

## **AIRPROX REPORT No 2013120**

Date/Time: 28 Aug 2013 1226Z

Position: 5115N 00114W  
(4nm W Basingstoke)

Airspace: London FIR (Class: G)

Reporting Ac Reported Ac

Type: Squirrel Ikarus C42  
(AS350)

Operator: HQ Air (Trg) Civ Club

Alt/FL: 2000ft 2100ft  
QNH (1023hPa) QNH (NK hPa)

Conditions: VMC VMC

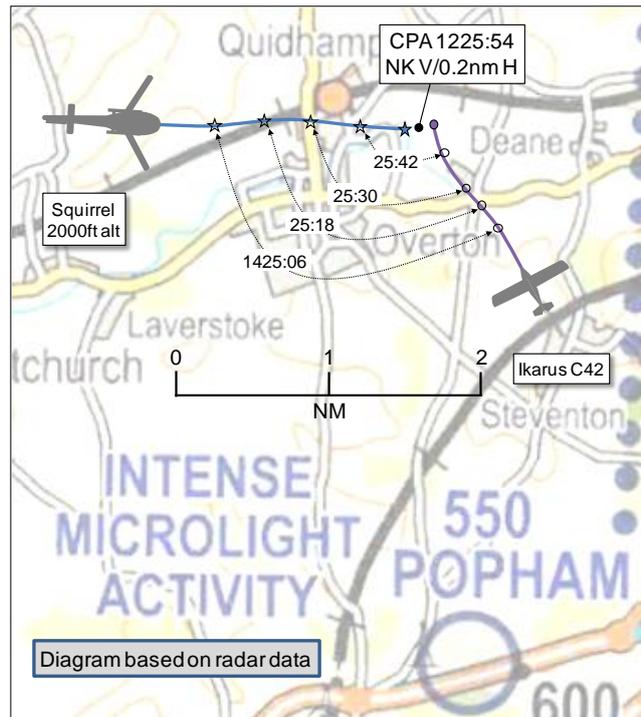
Visibility: 30km >20nm

Reported Separation:

0ft V/50m H 0ft V/350m H

Recorded Separation:

NK V/0.2nm H



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

**THE SQUIRREL PILOT** reports conducting an instructional sortie, occupying the left seat, with the student handling-pilot in the right seat. The black and yellow helicopter had position lights, white strobe lights and landing lamp selected on, as was the SSR transponder with Modes A, C and S; the aircraft was not fitted with a TAS or ACAS. The pilot was operating VFR in VMC, in receipt of a Traffic Service from Odiham APR, in level cruise, at 130kt, and being radar vectored at altitude 2000ft for a PAR to RW09. Whilst heading approximately southeast, they received Traffic Information on a contact in the 2 o'clock, at 2 miles, with no height information; the student acknowledged. The instructor looked across the cockpit and called visual with a FW aircraft below them in the 3 o'clock, which she believed was the previously reported traffic. The instructor told the student to call 'visual' and APR subsequently informed them of traffic at ½nm, moving right to left, with no height information. As the instructor raised her head to look out to the front, a FW aircraft was seen passing from right to left at the same height, directly in front and at a range of about 50m.

She assessed the risk of collision as 'High'.

**THE C42 PILOT** reports conducting an instructional sortie, under VFR in VMC, and in receipt of an A/G service from Popham Radio. The white aircraft was not fitted with an SSR transponder, TAS or ACAS; the lighting state was not reported. During the visual scan, both the student and instructor saw a helicopter in the 9 o'clock position, due west, at a range of 300-400m at the same height. It's speed and range were very difficult to judge due to the 'head-on' aspect. The instructor noted that they 'had right of way' but, because the helicopter did not appear to make any change in heading or altitude, he turned to the right and started a full-power climb. Neither he, nor the student saw the helicopter after that.

He assessed the risk of collision as 'Low'.

**THE ODIHAM DIRECTOR** reports he had taken control of the Squirrel on a handover from Benson for a PAR to RW09. There were 'quite a few conflictors' in the area but anything that was to affect the Squirrel was called. The traffic information was updated at least two or three times and also, on a number of occasions, the Squirrel pilot called visual with the traffic that was being called. Another aircraft was 'free called from Approach', inbound for the ILS RW27. The Squirrel pilot was told of a

delay against radar traffic inbound for RW27, which was acknowledged. The Squirrel was turned from south onto west and then onto east for the delay. The controller realised that he had done this 'a little early', not giving the PAR enough time to swing back to RW09. He issued a turn onto south, which the Squirrel pilot appeared to continue turning through, so he issued an inbound turn onto east. The Squirrel pilot was then put onto a heading of 070° before being handed over to talkdown at 10nm. The DIR was unaware that an Airprox had occurred until 1445L, when the Squirrel pilot phoned the Supervisor to inform him that an Airprox was being filed.

