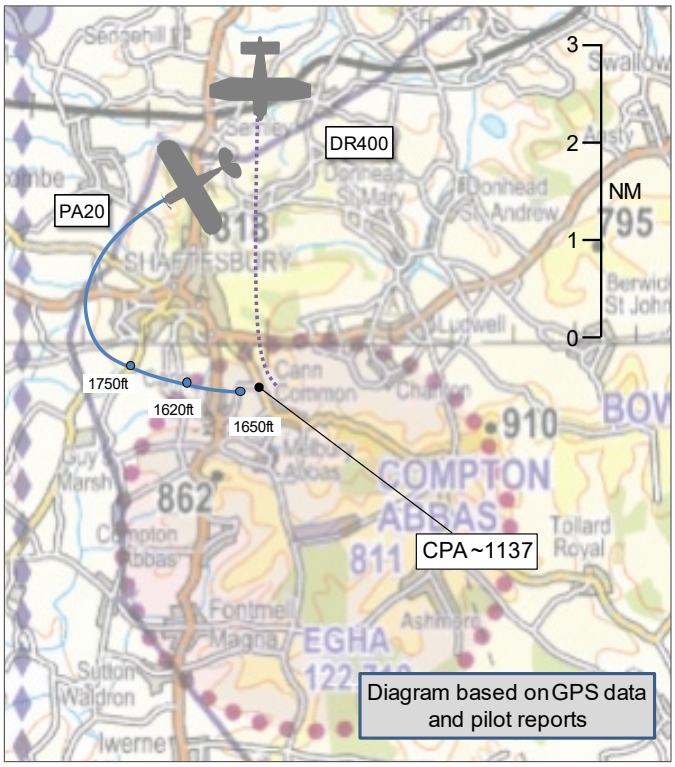
AIRPROX REPORT No 2024169

Date: 19 Jul 2024 Time: ~1137Z Position: 5101N 00211W Location: Compton Abbas

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	PA20	DR400
Operator	Civ FW	Civ FW
Airspace	Compton Abbas ATZ	Compton Abbas ATZ
Class	G	G
Rules	VFR	VFR
Service	AGCS	AGCS
Provider	Compton Abbas	Compton Abbas
Altitude/FL	~1650ft	NK
Transponder	A, C, S	A, C, S
Reported		
Colours	White, Blue	White, Green
Lighting	'Yes'	Strobe
Conditions	VMC	VMC
Visibility	>10km	NR
Altitude/FL	1800ft	1750ft
Altimeter	QNH	NK
Heading	090°	090°
Speed	75kt	90kt
ACAS/TAS	SkyEcho	Not fitted
Alert	None	N/A
Separation at CPA		
Reported	100-200ft V/<200m H	0ft V/2NM H
Recorded	NK	



THE PA20 PILOT reports that they were aware that, because of the Spitfire flights taking place in this period, Compton Abbas's normal circuit pattern was modified with all joins from the north onto the downwind leg. They called Compton Abbas to say that they were approximately 10NM to the east of the field and returning to join as per the above instructions. At the same time, another pilot called up reporting they were in approximately the same position as [the PA20] doing the same thing. They could see this aircraft on their Mode S ([EC device]) and it was actually about 2NM behind them, they also heard another pilot reporting that they were north of the field and going to Compton Abbas, they could not see this aircraft on Mode S [sic], but kept a good look out for it. They positioned from the east of Compton Abbas around the north of Shaftesbury, to join downwind RW26RH. Just as they had finished turning onto the downwind leg another aircraft (which they thought was the aircraft joining from the north with no Mode S [sic]) passed over the top of them in a turn which rolled out just inside them (i.e. between the PA20 and the airfield). This pilot [DR400 C/S] then called downwind. The PA20 pilot called downwind and said "you've just missed us, that was really close as you've cut inside us". The other pilot said "no, there was loads of room". They estimated the vertical separation was less than 200ft and lateral separation was about the same. The weather was CAVOK. The pilot opined that, clearly, they were in that classic high-wing aircraft (the PA20) being overflown by a low-wing aircraft (the DR400). The other pilot's comment that "there was loads of room" was very concerning though, as it indicated that the pilot had seen them before this manoeuvre and still thought it was safe to continue, when it clearly was not safe to do so at all.

