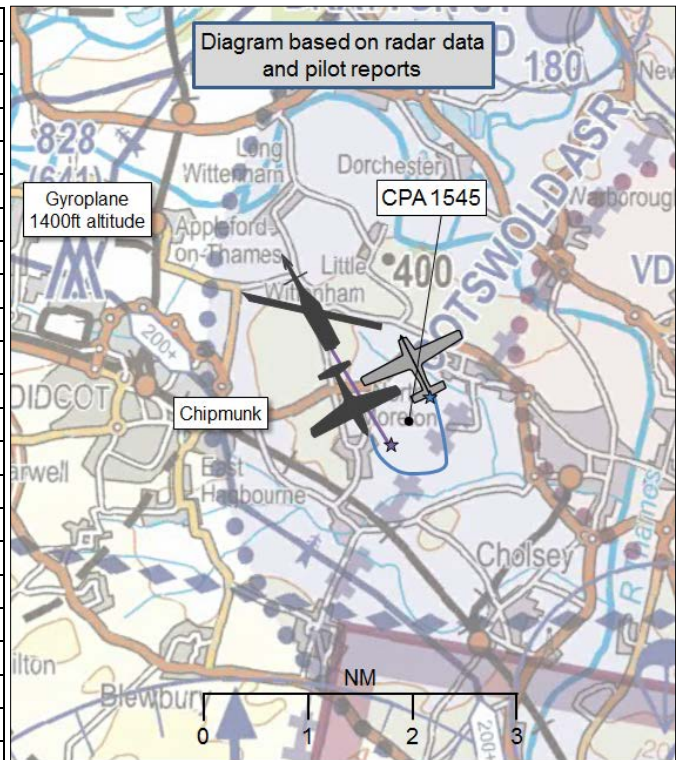


AIRPROX REPORT No 2017089

Date: 10 May 2017 Time: 1545Z Position: 5138N 00112W Location: 4nm W Benson airfield

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	Chipmunk	Gyroplane
Operator	Civ Pte	Civ Pte
Airspace	Benson MATZ	Benson MATZ
Class	G	G
Rules	VFR	VFR
Service	Basic	Basic
Provider	Benson	Benson
Altitude/FL	NK	1400ft
Transponder	On stand-by	A,C
Reported		
Colours	Green	Blue
Lighting	Landing light	
Conditions	VMC	VMC
Visibility	5nm	10km
Altitude/FL	1000ft	1600ft
Altimeter	QFE (999hPa)	QNH (1009hPa)
Heading	360°	160°
Speed	90kt	60kt
ACAS/TAS	Not fitted	Not fitted
Separation		
Reported	0ft V/150m H	0ft V/150m H
Recorded	NK/(100ft V/0.5nm H with lead aircraft in formation)	



THE CHIPMUNK PILOT reports that he was the No2 in a formation. The leader dealt with all radio comms and squawks, whilst he maintained a listening watch on frequency. They approached the Benson MATZ descending to 2800ft on QNH and were cleared to track directly through the MATZ to join the circuit at a private airstrip at North Moreton, 4nm west of Benson. The Gyroplane pilot was heard to be in communication with Benson transiting the MATZ and had confirmed that he had the formation in sight. They joined the North Moreton circuit at 1150ft QNH: half a mile north the pilot reduced speed to gain separation from the lead aircraft and followed the leader as they both flew at circuit height along RW17 in accordance with the standard joining procedure. Beyond the upwind end of RW17 the leader turned left, cross-wind and then downwind and he followed at a distance of 400m behind. The leader turned base-leg and landed, whilst he maintained circuit height and overflew the runway to an extended upwind point before turning cross-wind again to allow the leader time to back-track and clear the runway at the threshold. He turned downwind again and, abeam the mid-point, he was completing landing checks (from memory) when he looked ahead to see the blue gyroplane head-on, on a reciprocal track. The Gyroplane immediately turned to the west, and the Chipmunk pilot turned east, although he opined that it would have been too late to avoid a collision had the Gyroplane pilot not turned as well.

He assessed the risk of collision as 'High'.

THE GYROPLANE PILOT reports that he saw the other aircraft in his 2 o'clock about 1km away. He thought at first that they were on a collision course, but it quickly became evident that it was going to pass in front of him. He elected to bear slightly to the right to widen the gap between them, to further increase the expected minimum distance. The pilot was wearing a 'Go-pro' camera and Figure 1 is taken from the video.

He assessed the risk of collision as 'None'.



