

**AIRPROX REPORT No 2016017**

Date: 16 Feb 2016 Time: 1435Z Position: 5247N 00248W Location: Shawbury

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

Recorded	Aircraft 1	Aircraft 2
Aircraft	Squirrel	CAP10
Operator	HQ Air (Trg)	Civ Pte
Airspace		
Class	G	G
Rules	VFR	VFR
Service	Aerodrome	Basic
Provider	Shawbury ADC	Shawbury
Altitude/FL		
Transponder	A,C	A,C
<b>Reported</b>		
Colours	Black, Yellow	Red, White, Blue
Lighting		Anti-colls, Landing
Conditions	VMC	VMC
Visibility	>10km	>10km
Altitude/FL	1000ft	1000-4000ft
Altimeter	QFE (1018hPa)	QFE (1017hPa)
Heading	090°	variable
Speed	90kt	50-140kt
ACAS/TAS	TAS	Not fitted
Alert	None	N/A
<b>Separation</b>		
Reported	500ft V	Not seen
Recorded	900ft V/<0.1nm H	

**THE SQUIRREL PILOT** reports that, on returning to Shawbury, he saw a fixed-wing aircraft conducting aerobatics just south of the ‘western gates’ [UKAB Note: these are standard MATZ entry points for helicopters recovering to Shawbury]. As they approached the gates, he appeared to complete his exercises and transit north, across the approximate area of the gates towards Sleaf airfield. The handling student pilot, descended to 600ft to ensure safe separation was maintained. However, once north of the gates, the other aircraft carried out a high-energy turn, possibly a wing-over, which changed its heading to converge with the Squirrel. On rolling level, he then executed a barrel roll in front and slightly above the Squirrel, so the Squirrel pilot descended rapidly to avoid.

He assessed the risk of collision as ‘Low’.

**THE CAP10 PILOT** reports he was squawking and receiving a Basic Service from Shawbury ATC. He requested a block 1000-4000ft to conduct aerobatics. Traffic Information was given throughout the sortie, and each time it was acknowledged and the aerobatics were stopped to orientate and look-out. At one point during the sortie he was asked whether he was still general handling and he reminded the controller that he was carrying out aerobatics. On completion of the sortie he transferred to the Sleaf frequency for a visual re-join. After landing he was asked to call Shawbury ATC; when he did so he was informed about the Airprox. He did not see the Squirrel.

**THE SHAWBURY ADC** reports being under examination from a Local Examining Officer when the Squirrel pilot called for join from ‘Western’ and was given joining instructions. As he approached Harmer Hill, the pilot reported visual with an aircraft at approx. 1000ft conducting aerobatics. There was a pause, and the pilot reported that the traffic had just conducted a barrel roll towards him with an estimated separation of 300ft. The ATC Supervisor was in the VCR and began reporting action.

He perceived the severity of the incident as ‘Medium’.

**THE SHAWBURY ZONE CONTROLLER** reports that he was the Zone controller and was unaware of the Airprox until the ATC Supervisor called asking for details on the CAP10. The CAP10 had called asking for a Basic Service to conduct aerobatics between 1000 and 4000ft on the QNH. After a short time, the controller noticed that he was operating on the edge of the MATZ west of the VFR gates and he gave Traffic Information on an aircraft 1nm away manoeuvring. Once the Airprox had been reported it became clear that this was the aircraft that had been called to the CAP10. Traffic Information had not been passed to the LFA9 controller as it was felt that it didn't meet the requirements and wasn't pertinent at the time.

He perceived the severity of the incident as 'None'.

**THE SHAWBURY LFA 9 CONTROLLER** reports that he took over the controlling position shortly before the time of the incident and his first transmission to the Squirrel pilot was to acknowledge that he was changing to the ADC frequency. He was not aware of any conflict when he did so.

**THE SHAWBURY SUPERVISOR** reports that he was in the VCR at the time that the Squirrel pilot declared his intention to report an Airprox. He heard the pilot request information on a fixed-wing aircraft which was conducting aerobatics in the vicinity of his recovery via Harmer Hill. The Supervisor was able to look at the Air Traffic Monitor in the VCR and observed an aircraft wearing a Basic Service Squawk in the vicinity of the western recovery for RW18, but laterally outside the MATZ.