**THE ODIHAM APPROACH CONTROLLER** reports that at the time of the incident he was the approach controller. There was no supervisor established, and the ATCO in charge (I/C) was not in the room. He therefore added his comments in lieu of a supervisor as the ATCO I/C did not witness the event and could not add a narrative. The APP controller was unaware that an incident and Airprox had occurred as neither was declared on frequency. The approach appeared uneventful amongst a busy period of approaches and hence from an air traffic perspective the severity of the incident was low.

## **Factual Background**

The weather at RAF Odiham was recorded as follows:

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METAR EGVO 281150Z 36005KT 9999 FEW045 21/10 Q1023 BLU NOSIG  
METAR EGVO 281250Z 02003KT 9999 FEW045 SCT250 22/11 Q1023 BLU NOSIG
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## **Analysis and Investigation**

### **Military ATM**

This incident occurred 11.6nm WNW of RAF Odiham, at 1225:52 on 28<sup>th</sup> August 2013, between a Squirrel and a C42 Ikarus. The Squirrel was positioning to conduct a PAR to RW09 at Odiham, in receipt of a TS from Odiham Director. The Ikarus was operating in the vicinity of Popham aerodrome and in receipt of an Air/Ground Service from Popham Radio.

All heights/altitudes quoted are based upon SSR Mode C from the radar replay unless otherwise stated. The Ikarus was not fitted with a transponder; however, a primary surveillance contact believed to be the Ikarus was detected by NATS radars and was thus visible on the radar display. This investigation has been completed on the basis that the observed primary contact was the Ikarus. RAF Odiham did not conduct an incident investigation in accordance with MAA RA1410.

The Squirrel and Ikarus crews were in broad agreement over the in-flight conditions, reporting VMC with 22km visibility. Odiham Director reported high to moderate workload, with medium task complexity, providing ATS to one aircraft in addition to the Squirrel, with that aircraft conducting IFR approaches to Odiham's RW27. Both Odiham Director and Approach described a busy surveillance radar picture, with the 'airspace to the west of the airfield ...highly active with multiple squawking and non-squawking returns'. However, because the Squirrel pilot did not report an Airprox on the RTF in use at the time, Odiham Director was unaware that an incident had occurred. Subsequent analysis by the Unit showed that the crew believed they had mistaken the aircraft in their 3 o'clock for the aircraft described in the TI. That said, the crew's recollection of the TI that they received does not correspond exactly with analysis of the RT transcript.

In the 4½min period preceding the incident, Odiham Director provided the Squirrel pilot with TI on 2 conflicting aircraft in addition to the Ikarus. One aircraft was non-transponding and was called to the Squirrel at 1223:21, with the crew subsequently reporting visual at 1224:01. Of potentially greater relevance to this investigation, a second aircraft was called to the Squirrel at 1221:29, with the crew subsequently reporting visual with it at 1222:11. Fig 1 depicts the Squirrel in relation to these 2 aircraft at 1224:01; SSR 3A 3650 was the Squirrel, SSR 3A 0440 was the 'second ac', the non-transponding aircraft is 0.7nm south of the Squirrel.