Figure 1 showing the Chipmunk from the Gyroplane

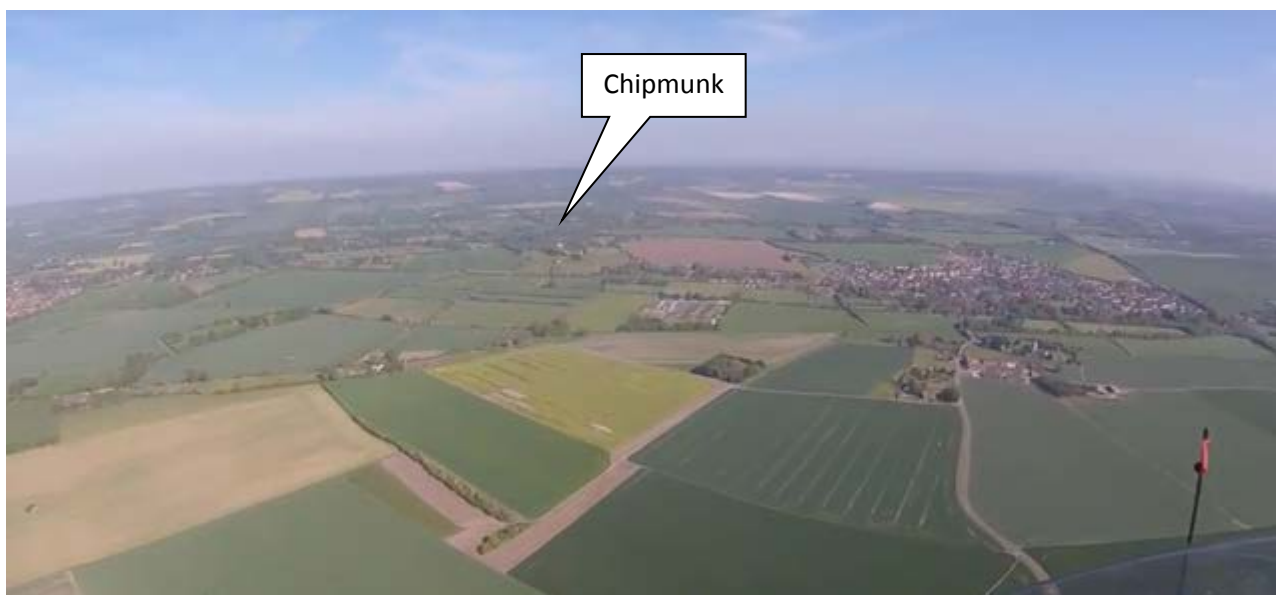


Figure 2 showing the Chipmunk from the Gyroplane

THE BENSON CONTROLLER comments that this report has been written 8 days after the event. He was working two callsigns believed to be involved in an Airprox. A formation including a Chipmunk, and an Autogyro. The formation pilots were inbound to North Moreton and the Autogyro pilot was routeing through the Benson MATZ to the south. The pilots were in receipt of a Basic Service. He called the Autogyro to the formation pilots at a range of approximately 2nm; the formation lead pilot called visual with the Autogyro immediately, followed by the Autogyro pilot calling visual with the two aircraft in formation. Both flights reported changing to their respective airfields and went en route with no mention of an Airprox.

He perceived the severity of the incident as "Negligible".

Factual Background

The weather at Benson was recorded as follows:

METAR EGUB 101650Z 12007KT CAVOK 18/02 Q1003 BLU NOSIG=

Portions of the tape transcripts between the Benson Zone controller and the aircraft are below:

From	To	Speech Transcription	Time	Remarks
Gyroplane	Benson Zone	Benson Zone this is {Gyroplane c/s}	15:37:47	
Benson Zone	Gyroplane	{Gyroplane c/s} Benson Zone good afternoon basic service, Benson QNH one zero zero four request your altitude?	15:37:57	
Gyroplane	Benson Zone	Erhh {Gyroplane c/s} gyrocopter one POB from Enstone to Chiltern Park, current altitude is er One thousand seven hundred feet on QNH one zero zero five {Gyroplane c/s}.	15:38:04	
Benson Zone	Gyroplane	{Gyroplane c/s} the Benson QNH one zero zero four.	15:38:18	
Gyroplane	Benson Zone	QNH One zero zero four {Gyroplane c/s}. Altitude still One thousand seven hundred feet	15:38:23	
Benson Zone	Gyroplane	{Gyroplane c/s} your MATZ penetration is approved routing inbound to Chiltern Air Park.	15:38:31	
Gyroplane	Benson Zone	MATZ penetration approved will report visual with Chiltern Park {Gyroplane c/s}.	15:38:36	
Benson Zone	Gyroplane	{Gyroplane c/s} are you routing direct to Chiltern Park oooor via Benson or via Didcot?	15:38:43	
Gyroplane	Benson Zone	Umm I'm directing direct umm will be heading directly to Chiltern Park {Gyroplane c/s}	15:38:47	
Benson Zone	Gyroplane	{Gyroplane c/s} roger.	15:38:53	
Chipmunk Formation	Benson Zone	Benson ER Chipmunk Formation inbound to North Moreton request err Benson transit in to err North Moreton.	15:40:05	
Benson Zone	Chipmunk Formation	Chipmunk Formation Benson Zone good afternoon pass your message.	15:40:14	
Chipmunk Formation	Benson Zone	Chipmunk Formation is one Chipmunk and one Bulldog out of {departure airfield} stationed at {airfield}, currently just south of Oxford about err 6 miles to run to north Moreton err with two thousand three hundred feet one zero zero four would like a basic service inbound to North Moreton please.	15:40:18	
Benson Zone	Chipmunk Formation	Chipmunk Formation roger the squawk three six zero one basic service your MATZ penetration is approved routing inbound to North Moreton.	15:40:39	
Chipmunk Formation	Benson Zone	3601 for Basic service and err MATZ penetration approved inbound to North Moreton request wind check as well please.	15:40:47	
Benson Zone	Chipmunk Formation	Chipmunk formation surface wind at Benson one two zero five knots	15:40:57	
Chipmunk Formation	Benson Zone	Chipmunk Formation thanks we'll land to the south, we'll err pass over the airfield and then join the circuit	15:41:02	
Benson Zone	Chipmunk Formation	Chipmunk Formation roger	15:41:10	
Benson Zone	Chipmunk Formation	Chipmunk Formation traffic West one mile tracking South a few hundred feet below ... helicopter inbound to Chiltern Air Park	15:42:14	Stepped off and back on frequency

From	To	Speech Transcription	Time	Remarks
Chipmunk Formation	Benson Zone	Visual with Gyrocopter.	15:42:23	
Gyroplane	Benson Zone	Report visual also aircraft in formation {Gyroplane c/s}.	15:42:25	
Benson Zone	Gyroplane	{Gyroplane c/s} roger thanks.	15:42:28	

Analysis and Investigation

Military ATM

Figures 3-7 show the positions of the Chipmunk formation and Gyrocopter at relevant times in the lead-up to and during the Airprox. The screen shots are taken from a replay using the All Swanwick radar, which is not used by Benson ATC; therefore, is not necessarily representative of the picture available to the controller. The radar screen shots show the lead aircraft in the formation (a Bulldog) not the proximity between the Chipmunk and the Gyroplane.

At 15:37:47, the Gyrocopter pilot free-called Benson Zone and was give Basic Service for routing into Chiltern Park Aerodrome. At 15:40:18 (Figure 3), the Chipmunk formation free-called Benson Zone requesting Basic Service inbound to North Moreton.

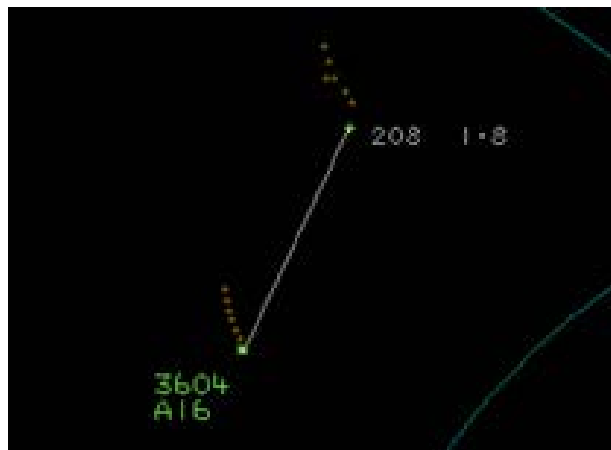


Figure 3: Geometry at 15:40:18 (Chipmunk no SSR observed; Gyrocopter 3604)

At 15:42:14 (Figure 4), the Benson Zone controller passed TI to the Chipmunk formation as west, 1nm, tracking south, a few hundred feet below, helicopter inbound to Chiltern Air Park. The Chipmunk pilot reported visual with the Gyrocopter.