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

THE DR400 PILOT reports that the other aircraft was seen well ahead, appearing to fly west of the Compton Abbas ATZ. Having tuned to, and called, Compton Radio at least 10 miles out and calling again on entering the ATZ, no call from other aircraft was heard. Their aircraft was positioned to join at the end of downwind leg, as per airport operations that day; the other aircraft was ascertained at the

time to be flying a heading west of the start of the downwind leg and, as there was no call on the radio, nor was there any other traffic advised by air/ground, they assumed that the other aircraft was transiting west of the airfield and not intending to join. As the ultimate intentions of the other pilot were not 100% known, they ensured visual contact remained with the other aircraft at all times, so they could be ready to take evasive action if needed. They made a deliberate turn of their aircraft on to downwind at the start of the downwind leg, whilst still well separated from, and visual with, the other aircraft, and in a manner that would ensure that the pilot of the other aircraft should see their aircraft. They also made an immediate 'downwind' call in case the other aircraft was joining from a position outside the ATZ, at which point the other pilot advised they were joining downwind and acknowledged the position of [the DR400].

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

THE COMPTON ABBAS AGO reports that they were not aware of this event, as it was neither seen from their position nor reported by either pilot at the time.

Factual Background

The weather at Bournemouth was recorded as follows:

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METAR EGHH 141220Z 18006KT 150V210 9999 FEW026 18/13 Q1012=
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The Compton Abbas website states that on Spitfire operating days the visual circuit joins are to be as follows:

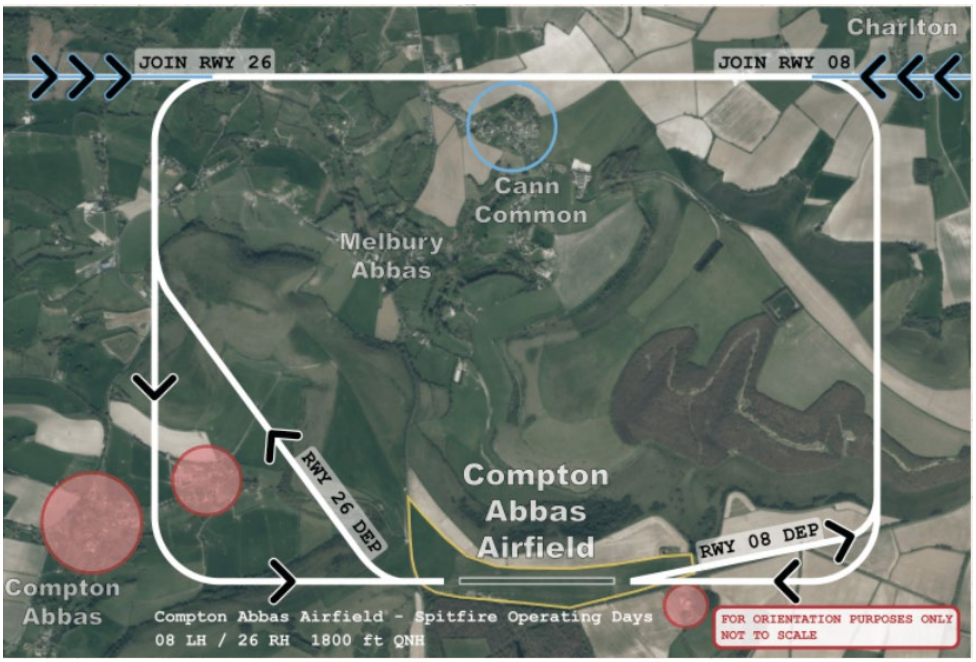


Figure 1 – circuit join on Spitfire operating days.

During NOTAM'd days of Spitfire Operations, the standard overhead join and deadside will not be in use. A downwind join must be used instead. This is to ensure these areas are kept sterile exclusively for the Spitfire.

Please plan your airfield arrival to join on 'extended downwind', at the circuit altitude of 1800' QNH, as shown by blue arrows in the diagram above.

The downwind leg is flown as usual, please keep the aircraft to the North of 'Cann Common', marked with a blue circle on the diagram.

Analysis and Investigation

UKAB Secretariat

An analysis of the NATS radar replay was undertaken. The DR400 could be identified using Mode S data and could be seen approaching Compton Abbas from the north. The PA20 pilot had provided a GPS data file and, by comparing the two data sources, the aircraft could be identified on the NATS radar replay, although not confirmed via Mode S.

