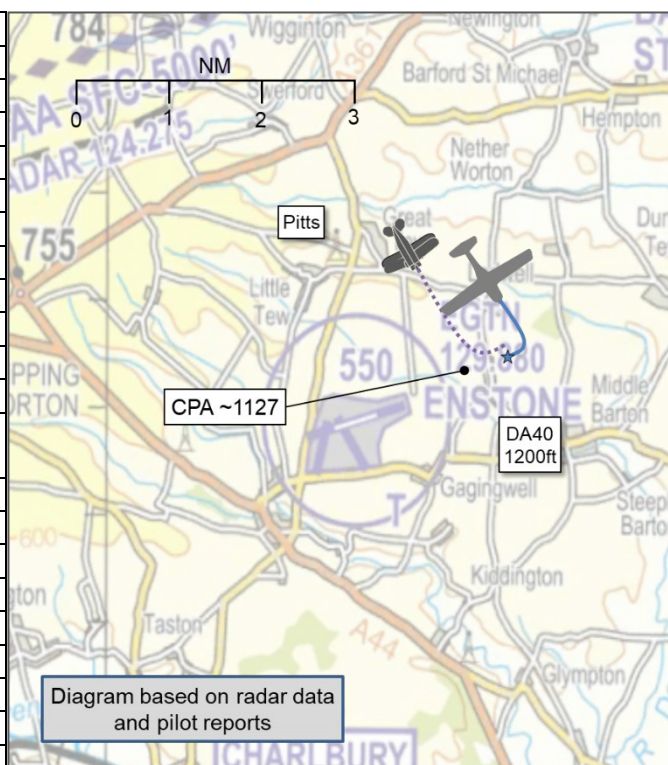


## **AIRPROX REPORT No 2020106**

Date: 26 Aug 2020 Time: 1127Z Position: 5156N 00125W Location: Enstone

### **PART A: SUMMARY OF INFORMATION REPORTED TO UKAB**

Recorded	Aircraft 1	Aircraft 2
Aircraft	DA40	Pitts
Operator	Civ FW	Civ FW
Airspace	London FIR	London FIR
Class	G	G
Rules	VFR	VFR
Service	AGCS	AGCS
Provider	Enstone	Enstone
Altitude/FL	1200ft	NK
Transponder	A, C, S	Off
Reported		
Colours	White, Red	Red
Lighting	Landing, Nav, Taxi, Strobe	Nil
Conditions	VMC	VMC
Visibility	>10km	>10km
Altitude/FL	1200ft	NR
Altimeter	QNH (1013hPa)	QNH
Heading	260°	NR
Speed	80kt	85-90kts
ACAS/TAS	Unknown	Unknown
Alert	Unknown	Unknown
Separation		
Reported	30ft V/20m H	Not Known
Recorded	NK	



**THE DA40 PILOT** reports returning to land after a general handling lesson away from the airfield. There was a fly-in event taking place and they were aware of many unfamiliar aircraft being in the vicinity. They were on final approach, with the student conducting the landing, when another pilot called downwind to land RW26 on a right hand circuit. Naturally, the crew looked to the 2 o'clock to spot the aircraft. At this moment they both spotted a red Pitts, 100m away, converging directly towards them. The student's initial reaction was to roll left however that would have raised the right wing into the aircraft and almost guaranteed a collision, so the Instructor put the aircraft into an aggressive nose down attitude to avoid collision. The circuit height is 1400ft QNH, the Pitts was 200ft lower than circuit height, had called downwind on a right hand circuit when was in fact on the extended centreline and then proceeded to make a left hand teardrop turn to position on to final. The aircraft, as a Pitts, already has poor visibility and was flying at a slower airspeed which would only make the forward visibility worse. They opined that the pilot of the other aircraft did not see them or at least made absolutely no effort to avoid a very possible collision. They wondered whether there had been a loss of situational awareness and were unimpressed with the display of poor airmanship. However, noted that as an uncontrolled airfield coupled with a fly-in, these things can happen. They did not raise the Airprox on frequency as they believed it would be a distraction to both them and the other landing pilot at a critical phase of flight.

