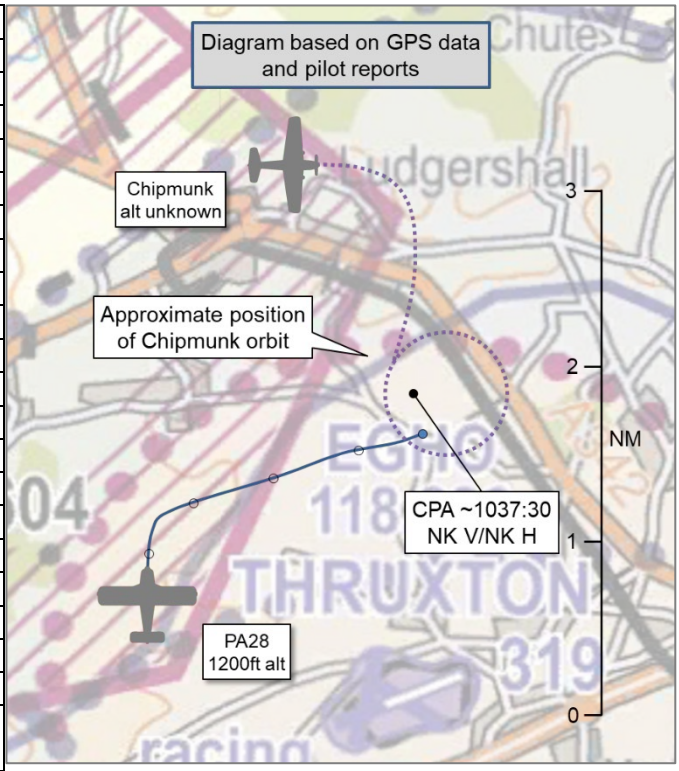
AIRPROX REPORT No 2021189

Date: 17 Sep 2021 Time: ~1037Z Position: 5114N 00136W Location: Thruxton airfield visual circuit

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	PA28	Chipmunk
Operator	Civ FW	Civ FW
Airspace	Thruxton ATZ	Thruxton ATZ
Class	G	G
Rules	VFR	VFR
Service	AGCS	AGCS
Provider	Thruxton Radio	Thruxton Radio
Altitude/FL	1200ft	NR
Transponder	A, C, S	A, C, S
Reported		
Colours	White, grey	Red, white
Lighting	Strobes, landing	Nil
Conditions	VMC	VMC
Visibility	>10km	>10km
Altitude/FL	1200ft	1400ft
Altimeter	QNH (1014hPa)	QFE (1003hPa)
Heading	060°	'South'
Speed	95kt	90kt
ACAS/TAS	Not fitted	Not fitted
Separation at CPA		
Reported	50ft V/300ft H	500ft V/0.5-0.75NM H
Recorded	NK V/NK H	



THE PA28 PILOT reports that they departed RW25RH circuit to level off at 1200ft QNH for a downwind departure due to the active MATZ above. [The Chipmunk pilot] radioed for a base-leg join (non-standard for Thruxton) and was initially on a constant bearing approaching from their left from 0.5NM distance. The Chipmunk passed about 0.25NM in front of them, from left-to-right and approximately 50-100ft above. [The Chipmunk pilot] radioed that they spotted another joining aircraft and said they would do a "left orbit on base". At this point, [the Chipmunk] was in their 1 o'clock, turning left onto the same heading as them. The PA28 pilot radioed a warning "to the orbiting aircraft on base left, stop the orbit or you risk a collision" hoping [the Chipmunk pilot] would cease the turn and fly in the same direction as them. [The Chipmunk pilot] ignored the warning and continued to turn left towards them and passed down their left wing, 50ft above and 300ft to their 9 o'clock. At this point, [the Chipmunk] was flying the reciprocal downwind heading. [The Chipmunk pilot] then radioed to say they had seen [the PA28] and carried on turning onto base, behind and to their left, and landed shortly after. The PA28 pilot's options were limited as they couldn't tell if [the Chipmunk] would pass to their left-hand side or if [the Chipmunk pilot] would fly a tighter turn resulting in a head on crash. If the PA28 pilot turned right, they would have overflown a noise abatement area (Appleshaw village[1]) and lost sight of the other aircraft and then been on similar base leg heading in close proximity to the other aircraft. [The Chipmunk pilot] was orbiting on the corner of downwind and base leg.