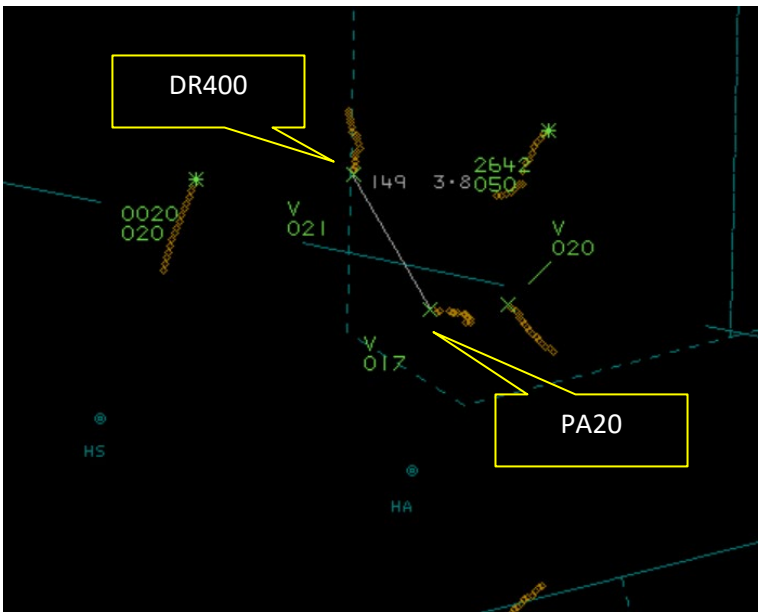


Figure 2 - 1132:53

At Figure 2, the two aircraft were 3.8NM apart and they continued to close until 1133:40 (Figure 3), when the PA20 faded from the radar replay. The DR400 also faded from the radar replay (probably as they both descended below radar coverage) at 1134:05.

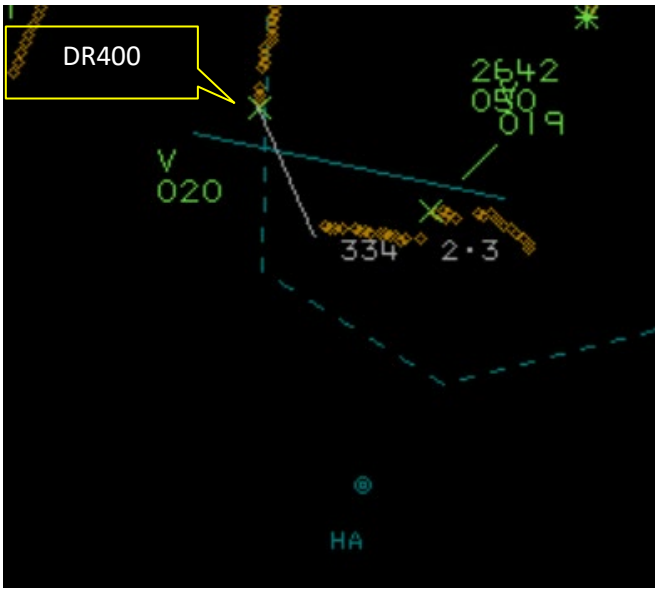


Figure 3 -1133:40

Although the positioning of the PA20 could be determined from their GPS track, other ADS-B data platforms were assessed and there was no corresponding data for the DR400; therefore the exact separation could not be ascertained.

The PA20 and DR400 pilots shared an equal responsibility for collision avoidance and not to operate in such proximity to other aircraft as to create a collision hazard.[1] 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.[2]

Summary

An Airprox was reported when a PA20 and a DR400 flew into proximity at Compton Abbas at around 1137Z on Friday 19th July 2024. Both pilots were operating under VFR in VMC, in receipt of an AGCS from Compton Abbas.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of reports from both pilots, radar photographs/video recordings, GPS track data for the PA20 and a report from the AGO involved. 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 discussed the actions of the PA20 pilot. They had been joining downwind as described in the Compton Abbas procedures for Spitfire days. They had heard the DR400 pilot call on the frequency, which had given them generic situational awareness (**CF4**) and had been looking for them but to no avail. The pilot had reported that although they could see other aircraft on their CWS, because their CWS could not detect a transponder and the DR400 had not had any ADS-B out equipment, they had not received any information on it (**CF5**). Members thought that at this stage, having known that another aircraft had been joining, but not being able to see it, the PA20 pilot could have called on the radio to ask for more information (**CF2**). In the event, the PA20 pilot had not seen the DR400 until late, when it overflew their aircraft (**CF6**).