### Factual Background

The weather at Shawbury was recorded as follows:

METAR EGOS 161350Z 18018KT 9999 FEW030 BKN250 06/M01 Q1028 BLU NOSIG=

A portion of the tape transcript between Shawbury Zone, Aerodrome Controllers and the Airprox aircraft is below:

From	To	Speech Transcription	Time
CAP10	Zone	{CAP10 c/s}, Cap ten out of Sleep, currently passing through one thousand two hundred feet height, overhead Sleep (pause) requesting a Basic Service and I'd like to operate aerobatics to the South West in the block one thousand to four thousand feet {CAP 10 c/s}	14:28:15
Zone	CAP 10	{CAP10 c/s}Basic Service squawk seven four two six, Shawbury Q N H one zero two eight	14:28:31
Squirrel	Tower	Shawbury Tower, {Squirrel c/s} for join from Harmer Hill with Echo	14:34:33
Tower	Squirrel	{Squirrel c/s} Shawbury Tower join, surface wind one eight zero one six gusting two one knots confirm Hotel copied?	14:34:37
Squirrel	Tower	Apologies Hotel copied and for your information there is a fixed wing doing aeros approximately a thousand feet at the gate this time.	14:34:46
Tower	Squirrel	{Squirrel c/s} ... copied, area right clear with one joining from the East, strip Alpha	14:34:52
Tower	Broadcast	Squirrel, Harmer Hill, area right	14:35:02
Tower	Ground	That Basic Service one with umm... has he got it back into Tern Hill? Yeah, just, well I don't know...it's just no, it's just the fact that he's doing aeros... no, ok	14:35:10
Zone	CAP10	{CAP10 c/s}, traffic believed to be you has traffic South West one mile, manoeuvring, rotary indicating five hundred feet below	14:35:18
CAP 10	Zone	{CAP10 c/s}	14:35:25

## Analysis and Investigation

### Military ATM

At 1434:33 (Figure 1), the Squirrel called Shawbury Tower for a visual join (Squirrel squawking 7421; Cap 10 squawking 7426).

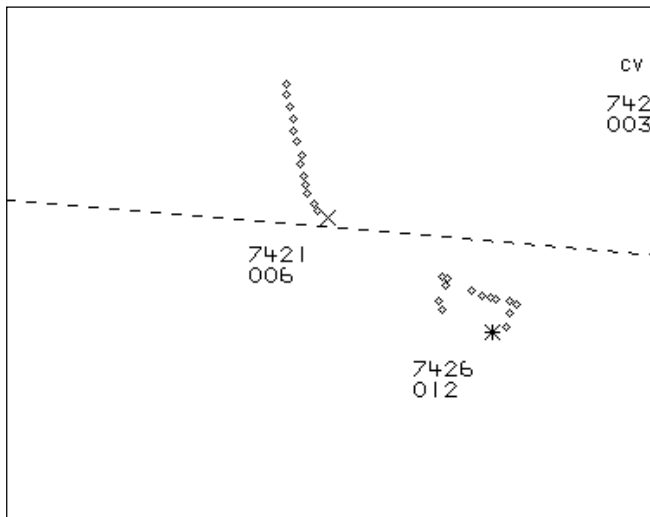


Figure 1: Squirrel called for visual join at 1434:33.

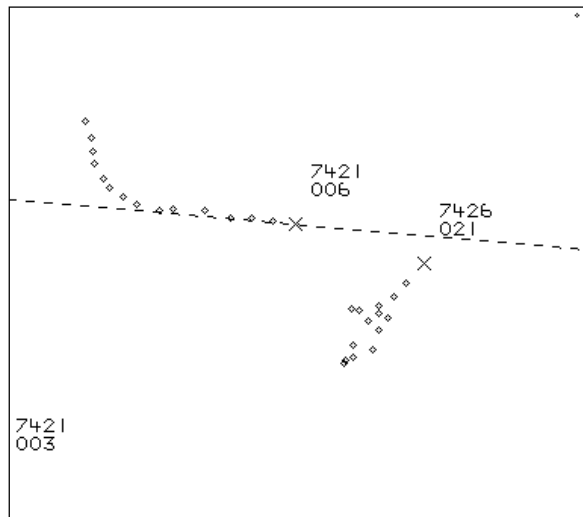


Figure 2: Geometry at 1435:02.

At 1435:18 (Figure 3), Traffic Information was called to the CAP 10. The Squirrel pilot declared an Airprox at 1435:28 (Figure 4).

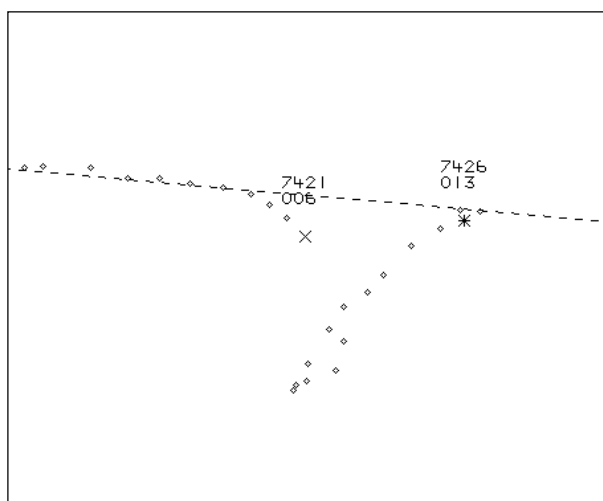


Figure 3: Traffic Information at 1435:18.

