

## **AIRPROX REPORT No 2014066**

Date/Time: 21 May 2014 1529Z

Position: 5246N 00304W  
(14nm W Shawbury)

Airspace: Shawbury AIAA (Class: G)

Aircraft 1                      Aircraft 2

Type: Squirrel HT1              C152

Operator: HQ Air (Trg)        Civ Club

Alt/FL: 2400ft                      NK  
            QNH (1008hPa)

Conditions: VMC                      VMC

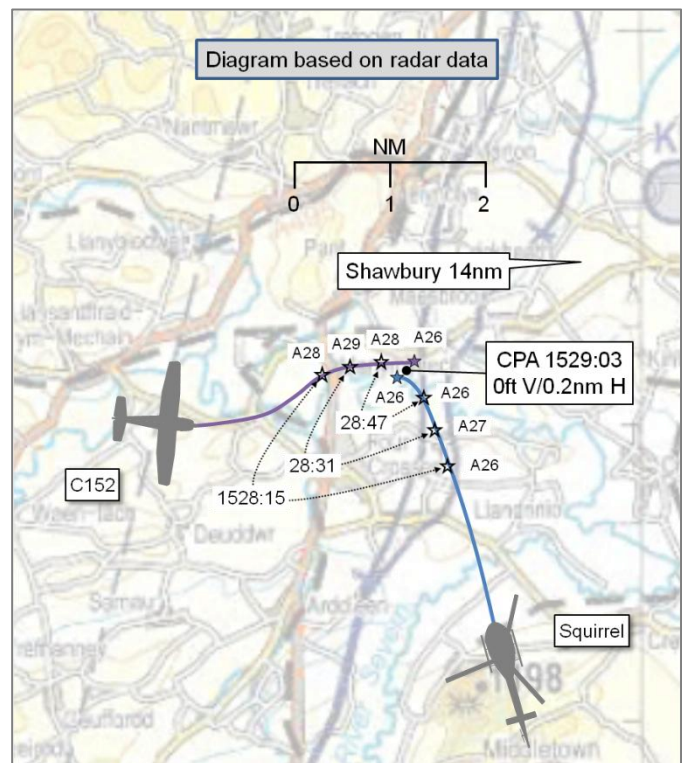
Visibility: 45km                      NK

Reported Separation:

                    '100ft'                      200ft V/0.25nm H

Recorded Separation:

                    0ft V/0.2nm H



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

**THE SQUIRREL PILOT** reports conducting a low-level navigation sortie. The black and yellow helicopter had upper and lower strobes, landing light and position lights on, as was the SSR transponder with Modes A and C. The aircraft was fitted with a TAS. The pilot was operating under VFR in VMC, in receipt of a Basic Service from Shawbury Low Level<sup>1</sup>. Flying at 90kt, at 2400ft QNH, and on a track of 347°, the NHP (non-handling pilot) alerted the HP (handling pilot) to a TAS contact at 2.5nm. The HP noted that there was a white solid diamond with +02 on the screen<sup>2</sup>. Both HP and NHP were looking in the indicated general direction of the traffic when the TAS audio sounded, alerting the crew to an increasing threat of collision. The other aircraft, a high-wing single-engine light-aircraft, was seen by both HP and NHP in the left 11 o'clock, crossing from left to right at a range of 300m, slightly above on a converging course. The HP turned the Squirrel to the left, behind the other aircraft, thus avoiding collision. The Airprox was then reported to Shawbury ATC.

He assessed the risk of collision as 'Medium'.

**THE C152 PILOT** reports conducting an instructional sortie. The blue and white aircraft had strobes and beacon selected on, as was the SSR transponder with Modes A, C and S. The aircraft was not fitted with a TAS. The pilot was operating under VFR in VMC, in receipt of a Basic Service from 'Shawbury'. He was contacted by the Shawbury controller to ask if he had seen another aircraft close-by a few minutes earlier. The only aircraft seen close-by in the previous 20min was a military helicopter, crossing left to right, he reported, about ¼ mile away with about 200ft difference in height. He had treated it as a normal sighting and kept it under observation. The student was practising basic instrument flying 'under the hood' so was unable to look out. The pilot stated that if this helicopter was the aircraft involved in the Airprox report then, at the time of sighting, he did not consider it a threat.