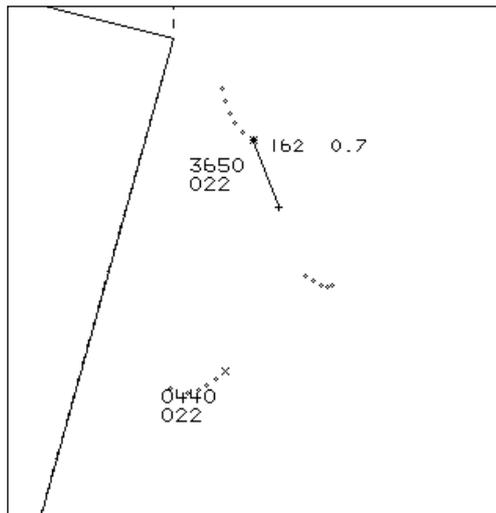


Figure 1: Squirrel in relation to un-related aircraft at 1224:01

Analysis of the radar replay determined that the aircraft squawking SSR 3A 0440 maintained a similar flight profile to that illustrated in Fig 1. It slowly converged with the Squirrel, moving from the Squirrel's 3 o'clock, through it's 4 o'clock at approx 1224:55 to it's 5 o'clock position at approx 1225:55 and descending to indicate 2000 ft. No other aircraft were detected by NATS radars that corresponded with the Squirrel crew's sighting of an aircraft below in their 3 o'clock position. However, it has not been possible to positively correlate this sighting with the aircraft squawking SSR 3A 0440, which would have become increasingly difficult for the non-handling pilot to see as it moved aft.

At 1224:27, a primary contact believed to be associated with the Ikarus was detected by NATS surveillance radar, 2.1nm north-northeast of Popham. At 1224:34, Odiham Director provided accurate TI to the Squirrel on the Ikarus, advising them of "*pop-up traffic right 1 o'clock, 3 miles, crossing right to left, no height information, possible glider*", which was acknowledged. Fig 2 depicts the incident geometry at this point and shows the positions of the previously mentioned traffic. Subsequent to completing their DASOR, Odiham Director related that their use of the phrase 'pop-up' was due to the Ikarus not being previously shown on their surveillance display, which may also correspond with its detection by NATS' radars.

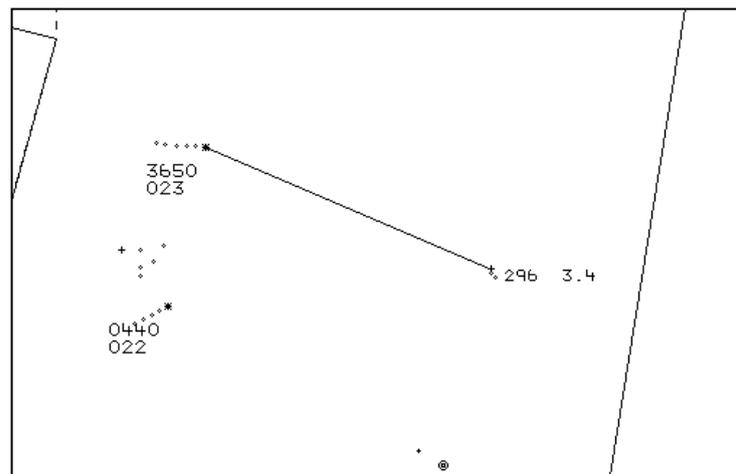


Figure 2: Incident geometry at 1224:34

At 1225:07, Odiham Director updated the TI to the Squirrel on the Ikarus, advising the crew "*previously called traffic now right one o'clock, one and a half miles, crossing right to left, no height information*", which was acknowledged. At that point, the Ikarus was 1.9nm east-southeast of the Squirrel, tracking northwesterly; the Squirrel was heading 090° and indicating 2200ft. At 1225:35, Odiham Director provided the Squirrel with a further update to the TI on the Ikarus,

advising the crew “*previously called traffic now right one o’clock, half a mile, crossing right to left, no height information*” which was acknowledged. At that point, 0.9nm lateral separation existed and the Squirrel was maintaining heading 090°.

CAP 413, Chapter 5, paragraph 21.2 states that the relative movement of a conflicting aircraft should be described as ‘converging, where there appears to be no change in relative bearing between the conflicting traffic’s flight path and that of the aircraft under service and/or the controller perceives there to be a significant risk of mid-air collision.

CAP 413, Chapter, 5 paragraph 21.1 states that the term crossing should be used ‘where there is relative movement’ between the aircraft in receipt of an ATS and the conflicting ac.

The Ikarus pilot’s avoiding right turn was evident on the radar replay at 1225:46 when 0.4nm (approximately 740m) lateral separation existed between the 2 aircraft. Thus, given that the Ikarus pilot’s report suggests that they spent some time assessing the Squirrel’s track prior to initiating avoiding action, greater than 0.4nm lateral separation existed at the point that they first sighted the Squirrel.

At 1225:49, the Squirrel crew reported visual with the Ikarus. The CPA occurred at 1225:52 as the Ikarus passed 0.2nm through the Squirrel’s 12 o’clock. The Ikarus pilot reported that they lost sight of the Squirrel having initiated the right turn, whilst the Squirrel pilot reported that the Ikarus ‘was seen passing right to left at the same height’, directly in the 12 o’clock at a range of 50m.