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

THE CHIPMUNK PILOT reports that they had booked out with Salisbury Ops and [their departure airfield]. Immediately after take-off, they contacted Salisbury Ops on 122.750Mhz, as Netheravon DZ was non-operational, and were squawking 7002. They informed the Salisbury Ops controller [sic] that they were en-route to Thruxton, and the controller [sic] asked that they inform them when changing

[1] UKAB note: No reference to Appleshaw village as an area to be avoided could be found in the entry for Thruxton in the UK AIP Part 3 – Aerodromes.

frequency to Thruxton. On reaching Ludgershall, the Chipmunk pilot called Salisbury Ops stating that they were transferring to Thruxton on 118.280MHz and the controller [sic] acknowledged. They maintained their squawk of 7002 as they were still close to EG D126 and Boscombe Down would also pick up their squawk and know that the Chipmunk pilot was operating with Salisbury Ops. They then called Thruxton for joining instructions, who replied with RW25RH, QFE 1003. The pilot read back the message and passed their position as Ludgershall, at which point they were at 1350-1400ft on 1003hPa, and asked whether they could join right-base for RW25, which was approved (they recalled). Immediately following this, an aircraft called on long finals for a straight-in [approach] to RW25, which was cleared by ATC (they recalled). The Chipmunk pilot saw this aircraft and, to give separation [from the aircraft on final], they called that they were going to do a left-hand orbit. They were still at 1350-1400ft and commenced the left-hand orbit. Just as they were in this orbit, an aircraft called saying they were going to raise an Airprox. This aircraft was below them at their 1-2 o'clock. This was the first call that they had had from this aircraft. They watched this aircraft depart the downwind leg (they had stayed at their height while in the orbit, as they are aware that, on a weekday, the circuit height is 800ft). They then rolled out of the orbit, joined base [leg] and landed. After landing, they phoned ATC and asked about the Airprox. The controller [sic] on duty said they only heard what the other aircraft had called and that they did not think that this aircraft and the Chipmunk would be at that location at the same time. The Chipmunk pilot gave the controller [sic] their phone number and asked whether they would pass it onto the [other] pilot, so that they could have a chat about what had happened. They did not get a phone call.

The pilot assessed the risk of collision as 'None'.

THE THRUXTON AIR/GROUND OPERATOR reports that they were the Duty Operations Manager on the day in question. At the time of the incident, they were at their position in the tower providing an Air/Ground Comms service. The runway in use was RW25RH circuit for fixed-wing aircraft. On frequency were an AA5 inbound, a PA28 at the holding point of RW25, a PC12 waiting to enter and backtrack the R/W at holding point W and a PA28 with a student pilot and instructor in the circuit to depart the ATZ on a local flight. [The Chipmunk pilot] came on frequency inbound from the north requesting airfield information. This was passed to the pilot along with the information that there was one aircraft in the circuit to depart the ATZ and one aircraft inbound from the east which was joining straight in. The [Chipmunk] pilot stated that they would join right-base behind the inbound AA5 which they reported that they were visual with. The Chipmunk pilot then stated that they would perform one orbit for spacing. The AGO does not remember if the Chipmunk pilot stated that they were visual with the PA28 in the circuit or not. It was whilst the Chipmunk pilot was performing this orbit that they were alleged to be close to [the PA28], which was at the end of the downwind leg departing the ATZ. Unfortunately, the AGO did not see the orbit or how close the two aircraft were to each other. The first they knew of an Airprox was the pilot of [the PA28] saying they were going to report an Airprox, which the AGO noted in the tower log. The pilot of the Chipmunk rang the tower on landing. They left their phone number so the other pilot could speak to them if they wished. The Chipmunk pilot stated that they were above the departing PA28. The AGO advised the Chipmunk pilot to write down what happened whilst it was still clear. The AGO asked the instructor pilot of the PA28 to come to the tower when they landed. The AGO offered the PA28 instructor the Chipmunk pilot's number but it was not taken. The instructor said the other aircraft was slightly higher but close and that they had already written down their account of the occurrence.

Factual Background

The weather at Boscombe Down was recorded as follows:

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METAR EGDM 171020Z 17009KT 9999 SCT022 SCT035 BKN250 18/12 Q1014 BECMG SCT025 RMK WHT
BECMG BLU=
METAR EGDM 171050Z 19010KT 9999 SCT025 BKN250 19/12 Q1014 NOSIG RMK BLU BLU=
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Analysis and Investigation

UKAB Secretariat

An analysis of the NATS radar replay was undertaken; the PA28 was not detected by the NATS radars at any point in the lead-up to or during the Airprox, and the Chipmunk was only detected intermittently as a primary radar track, and was also undetected for the duration of the Airprox event. Consequently, no radar data pertinent to the Airprox was available. However, the PA28 pilot was able to supply a log file containing positional and altitude information which was used to construct the diagram; unfortunately, no such data was available for the Chipmunk.