He assessed the risk of collision as 'None'.

**THE SHAWBURY ZONE** reports that a Squirrel helicopter pilot from RAF Shawbury, called an Airprox with a C152 at about 1521. The Squirrel pilot was on the Shawbury Low-Level frequency. The C152 pilot was general handling between 2000ft and 5000ft to the west of Sleaf on the Barnsley

<sup>1</sup> A listening out frequency designed to facilitate communication with aircraft operating at low-level in the vicinity.

<sup>2</sup> Indicating that the other traffic was transponding and was indicating 200ft above the Squirrel from the Mode C/S return.

QNH 1007hPa under a Basic Service. During this time, ZONE workload was high, dealing with pilots free-calling Shawbury Zone. At about 1540, the controller asked the C152 pilot if he had come close to a Squirrel. He believed he stated "in my sight left to right half a mile". ZONE stated that the C152 pilot sounded calm and that it did not seem like he thought it had been a near miss.

**THE SHAWBURY LOW-LEVEL CONTROLLER** reports the Squirrel pilot declared an Airprox at approximately 1531 on the Low-Level quiet frequency. The pilot passed the following details of the incident; 'Approximately 5 miles South of Oswestry whilst tracking North, a civil aircraft (type unknown at the time) came within ½ mile and 100ft. Avoiding action was taken left to right.' No further information was given. The controller noticed an aircraft working in the vicinity of the reported Airprox wearing a Shawbury ZONE squawk. When the ZONE asked that pilot his recollection of events, he said "he had the Squirrel in sight about ½ mile away and turned left/right to avoid".

**THE SHAWBURY SUPERVISOR** reports being out of the ACR at the time dealing with a different incident. When he returned to the ACR, the Low-Level controller informed him that one of his pilots had declared an Airprox on the Shawbury 'quiet frequency'. The Low-Level controller's workload was low at the time, with only one other aircraft making a request on another RTF. The SUP selected the frequency in time to hear the helicopter pilot pass his initial report. The pilot stated that he was approximately 5nm south of Oswestry, heading 345°, and that he had seen a civilian light-aircraft crossing left to right and that he took avoiding action to the left to avoid the aircraft. A C152 was receiving a Basic Service from Shawbury ZONE in the vicinity of the reported incident. The LARS controllers workload was medium-to-high and he eventually asked the C152 pilot if he had seen the helicopter. The pilot stated that he was in sight of the helicopter within about ½ a mile.

## Factual Background

The weather at RAF Shawbury was recorded as follows:

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METAR EGOS 211450Z 01005KT CAVOK 18/07 Q1007 BLU NOSIG
METAR EGOS 211550Z 36002KT 9999 FEW045 SCT220 18/06 Q1007 BLU NOSIG
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## Analysis and Investigation

### Military ATM

The Squirrel pilot was on the Shawbury Low Level frequency, under a Basic Service, and the C152 pilot was under a Basic Service with Shawbury ZONE. A Basic Service was applied to the Squirrel pilot at 1453:30 and to the C152 pilot at 1506:42. At 1528:03, the aircraft were on converging headings, see Figure 1 below noting that the radar replay pictures shown are taken from NATS Ltd area radar, not the Shawbury radar display.

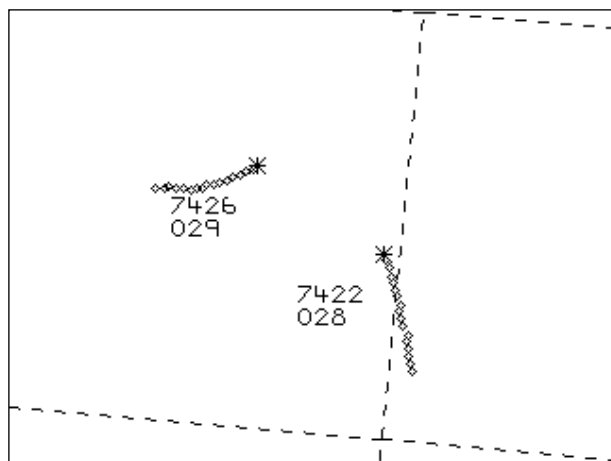


Figure 1: Aircraft geometry at 1528:03 (Squirrel 7422; C152 7426)

The Aircraft continued on a converging course, Figure 2 shows 1nm separation.