Figure 4: Geometry at 15:42:14

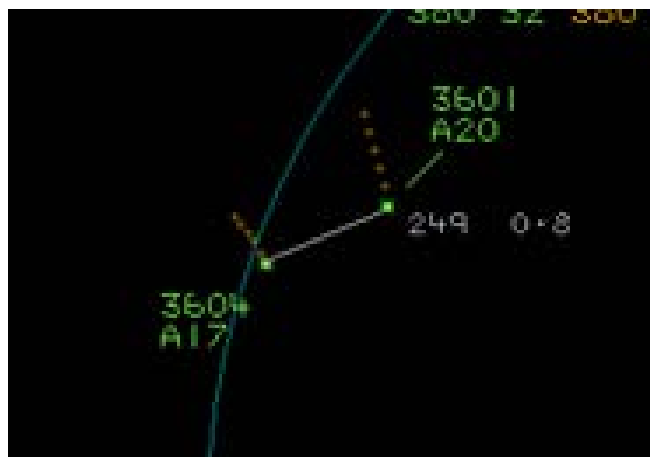


Figure 5: Geometry at 15:42:25

At 15:42:25 (Figure 5), the Gyrocopter pilot stated, “report visual also aircraft in formation...” It is not certain whether this statement meant that he was visual or would report visual with the formation.

At 15:42:55 (Figure 6), the Chipmunk formation and Gyrocopter passed at CPA of 0.5nm and approx 100ft separation, with the formation then completing an anti-clockwise orbit over the next 2 minutes (Figure 7).



Figure 6: Geometry at 15:42:55

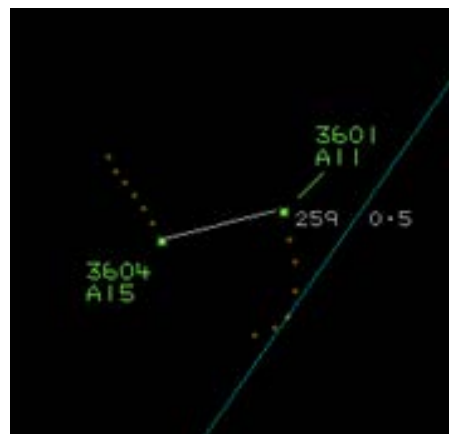


Figure 7: Geometry at 15:44:54

The Benson Zone controller passed TI to the Chipmunk formation on the Gyrocopter as the two tracks continued to converge, with approximately 1nm separation and the faster formation overtaking the Gyrocopter. The formation stated that they were visual with the Gyrocopter and the Gyrocopter pilot immediately responded with the words, “report visual also aircraft in formation...” which the Benson Zone controller acknowledged and interpreted to mean that the pilot was visual with the Chipmunk formation. With all aircraft under Basic Service, the controller discharged their duty iaw CAP 774.

The Airprox was not reported on frequency and the controller was not able to complete their report until 8 days after the incident, which may have diminished their recollection of events.

UKAB Secretariat

The Chipmunk and Gyroplane 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 head-on or nearly so then both pilots were required to turn to the right². 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 operation³.

The lead aircraft in the Chipmunk formation was the squawking aircraft, the Airprox Chipmunk had his transponder set to standby. Therefore the radar data on the NATS radar does not show the Airprox: the radar pictures shown, and CPA quoted, is from the lead aircraft which had landed by the time that the Gyroplane and Chipmunk came into proximity. For this reason the exact separation between these 2 aircraft is not known.

Summary

An Airprox was reported when a Chipmunk and a Gyroplane flew into proximity at 1545 on Wednesday 10th May 2017. Both pilots were operating under VFR in VMC, and both were receiving a Basic Service from Benson Zone and had received Traffic information.

¹ SERA.3205 Proximity.

² SERA.3210 Right-of-way (c)(1) Approaching head-on.

³ SERA.3225 Operation on and in the Vicinity of an Aerodrome.

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, reports from the air traffic controllers involved and reports from the appropriate ATC and operating authorities.

The Board first looked at the actions of the Chipmunk pilot. Although only on a Basic Service, the formation was given Traffic Information by Benson Zone on the Gyroplane, and the lead pilot in the formation had called visual. Members noted that they were on frequency when the Gyroplane pilot gave his destination, which was only a few miles away from their own airstrip. Given that all aircraft were approaching from the northwest, and that he had heard the other pilot on frequency, some members commented that he shouldn't have been surprised to see the Gyroplane in his vicinity as he approached the airstrip. Noting that the Gyroplane's video of the encounter showed that the two aircraft do not look in imminent risk of colliding, the Board wondered whether he was task-focused on flying his circuit and waiting for his formation leader to land, and had not assimilated that another aircraft would be in the vicinity. They opined that he may have been startled by its appearance, causing him to assess the incident as riskier than it actually was.