The PA28 and Chipmunk 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]

Summary

An Airprox was reported when a PA28 and a Chipmunk flew into proximity in the Thruxton airfield visual circuit at approximately 1037Z on Friday 17th September 2021. Both pilots were operating under VFR in VMC and both pilots were in receipt of an AGCS from Thruxton Radio.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of reports from both pilots, radar photographs/video recordings, GPS data from the PA28 pilot and a report from the air/ground operator 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.

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 considered the actions of the PA28 pilot and noted that they had first become aware of the Chipmunk joining the circuit when they had heard its pilot calling on the radio for a join on base-leg. The Board agreed that this had enabled them to gain visual with the aircraft whilst they themselves were on the downwind leg and then assess the situation as it developed in front of them. Members felt that there was little else that the PA28 pilot could have done to avoid the Airprox and had taken appropriate action to maintain separation, first by making a radio call and then by manoeuvring their aircraft. The Board agreed that, although the PA28 pilot had monitored the situation as best they could, they had been concerned by the proximity of the Chipmunk (**CF6**) and had had to take avoiding action.

Turning to the actions of the Chipmunk pilot, the Board noted that they were familiar with the routeing from their departure airfield to Thruxton and had flown a similar route many times in the past. Some members wondered if this had perhaps led to a degree of complacency on the part of the Chipmunk pilot, or to planning on a non-standard joining procedure because they had not had any issues with a base-leg join previously. There then followed a discussion on the various means of integrating into a visual circuit, with specific emphasis on the use of orbits. The Board acknowledged that orbits are widely used at aerodromes with an air traffic controller but cautioned against their use at uncontrolled airfields (i.e. those with a FISO, an AGO or no ground presence) as it can be difficult to synchronise with other circuit traffic. Members opined that the safer option is to join in the overhead to gain situational awareness on all circuit traffic before committing to the visual circuit. The Board agreed that, in this event, the Chipmunk pilot had gained situational awareness of the joining aircraft but had been completely unaware of the PA28 on downwind (**CF3**). The Board did not have the benefit of RT recordings but, according to the Thruxton Air Ground Operator's report, the Chipmunk pilot had been

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

informed of the PA28 when they called to join on base-leg, and the PA28 pilot reported alerting the Chipmunk pilot to their presence on the radio; the Board agreed that the Chipmunk pilot had not assimilated either of these radio messages (**CF4**). Returning to the Chipmunk pilot's non-standard join, the Board noted that the Chipmunk pilot's report stated that their base-leg join had been 'approved' by the Thruxton AGO and wished to emphasise to pilots that only air traffic controllers are able to issue instructions to pilots in the air or approve certain courses of action (there was no suggestion in this case that the AGO had acted outside the bounds of their privileges); in all other cases, actions are at the pilot's discretion. Consequently, the Board considered that the Chipmunk pilot's decision to conduct an orbit at the end of the downwind leg/beginning of base-leg had been contributory to the Airprox (**CF2**) and that a left-hand orbit at an airfield operating on a runway with a published right-hand circuit pattern had not been compliant with (UK) SERA.3225(c) (**CF1**). Furthermore, the Board agreed that the left-hand orbit had, in fact, reduced the time available for the Chipmunk pilot to sight the PA28 through their normal lookout scan (the Chipmunk would have been 'belly-up' to the downwind leg for a large part of the orbit) and that this had contributed to the Chipmunk pilot not sighting the PA28 (**CF5**).

The Board then briefly discussed the actions of the Thruxton Air Ground Operator and quickly agreed that they had passed all the necessary information to the pilots involved and that there was little else that they could have done to prevent the Airprox from occurring.

Finally, the Board considered the risk involved in this event. Members noted that there had not been sufficient recorded radar data to enable a reconstruction of the geometry of the encounter and were grateful to the PA28 pilot for supplying their positional information such that, at least, the PA28's track and altitude were known. Without a recorded CPA, the Board took into account both pilots' reported separation and noted that the Chipmunk pilot had not seen the PA28 until after the Airprox had occurred. However, the Board agreed that the PA28 pilot had sighted the Chipmunk early enough for them to effectively remove any risk of collision, but had been largely forced to react to the situation as it unfolded before them. Therefore, the Board agreed that safety had been reduced but no risk of collision had existed and assigned a Risk Category C to this event.

PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK

Contributory Factors:

	2021189			
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	• Insufficient Decision/Plan	Events involving flight crew not making a sufficiently detailed decision or plan to meet the needs of the situation	Inadequate plan adaption
	• Situational Awareness of the Conflicting Aircraft and Action			
3	Contextual	• Situational Awareness and Sensory Events	Events involving a flight crew's awareness and perception of situations	Pilot had no, late or only generic, Situational Awareness
4	Human Factors	• Understanding/ Comprehension	Events involving flight crew that did not understand or comprehend a situation or instruction	Pilot did not assimilate conflict information
	• See and Avoid			
5	Human Factors	• Monitoring of Other Aircraft	Events involving flight crew not fully monitoring another aircraft	Non-sighting or effectively a non-sighting by one or both pilots
6	Human Factors	• Perception of Visual Information	Events involving flight crew incorrectly perceiving a situation visually and then taking the wrong course of action or path of movement	Pilot was concerned by the proximity of the other aircraft

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:

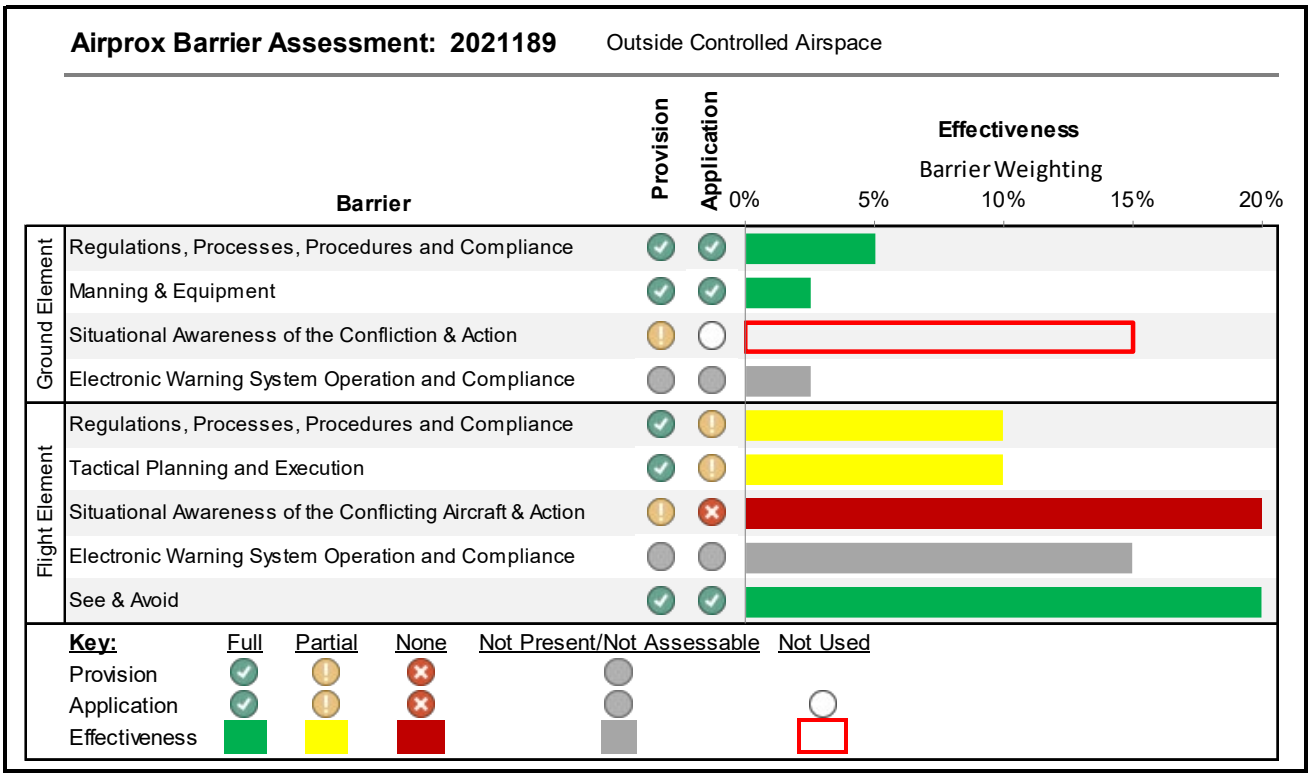
Situational Awareness of the Confliction and Action were assessed as **not used** because the Thruxton Air/Ground Operator was not required to monitor the aircraft.

Flight Elements:

Regulations, Processes, Procedures and Compliance were assessed as **partially effective** because the Chipmunk pilot conducted a left-hand orbit when required by (UK) SERA.3225(c) Operation on and in the Vicinity of an Aerodrome to make all turns within the Thruxton ATZ to the right (in accordance with the active circuit direction).

Tactical Planning and Execution was assessed as **partially effective** because the Chipmunk pilot conducted an orbit in the vicinity of the end of the Thruxton RW25RH downwind leg.

Situational Awareness of the Conflicting Aircraft and Action were assessed as **ineffective** because the Chipmunk pilot had not assimilated the presence of the PA28 in the circuit and had consequently not had any situational awareness regarding the position of the PA28.



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