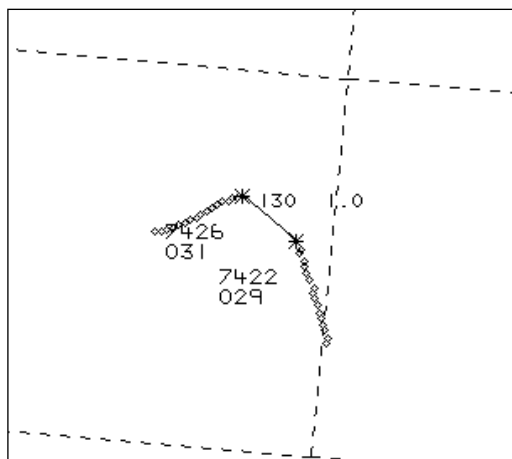


Figure 2: Aircraft geometry at 1528:35

At 1528:55, Shawbury Low-Level asked the Squirrel pilot if he required use of Chetwynd or Tern Hill aerodromes, see Figure 3.

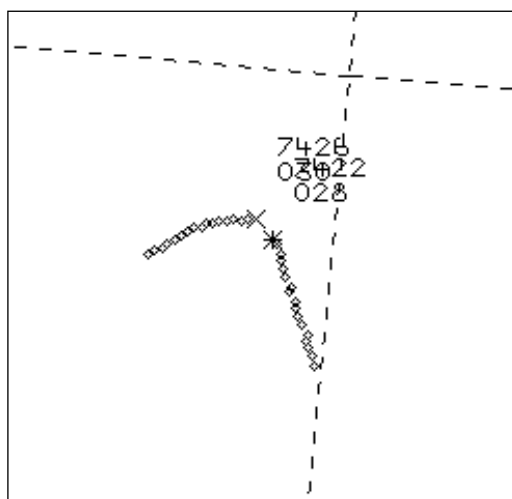


Figure 3: At 1528:55

The CPA occurred at 1529:03 with the 2 aircraft co-altitude at 0.2nm separation. Figure 4, taken at 1529:09, shows the left-hand avoiding action taken by the Squirrel pilot.

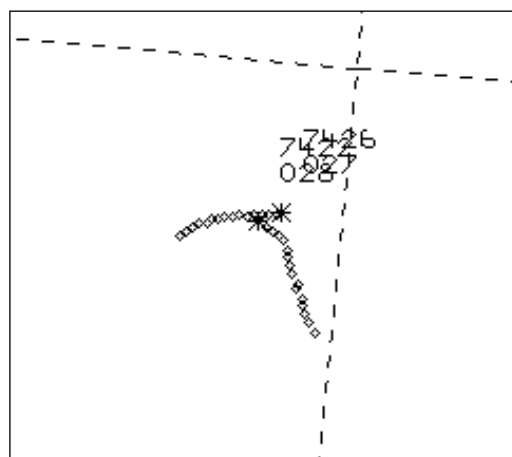


Figure 4: Aircraft geometry at 1529:09

At 15:29:15, the Squirrel pilot reported an Airprox and the details were passed as, “[Squirrel C/S] currently five miles south of Oswestry er no immediate danger it was a civilian aircraft er passing left right approximately one hundred feet above erm spotted it about half a mile took avoiding action to the left.” The ZONE took action to trace the other aircraft involved and at 1537:27, the C152 was requested if they had flown close to a Squirrel; the C152 pilot replied with, “Er we had him insight he went er left to right er in about half a mile.” The Squirrel did not pass left-to-right from the C152 perspective but the replay does correspond with the Squirrel pilot’s account.

Shawbury ATM had been busy, particularly in ZONE, because of the good weather. The Squirrel was on a 7422 squawk which is a generic code for station-based aircraft operating not above 3000ft. Shawbury does not have Mode S and cannot distinguish between individual aircraft with the same squawk. Neither controller reported seeing squawks in close proximity and the aircraft were near an area of known poor radar coverage. The ZONE had several aircraft on frequency, including two aircraft under a Traffic Service, receiving Traffic Information.