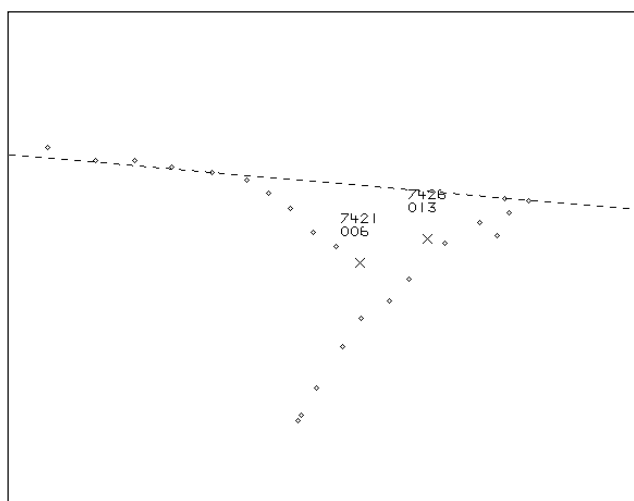


Figure 4: Airprox declared at 1435:28.

CPA was estimated at 1435:32 (Figure 5) with 0.1nm horizontal separation and 900ft height separation.

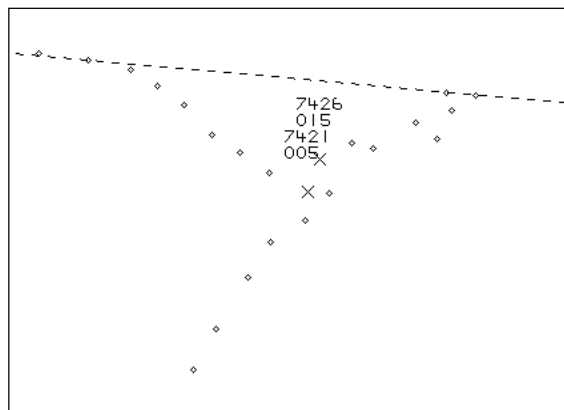


Figure 5: CPA estimated at 1435:32.

The Squirrel pilot was flying a VFR recovery with Shawbury Tower under an Aerodrome Service. The Tower Controller had broadcast the Squirrel recovery to all stations. The CAP10 was under a Basic Service with Shawbury Zone conducting aerobatics. Both crews were responsible for their own collision avoidance, in accordance with UK FIS. The CAP10 pilot did receive Traffic Information on the Squirrel, despite being under a Basic Service, 14 seconds prior to CPA. The Zone controller recalled that the CAP10 aircraft was operating on the edge of the MATZ to the west of the VFR gates.

The Squirrel crew had been visual with the CAP10 from around 5km and had descended to 600ft to provide vertical separation. A high-energy turn by the CAP10 had placed the aircraft on a converging course with the Squirrel and the crew took an avoiding action descent.

### **UKAB Secretariat**

The Squirrel and CAP 10 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>. If the incident geometry is considered as converging then the CAP 10 pilot was required to give way to the Squirrel<sup>3</sup>.

## **Comments**

### **HQ Air Command**

This incident occurred in the area of intense aerial activity that surrounds RAF Shawbury and will be used as a case study at the next Wales and West Midlands Regional Airspace User Working Group. The Squirrel pilot was recovering to Shawbury via the western visual arrival gate for Rwy 18; a procedure that requires aircraft to fly at 1000ft QFE. It is unclear from the evidence provided what air traffic service the Squirrel pilot was operating under during his recovery and whether he had been provided TI on the CAP10 as he approached the gate. Had he been provided with these details, there may have been an opportunity for the pilot to select an alternative recovery procedure to avoid conflict. Notwithstanding, the Squirrel pilot reports becoming visual with the conflicting traffic at 5km and was able to maintain separation as the CAP10 conducted aerobatic manoeuvres towards his aircraft.

With regards to the actions of the CAP10 pilot, it is admirable that the pilot contacted the Shawbury Zone controller to provide details of his intentions. However, the choice of an alternative air traffic service and a higher base altitude may have provided a greater degree of TI and separation on aircraft arriving and departing from Shawbury. Under a Basic Service, there was no requirement for the CAP10 pilot to follow the instructions of ATC whilst operating in Class G airspace. Nonetheless, there may have been an opportunity for the Zone controller to suggest an alternative base height given the proximity to the Shawbury MATZ and associated departure/recovery gates. The Zone controller should be commended that he provided TI on the approaching Squirrel, as this is not mandated under a Basic Service.