The Board then had a long discussion about whether the Gyroplane pilot had been given Traffic Information by the Benson controller or not. Noting that the controller gave Traffic Information to the Chipmunk formation, and the Gyroplane pilot's responded with 'report visual also aircraft in formation', this was interpreted by some members to mean that he was visual (which is how the Benson Controller perceived it) and by others to mean that he would report when he was visual. Notwithstanding, it was agreed that he obviously knew that the Chipmunk formation was in the vicinity, and could hear from their RT to the controller that they were inbound to North Moreton. [UKAB NOTE: the Gyrocopter pilot has since confirmed that he was visual with the formation, and had intended that his statement over the RT to communicate that]. Some members wondered if he would have known where North Moreton was; if he did then he should have kept clear of the pattern of traffic formed by the Chipmunk formation. Others members thought this was unreasonable given that North Moreton was no more than a private strip, not marked on the chart and that he would not necessarily have known that the Chipmunk formation were literally joining the circuit right in front of him. Nevertheless, it was agreed that, ideally, the Gyroplane pilot should have given North Moreton a wider berth had he known it was there. Notwithstanding, the Gyroplane pilot saw the Chipmunk with enough time to assess that there was not a risk of collision and therefore didn't need to take avoiding action other than to 'bear right'.

The Board briefly discussed the actions of the Benson Controller. Although some members opined that he could usefully have explained in more detail to the Gyroplane pilot that the Chipmunk formation was joining the North Moreton circuit directly in front of him, others thought this was over and above what should be expected of a Basic Service. In the end it was agreed that he had discharged his duty by giving Traffic Information, and if either pilot required more information they could have asked.

Finally, the Board discussed the cause and risk of the Airprox. On the assumption that the Gyroplane pilot would not necessarily have known where North Morton was, the Board agreed that he could not have been expected to 'confirm with, or avoid the pattern of traffic being formed' and so the need simply to avoid each other was the overriding requirement. Looking also at the video still of the CPA, the Board came to the conclusion that the incident was best described as the Chipmunk pilot being concerned by the proximity of the Gyroplane. Noting also that the Gyroplane pilot was visual with the Chipmunk and had not needed to take avoiding action other than a timely turn away, they quickly agreed that the risk was Category C, safety had been degraded, but there had been no risk of collision.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: The Chipmunk pilot was concerned by the proximity of the Gyroplane.

Degree of Risk: C.

Safety Barrier Assessment⁴

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

ANSP

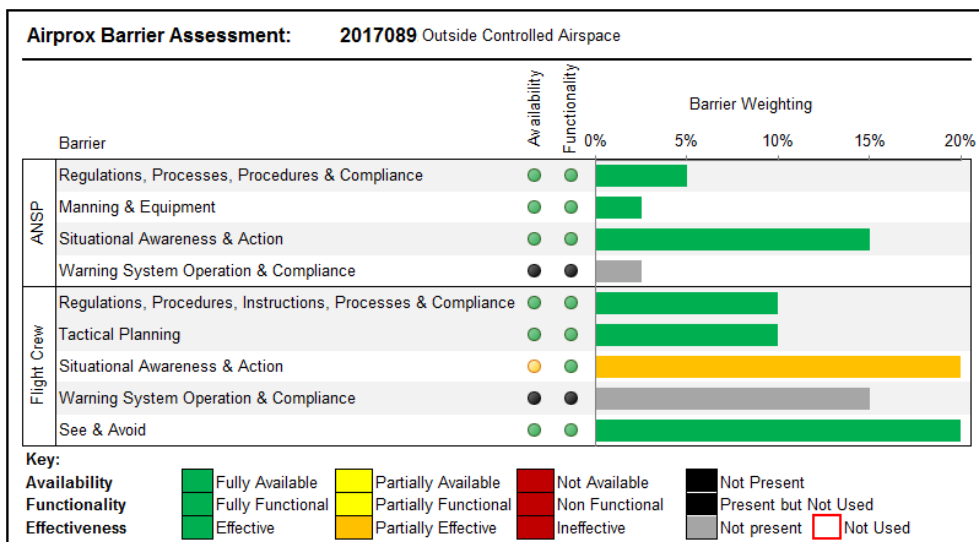
Situational Awareness & Action was assessed as **effective** because the Benson controller gave Traffic Information to both pilots.

Flight Crew

Situational Awareness & Action was assessed as **partially effective** because it was thought that if the Gyroplane pilot had known where North Morton was he should have given it a wider berth; if he did not know where it was, he could have asked the controller.

Warning System Operation and Compliance was assessed as **not present** because neither aircraft had a CWS.

See and Avoid was assessed as **effective** because the Gyrocopter pilot saw the Chipmunk in enough time to take timely and effective 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](#).