Shawbury reviewed the guidance provided to aircrew for the use of TAS, given the known inaccuracies in information. On this occasion, TAS did alert the crew and it heightened the lookout for both pilots. TAS did work as a barrier and was supplemented with lookout and an avoiding turn by the Squirrel pilot. The C152 was not fitted with TAS/TCAS and it is not certain if the pilot had been visual with the Squirrel because he described an aircraft passing left to right. Both aircraft were under a Basic Service and were responsible for their own collision avoidance.

### **UKAB Secretariat**

Both pilots shared an equal responsibility to avoid collision and not to fly into such proximity as to create a danger of collision<sup>3</sup>. The C152 pilot was required to give way to the Squirrel helicopter, on his right<sup>4</sup>.

### **Comments**

#### **HQ Air Command**

It is noted that the crew did not report how the TAS depicted the relative position of the conflicting traffic, only its range. With the known issues surrounding the poor accuracy in azimuth of the Squirrel’s TAS, it is possible that both crew-members were concentrating their lookout into one area whilst the traffic continued to approach from a slightly different aspect. The investigation at RAF Shawbury confirmed that the extant guidance pertaining to the use of the Squirrel TAS remains fit for purpose ie. that it alerts the crew to another aircraft but that its position must be identified using lookout. Of note, the C152 pilot did not feel that this incident warranted the reporting of an Airprox; we nevertheless welcome this report.

### **Summary**

An Airprox was reported when a Squirrel helicopter and a C152 were flown into proximity at 1529 on Wednesday 21<sup>st</sup> May 2014. Both pilots were operating under VFR in VMC, the Squirrel pilot in receipt of a Basic Service from Shawbury ‘Low Level’ and the C152 pilot in receipt of a Basic Service from Shawbury ZONE.

### **PART B: SUMMARY OF THE BOARD’S DISCUSSIONS**

Information available consisted of reports from the pilots of both aircraft, radar photographs/video recordings, reports from the air traffic controllers involved and reports from the appropriate ATC and operating authorities.

<sup>3</sup> Rules of the Air 2007 (as amended), Rule 8 (Avoiding aerial collisions) and as reflected in Military Flying Regulations.

<sup>4</sup> *ibid.*, Rule 9 (Converging)

The Board first discussed the service available to the pilots. Both were speaking to Shawbury ATC, the Squirrel pilot to 'Low Level' and the C152 pilot to 'ZONE', and both were in receipt of a Basic Service. Some members felt that a greater degree of coordination between 'Low Level' and ZONE might have highlighted the collision course of the 2 aircraft and enabled the controllers to pass Traffic Information. In this case, information was available to both controllers who were separately talking to aircraft in the same airspace, but neither was able to coordinate that information with the other. An ATC member noted that the Shawbury 'Low Level' was a low-priority task with a single squawk allocated for all aircraft using it and usually only involved a single call to verify Mode C. He also stated that ZONE workload was high at the time, providing Traffic Services to other aircraft, and therefore the opportunity to cross-liaise with the other controller was limited.

Turning to the pilots, the Board felt that the 'see-and-avoid' principle, which underpins flying activity in Class G airspace, had worked, albeit with a fairly late sighting by the Squirrel crew. The C152 pilot did not consider the proximity of the helicopter to be a threat, assuming he had seen the subject Squirrel. Members felt that, notwithstanding the lack of Traffic Information and concerns regarding the azimuth accuracy of traffic displayed on the Squirrel TAS, the Squirrel crew may have been better served by changing altitude when they first became aware of the TAS contact in order to increase separation in the vertical.

The Board agreed that the cause was a late sighting by the Squirrel pilot but that, once sighted, he had taken timely and effective avoiding action to avert collision and reduce the risk to category 'C'.

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

Cause: A late sighting by the Squirrel pilot.

Degree of Risk: C.

ERC Score<sup>5</sup>: 2.

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<sup>5</sup> Although the Event Risk Classification (ERC) trial had been formally terminated for future development at the time of the Board, for data continuity and consistency purposes, Director UKAB and the UKAB Secretariat provided a shadow assessment of ERC.