Turning to the DR400 pilot, members opined that although the exact route taken by the DR400 was not known, from the description by both pilots, it appeared that the DR400 pilot had joined the circuit at 90° to, and at the start of, the downwind leg and not, as the procedures decreed, from an 'extended downwind' position (**CF1**). The DR400 pilot reported that they had been visual with the PA20 as it had routed west, but had believed that the other aircraft had not been intending to join the circuit. They reported that they had not heard the other pilot on the frequency, so it had been likely that the PA20 pilot's joining call had occurred prior to the DR400 pilot reporting on frequency. However, having seen another aircraft so close to the circuit, members thought that the DR400 pilot would have been wise to have requested further information and that they could have asked the AGO whether there had been other aircraft joining the circuit (**CF2**). Without a CWS, and because they had not heard the PA20 pilot on the frequency, the DR400 pilot had not received any prior situational awareness that the PA20 had been likely to affect their join (**CF4**). Nevertheless, members agreed that it had been for the DR400 pilot to conform with, or avoid, the PA20 in the circuit (**CF3**). The DR400 pilot reported that they had remained visual with the PA20 at all times, but members thought that the pilot should have given the PA20 a wider berth as they had joined; once it had become apparent that the PA20 had indeed been joining the circuit, the DR400 pilot would have been better placed to have positioned behind because, without knowing the intentions of the PA20 pilot, flying close to it ran the risk of the other pilot performing an unexpected manoeuvre and decreasing the separation further (**CF7**).

The Board briefly looked at the role of the AGO. Although the RT is sometimes recorded at Compton Abass, on this day there had been a problem with the system and so the RT had not been preserved. Members were disappointed to hear this, because the RT could have answered questions on exactly what information each pilot had received. The AGO had not been required to sequence the aircraft in

[1] (UK) SERA.3205 Proximity.
[2] (UK) SERA.3225 Operation on and in the Vicinity of an Aerodrome.

the circuit, and the separation and order had been entirely the responsibility of the pilots. Members wondered whether the AGO had given information to the DR400 pilot on the other joining aircraft based on the information passed by the pilots, but without the RT recordings this information was not available. Members also briefly discussed the procedures for Spitfire days as written on the Compton Abbas website; they noted that although it clearly stated that pilots should join on an extended downwind in one paragraph, the very next one stated that 'the downwind leg is flown as normal' which members thought could be misunderstood, and they advised a rewording to clarify that aircraft should join from an extended downwind position.

When determining the risk of collision, members considered the reports from both pilots together with the limited radar and GPS data available. There had been no radar data to provide an exact separation at CPA and the estimates from the two pilots were very different. Although it had been likely that the PA20 pilot had experienced some 'startle effect' as the DR400 suddenly flew close by, which likely made them assess the two aircraft to be closer, still members thought that the 2NM estimated by the DR400 pilot had been on first sighting. The DR400 pilot had reported being visual at all times and some members thought that this had ensured that there had not been a risk of collision, however, the majority agreed that the description of the separation within the visual circuit, with neither pilot knowing the intentions of the other, meant that safety had not been assured (**CF8**); Risk Category B.

PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK

Contributory Factors:

	2024169			
CF	**Factor**	**Description**	**ECCAIRS Amplification**	**UKAB Amplification**
	Flight Elements			
	• Regulations, Processes, Procedures and Compliance			
1	Human Factors	• Use of policy/Procedures	Events involving the use of the relevant policy or procedures by flight crew	Regulations and/or procedures not complied with
	• Tactical Planning and Execution			
2	Human Factors	• Accuracy of Communication	Events involving flight crew using inaccurate communication - wrong or incomplete information provided	Ineffective communication of intentions
3	Human Factors	• Monitoring of Environment	Events involving flight crew not to appropriately monitoring the environment	Did not avoid/conform with the pattern of traffic already formed
	• 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	Technical	• ACAS/TCAS System Failure	An event involving the system which provides information to determine aircraft position and is primarily independent of ground installations	Incompatible CWS equipment
	• See and Avoid			
6	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
7	Contextual	• Loss of Separation	An event involving a loss of separation between aircraft	Pilot flew into conflict
	• Outcome Events			
8	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 Assessment[3]

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 AGO was not required to sequence the visual circuit traffic.