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

**THE PITTS PILOT** reports that there are three parallel runways at Enstone. They were flying in a Pitts S-2B and approaching the (RH) circuit from the west, with the intention of landing on the most northerly (grass) airstrip, RW26. The radio traffic was heavy, and they understood there were also aircraft in the circuit intending to land on the centre bitumen runway. The Pitts S-2B has no flaps, so the approach speed is relatively fast - approx 85-90 knots - compared to many other light aircraft. The pilot sits behind

the trailing edge of both wings, which in cross-section have a symmetrical airfoil, necessitating a nose-high approach attitude (approx 10° above the horizon) as speed is decreased. This results in exceedingly poor visibility forwards in the sector from 60° left to 60° right of the nose. In the sector 20° left and right of the nose there is no forward visibility whatsoever, unless the pilot is looking up in the gap between the cowling and the lower surface of the upper wing, or above the upper wing entirely. As a result, it can be very difficult to see other aircraft in a circuit environment, and there is the ever-present risk of inadvertently "running down" slower traffic ahead, and even overtaking them. This is especially so on the base leg and final leg parts of the circuit, where preceding aircraft typically slow down even further by extending more flap. Unfortunately, the nose-high attitude of the Pitts, and the biplane wing layout, also prohibits flying a final approach track aligned with the extended runway centreline, as the view of the runway and surrounds would be entirely obscured by the nose of the aircraft. This necessitates flying a final approach track offset by at least 20°, in addition to employing a side-slip technique - typically with a sustained bank angle of 30-40°, wing down. From this attitude, the point of intended touchdown can be held in view to one side of the aircraft's nose, looking forward in the gap between the upper and lower wings. Nevertheless, the ideal Pitts circuit is a tight, descending, constant radius curved approach, from the downwind leg onto the runway threshold itself, however this type of approach is prohibited at Enstone. In the event, the pilot made three approach attempts. On the first attempt, they had to discontinue the circuit at the end of the downwind leg, as preceding traffic came into view on the right-hand side, making their turn from base leg onto final approach. The pilot judged that had they continued downwind to gain sufficient spacing from this traffic, it would potentially take them out of the circuit and over noise sensitive villages. Also, because of the need to fly an offset final approach track, at that distance if they were to turn back toward the runway, there could be no base leg, and they would effectively appear as opposite direction (albeit divergent) traffic to aircraft that were previously behind them in the circuit. They broke away from this approach by turning left (towards the north) and made a radio transmission to that effect. While manoeuvring to avoid other villages, they then saw the aircraft that had been following turn right, onto base leg. The pilot held off for some time, then attempted to rejoin the circuit for another attempt, but was again frustrated by traffic slowing ahead (a high wing single engine aircraft who was believed to be landing on the grass runway, and which potentially could also require backtracking). Again they broke away from the circuit by turning to the north. On the third approach attempt, they did not see any other circuit traffic until they reached approximately base leg position. The aircraft they then (briefly) saw was obviously on final approach to land on the bitumen runway (to the south of their track), but they judged that with the offset final approach track and the considerable displacement of the grass runway threshold (relative to the bitumen runway) that no conflict would occur. They maintained their offset track and right wing-down sideslip throughout the remainder of the approach, so the view of that aircraft (on the left) was lost. From the viewpoint of that aircraft however, it might appear that they were converging on to the other aircraft (and catching it), and, if the other pilot did not realise that they were intending to land on the north (grass) runway, potentially cutting across their path. However, they were not sure whether this was the conflict aircraft. In any event, during all the approaches, they made it clear in their broadcasts that it was always their intention to land on the northern grass runway. At no time did they feel that they had compromised separation with any aircraft to the extent that an Airprox would be warranted. Indeed, they went to considerable lengths to avoid it.