## **Summary**

An Airprox was reported when a Squirrel and a CAP10 flew into proximity at 1435 on Tuesday 16<sup>th</sup> February 2016. Both pilots were operating under VFR in VMC, the Squirrel pilot in receipt of an Aerodrome Service from Shawbury ADC and the CAP10 pilot in receipt of a Basic Service from Shawbury Zone.

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

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

<sup>3</sup> SERA.3210 Right-of-way (c)(2) Converging.

## **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 Squirrel pilot. They were told that this was an instructional sortie with a low-hours student and, as such, the instructor wanted to re-join at Shawbury in the standard way via the Western gate. Nevertheless, some members wondered whether, having seen the CAP10 early on, he was wise to continue towards it. Other members thought that because he had seen the CAP10 manoeuvre to the north-west, it was understandable that he had assumed it was returning to Sleaford airfield, just to the north-west of its position. The Board wondered whether he had expected the area approaching the gates to be sterile and whether he believed that the CAP10 pilot would know more about the Shawbury operating procedures than he actually did. The reality was that the CAP10 was operating outside the MATZ and was entitled to operate there. Ultimately, having realised that the other aircraft was turning back towards him, the Board noted that the Squirrel pilot had been able to take timely avoiding action to achieve a separation of 900ft.

Turning to the CAP10 pilot, the Board thought that he had essentially done all that he needed to do in the circumstances. He had remained outside the MATZ, had taken a Basic Service with Shawbury Zone (which ensured that they knew he was operating there), and was squawking appropriately. The Board wondered whether he knew about the Shawbury gates system and, if he did, whether a base height of 1000ft for his aeros was a good idea. However, in mitigation, the Board noted that the gates themselves were situated approximately 3.5nm west of Shawbury, within the Shawbury MATZ, so he wasn't actually operating directly over the gates, just at a point at which the Shawbury pilots position themselves to enter the gates. Operating as he was in Class G airspace, the CAP10 pilot was perfectly entitled to be there and the Board opined that, had ATC thought his positioning was a problem, they could have asked him to increase his height, or move to clearer airspace. The Board wondered why the CAP10 pilot hadn't seen the Squirrel at all, and whether he had sufficiently cleared his flight path prior to manoeuvring; in particular, having received Traffic Information on the Squirrel, some members thought he should have made sure he was visual with the helicopter before commencing his next manoeuvre.

The Board then looked at the role of ATC in the Airprox. They noted that the Zone Controller knew all about the CAP10 and had given its pilot Traffic Information on the Squirrel despite being asked to provide just a Basic Service (within which he wasn't required to pass Traffic Information unless he thought the traffic constituted a definite hazard). Whether the Zone Controller had passed Traffic Information to other members of the controlling team wasn't known; however, the CAP10 was wearing a Shawbury Zone Squawk which should have alerted other controllers to the fact that Zone was providing it with a service and that they could have called for co-ordination if they had required it. As for the LFA9 controller, it was obvious that he had only just taken over the position and it was not known whether the previous controller had been aware of the CAP10: the Board commented that it was a shame that the previous LFA9 Controller had not also submitted a report to clarify this and whether he could have provided Traffic Information to the Squirrel pilot. As the final link in the ATC team, although the ADC was the controller to whom the Squirrel pilot had reported the Airprox, in fact he would have been unlikely to have known about the CAP10 because it was operating outside the MATZ and therefore Traffic Information would not have been passed to him.

The Board then discussed how much knowledge local users of the airspace were expected to have; were the position of the gates and their relevance to aircraft recovering to Shawbury available for local users to look up? They were advised that Shawbury intended to put this issue onto the Agenda for the next Regional Users Airspace Working Group in order to publicise it to local users. But Military members were also keen to point out that the MAA had recently mandated that all military airfields should publish such information in their Defence Aerodrome Manuals (DAM) which were readily available on the internet. Although it was not expected that GA pilots would routinely look up such information generally, it was hoped that those operating close to a particular airfield would take the time to look for such things as standard patterns and SIDs that might affect them.

Finally, in determining the cause, the Board debated a number of possible reasons that this incident had occurred. Notwithstanding the fact that the CAP10 pilot had not seen the Squirrel and had been technically required to give way to it, in the end the Board recognised that all participants had operated to their best efforts in accordance with extant procedures and so they decided that the incident was best described as a conflict in Class G airspace, resolved by the Squirrel pilot. Turning to the risk, it was quickly agreed that there had been no risk of collision because the Squirrel pilot had been visual with the CAP10 at all times and had been able to take timely and effective avoiding action to ensure adequate separation, making this a Category C risk.

### **PART C: ASSESSMENT OF CAUSE AND RISK**

Cause: A conflict in Class G resolved by the Squirrel pilot.

Degree of Risk: C.