Flight Elements:

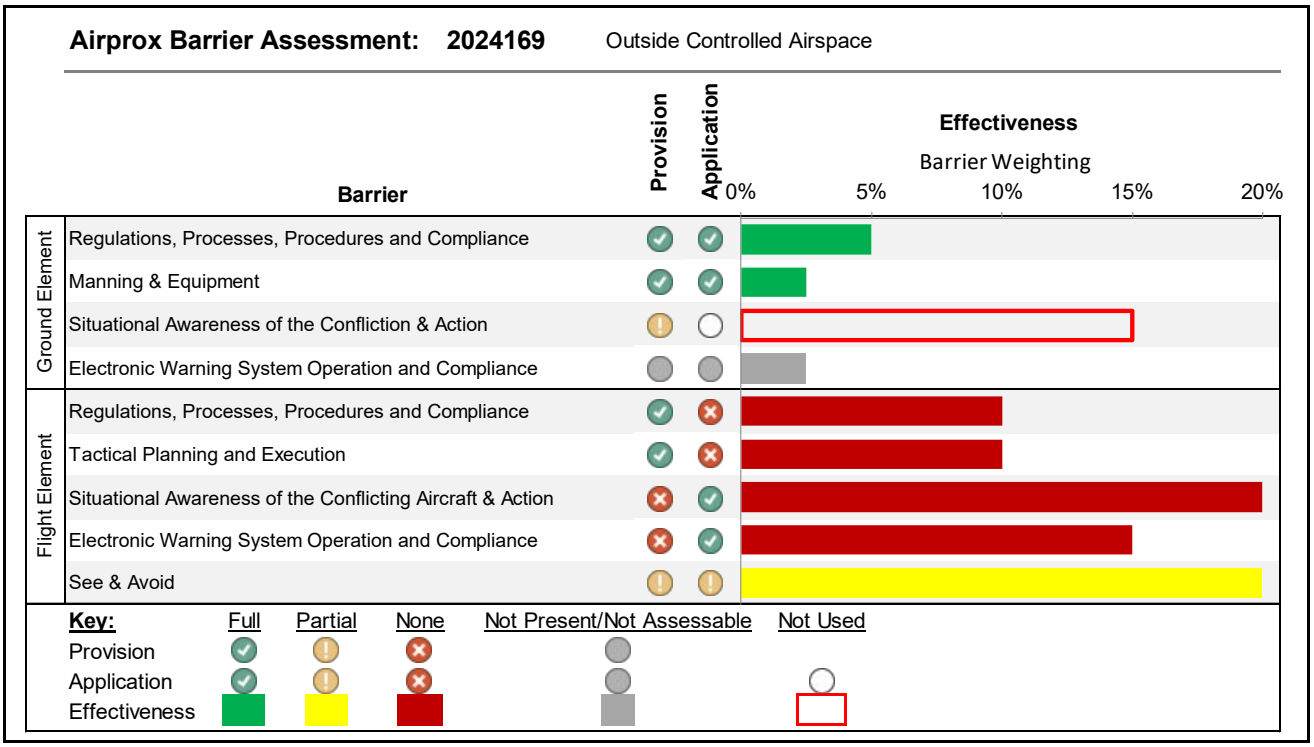
Regulations, Processes, Procedures and Compliance were assessed as **ineffective** because the DR400 pilot had not joined through and extended downwind position, in accordance with the Compton Abbas procedures for the day.

Tactical Planning and Execution was assessed as **ineffective** because the DR400 pilot had been required to conform with, or avoid, the pattern of traffic in the circuit and both pilots could have called for more information.

Situational Awareness of the Conflicting Aircraft and Action were assessed as **ineffective** because the DR400 pilot had no situational awareness that the PA20 had been joining the circuit and the PA20 pilot had only generic situational awareness about the DR400; they heard the pilot call, but were not aware of the DR400's exact position.

Electronic Warning System Operation and Compliance were assessed as **ineffective** because the EWS on the PA20 could not detect the transponder on the DR400.

See and Avoid were assessed as **partially effective** because the DR400 pilot flew into conflict with the PA20 with the aircraft in sight, and the PA20 pilot had seen the DR400 late.



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