**THE ENSTONE AERODROME OPERATOR** reports that the flying club Oxfordshire Sport Flying had an Air Ground Operator, operating Enstone Radio for the Midland Spirit Fly-in. This event was being run by another company on a separately owned portion of land away from their operation at Enstone. Due to the increase in movements from potential non-Enstone based visitors they took the measures to have a radio operator in place on the day. The AGO was unaware of any incident and no formal report from any pilot or member on the ground was passed forward. It is since their understanding that the DA40 traffic was on a long final outside of the normal circuit and in essence got cut up by an aircraft flying the promulgated circuit. Unfortunately this aircraft was the Pitts Biplane and as such was flying a curved approach to maintain visual with the runway and was unable to see the DA40 on its long final due to the aircraft's wing position.

## Factual Background

The weather at Oxford was recorded as follows:

METAR EGTK 261120Z 28013KT 9999 BKN035 19/11 Q1014=

## Analysis and Investigation

### UKAB Secretariat

Whilst Enstone is not radar equipped, the Enstone circuit can be seen on the NATS radars. At Figure 1, the DA40 (identified by Mode S) can be seen downwind in the visual circuit, which was busy with other aircraft ahead and joining behind. The Pitts is not transponder equipped and so can not be identified, although a PSR contact can be seen to the north-east of the airfield. At Figure 2 and 3 the DA40 can be seen turning base leg, at 2.6NM measured from the airfield datum.