Whilst the use of the term ‘converging’ rather than ‘crossing’ would have better described the Ikarus’ relative movement to the Squirrel crew, the TI passed by Odiham Director was otherwise accurate and should have assisted the Squirrel’s crew in visually acquiring the Ikarus. Furthermore, Odiham Director did well to quickly acquire the primary radar contact associated with the Ikarus after it appeared on their surveillance display; especially given the description by Odiham Approach of busy airspace to the west of Odiham with ‘multiple squawking and non-squawking returns’.

BM SPA contends that ATS provision was neither a causal nor a contributory factor in this incident; however, BM SPA will continue to highlight the recent change to CAP 413 with regards to the methods of describing the relative movement of conflicting aircraft, to ensure that this valuable change is fully adopted.

## **UKAB Secretariat**

Rule 9, paragraph 3 of the Rules of the Air 2007 states:

‘...when two aircraft are converging in the air at approximately the same altitude, the aircraft which has the other on its right shall give way.’

Of note, Rule 9 does not confer a ‘right of way’, but rather a requirement to ‘give way’. Finally, whatever the obligations placed on either pilot, Rule 8 (Avoiding aerial collisions) states:

‘...it shall remain the duty of the commander of an aircraft to take all possible measures to ensure that his aircraft does not collide with any other aircraft.’

‘An aircraft shall not be flown in such proximity to other aircraft as to create a danger of collision.’

‘An aircraft which is obliged by this Section to give way to another aircraft shall avoid passing over or under the other aircraft, or crossing ahead of it, unless passing well clear of it.’

Both pilots were equally responsible for collision avoidance and the Squirrel pilot was required to give way to the C42.

## Comment

### HQ AAC

The Squirrel crew could have been more proactive in responding to the TI in an area of known high GA activity. While an aircraft had been visually identified by the Instructor, it did not appear to correspond with the TI provided. It is appreciated that the Ikarus, approaching from the one o'clock, would have been hidden from the instructors' field of view by the Squirrel airframe but, with traffic converging from the right, the Squirrel pilot was required to give way and it was imperative that the aircraft was manoeuvred to attempt to identify the traffic in order to resolve a possible conflict. The Instructor could have facilitated deconfliction by bringing the student off instruments to maximise lookout until the other aircraft had been positively identified. It appears that while the Ikarus pilot attempted to resolve the conflict, his avoiding action occurred at, or shortly after, CPA.

## Summary

A Squirrel helicopter and Ikarus C42 microlight flew into conflict at 1226 on 28<sup>th</sup> August 2013. Both pilots were operating under VFR in VMC in Class G airspace, the Squirrel pilot in receipt of a Traffic Service and the C42 pilot an A/G service.

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

Information available included reports from the pilots of both ac, radar video recordings, reports from the air traffic controllers involved and a report from the appropriate ATC authority.

It was immediately apparent to the Board that this was a case of mistaken identity by the Squirrel pilot; having received traffic information on the C42, "*pop-up traffic right 1 o'clock, 3 miles, crossing right to left, no height information, possible glider*", the Squirrel pilot had visually acquired another aircraft in the right 3 o'clock. With the mental model that the conflicting traffic had been identified, the squirrel pilot would understandably perceive no reason to bring the student off instruments to assist with visual lookout. In the event, the Squirrel pilot saw the conflicting C42 at or shortly after CPA but, fortunately for the crew, the C42 pilot had seen them, albeit at close range. The lesson for the Squirrel pilot was clear, all-round lookout must be maintained at all times without allowing oneself to become fixated on other aircraft no matter how compelling the cues.

The Board then discussed the degree to which the C42 pilot's avoiding action had affected the outcome. Some members opined that he had only seen the Squirrel just before CPA and therefore had had no influence on the outcome. However, it was eventually agreed, by a majority, that, although the C42 pilot had seen the Squirrel late, his avoiding manoeuvre had probably made a difference to the outcome thereby narrowly avoiding classification as a Risk A event. Nevertheless, safety margins had been much reduced below normal in this incident.

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

Cause: Effectively a non-sighting by the Squirrel pilot and a late sighting by the Ikarus pilot.

Contributory Factor: The Squirrel pilot correlated the wrong aircraft with the TI.

Degree of Risk: B.

ERC Score<sup>1</sup>: 20

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<sup>1</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.