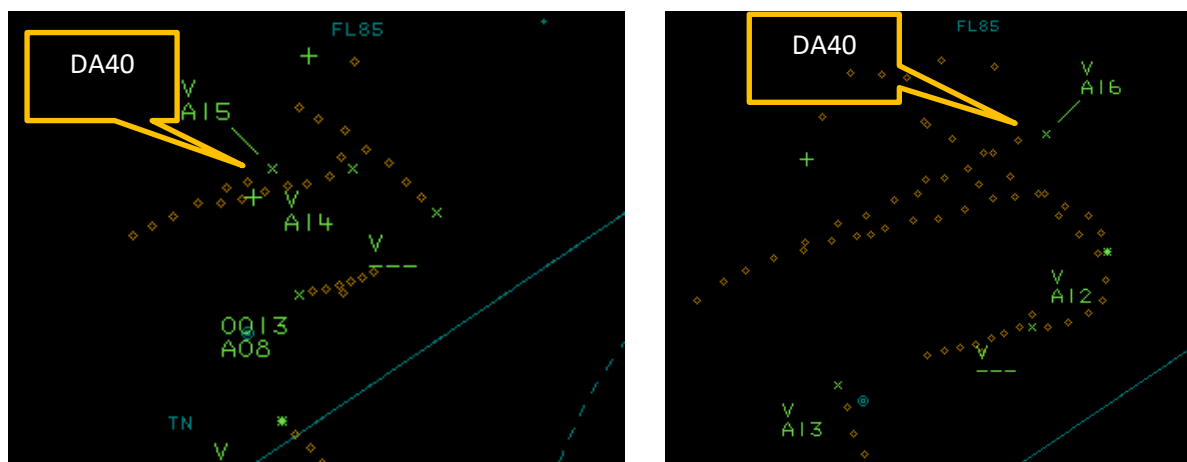


Figure 1: 1125:04 Figure 2: 1125:53

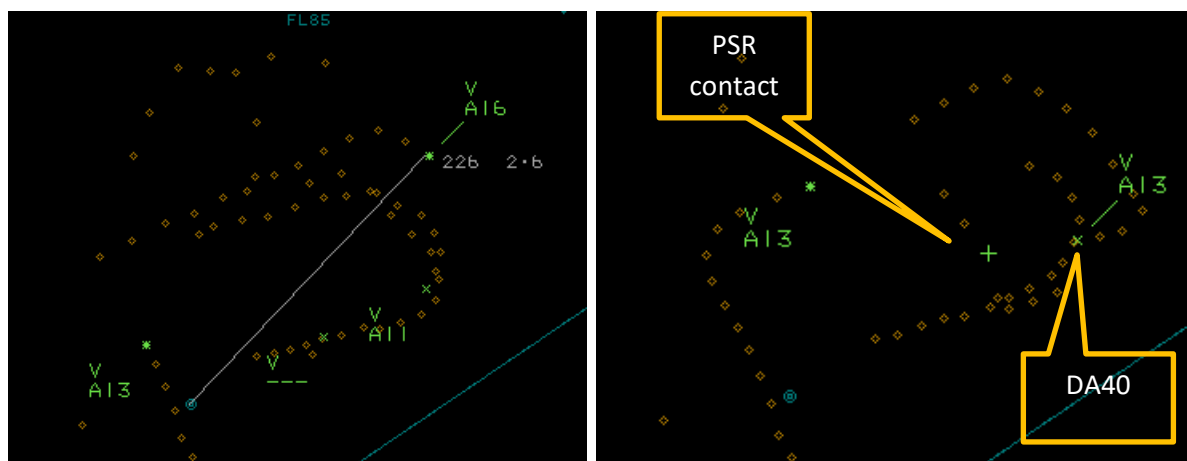


Figure 3: 1126:14 Figure 4: 1127:11

At 1127:11, Figure 4, a PSR track can be seen on a base-leg, similar to that described by the Pitts pilot, although without SSR the height is not known. However, the PSR then disappears from the radar and is subject to radar jitter for the next few sweeps, reappearing at Figure 5 to the east of the DA40. Consequently, the exact separation at CPA is not known.

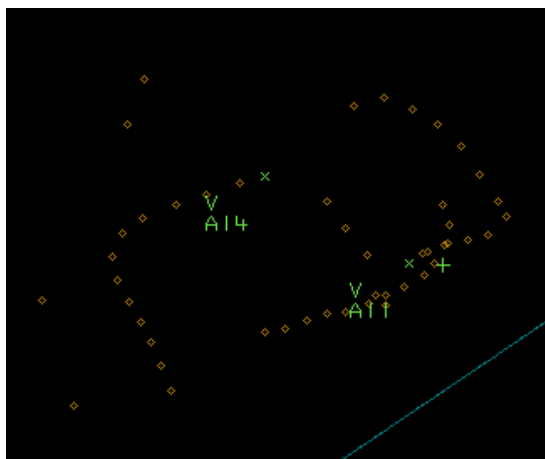


Figure 5: 1127:21

The DA40 and Pitts pilots shared an equal responsibility for collision avoidance and not to operate in such proximity to other aircraft as to create a collision hazard.<sup>1</sup> If the incident geometry is considered as head-on or nearly so then both pilots were required to turn to the right.<sup>2</sup> 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.<sup>3</sup>

## Summary

An Airprox was reported when a DA40 and a Pitts flew into proximity at Enstone at 1127Z on Wednesday 26<sup>th</sup> August 2020. Both pilots were operating under VFR in VMC and both were in receipt of an AGCS from Enstone.

## PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of reports from both pilots, radar photographs/video recordings 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.

Due to the exceptional circumstances presented by the coronavirus pandemic, this incident was assessed as part of a 'virtual' UK Airprox Board meeting where members provided a combination of written contributions and dial-in/VTC comments.

The Board first looked at the actions of the DA40 pilot. Members discussed that the circuit that the DA40 pilot flew was wide and long, turning base leg at around 2.6NM. Although other aircraft ahead had also flown longer than average circuits, they thought that the circuit flown by the DA40 was so enlarged, it was not surprising that the Pitts pilot had struggled to fit in to make an approach (**CF1**, **CF2**), indeed it was likely that the other pilot had not known the DA40 was in the circuit at all. Members acknowledged that within training environments it was often the case that students flew less accurate circuits but opined that if not checked, circuits had the potential to become very large and wide. They noted that they saw a number of Airprox each year where pilots did not see other aircraft on very long finals and turned in ahead, and stressed the need to maintain the predictability of the standard circuit. Once on final, the pilot saw the Pitts approaching from the right and the Instructor was able to take control to take avoiding action and then continue the approach once the Pitts was clear (**CF7**).

Turning to the Pitts pilot, the Board struggled to work out exactly which approach in the narrative had been the Airprox approach, and the intermittent nature of the radar return did not offer many clues. However, they thought it likely that the Airprox occurred on the second approach that the Pitts pilot

<sup>1</sup> SERA.3205 Proximity.

<sup>2</sup> SERA.3210 Right-of-way (c)(1) Approaching head-on.

<sup>3</sup> SERA.3225 Operation on and in the Vicinity of an Aerodrome.

made, at the point at which they turned out left, onto north, to re-position. At that point they would have been heading directly towards the DA40, which was probably obscured due to the poor visibility from the Pitts (CF5). A GA member with Pitts flying experience told the Board that it was indeed very difficult to see out of the Pitts when making an approach, but that knowing this, it was up to the pilot to put mitigations in place to ensure they fitted into the visual circuit safely. Members wondered why the pilot had broken-off by turning left and not made a standard go-around, which would have been much more predictable to other pilots in the circuit. This may have given the Pitts pilot the opportunity to climb into the overhead to reset and to ensure they were visual with all the circuit traffic before trying the next approach (CF1,CF2). In the event, the Board thought that the Pitts pilot probably had not realised the DA40 was making the approach and so had not integrated with it (CF3, CF4).

The Board commended Oxfordshire Sport Flying for providing an Air Ground Operator on what was likely to be a busy flying day. But they could not help but wonder whether the separate flying entities at Enstone needed closer liaison to ensure that all flying elements using Enstone were able to do so safely and effectively, in this case neither pilot appeared to be aware of the intentions of the other (CF4).

Finally, in determining the risk, members quickly agreed that when breaking off the approach and turning outbound, the Pitts pilot was probably not visual with the DA40, therefore safety had not been assured (CF6). However, the last minute avoiding action taken by the DA40 pilot had likely increased the separation and ensured that a much closer encounter had not occurred and so they assigned a Risk Category B.

## **PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK**

### Contributory Factors:

	2020106		
CF	Factor	Description	Amplification
	<b>Flight Elements</b>		
	<b>• Regulations, Processes, Procedures and Compliance</b>		
1	Human Factors	• Flight Crew ATM Procedure Deviation	
	<b>• Tactical Planning and Execution</b>		
2	Human Factors	• Action Performed Incorrectly	Incorrect or ineffective execution
3	Human Factors	• Monitoring of Other Aircraft	Did not avoid/conform with the pattern of traffic already formed
	<b>• Situational Awareness of the Conflicting Aircraft and Action</b>		
4	Human Factors	• Understanding/Comprehension	Pilot did not assimilate conflict information
	<b>• See and Avoid</b>		
5	Contextual	• Poor Visibility Encounter	One or both aircraft were obscured from the other
6	Contextual	• Near Airborne Collision with Aircraft, Balloon, Dirigible or Other Piloted Air Vehicle	Piloted air vehicle
7	Human Factors	• Perception of Visual Information	Pilot was concerned by the proximity of the other aircraft

Degree of Risk: B.

### Safety Barrier Assessment<sup>4</sup>

In assessing the effectiveness of the safety barriers associated with this incident, the Board concluded that the key factors had been that:

<sup>4</sup> The UK Airprox Board scheme for assessing the Availability, Functionality and Effectiveness of safety barriers can be found on the [UKAB Website](#).

**Flight Elements:**

**Regulations, Processes, Procedures and Compliance** were assessed as **partially effective** because both pilots flew significantly different circuits, which made it unclear to either pilot who should integrate with the other.

**Tactical Planning and Execution** was assessed as **partially effective** because the DA40 pilot did not adjust their ground track to conform with the predominant circuit and the Pitts pilot did not fly a standard go-around.

**Situational Awareness of the Conflicting Aircraft and Action** were assessed as **partially effective** because although both pilots could hear the other on the frequency, neither assimilated properly that the other was in the vicinity.

