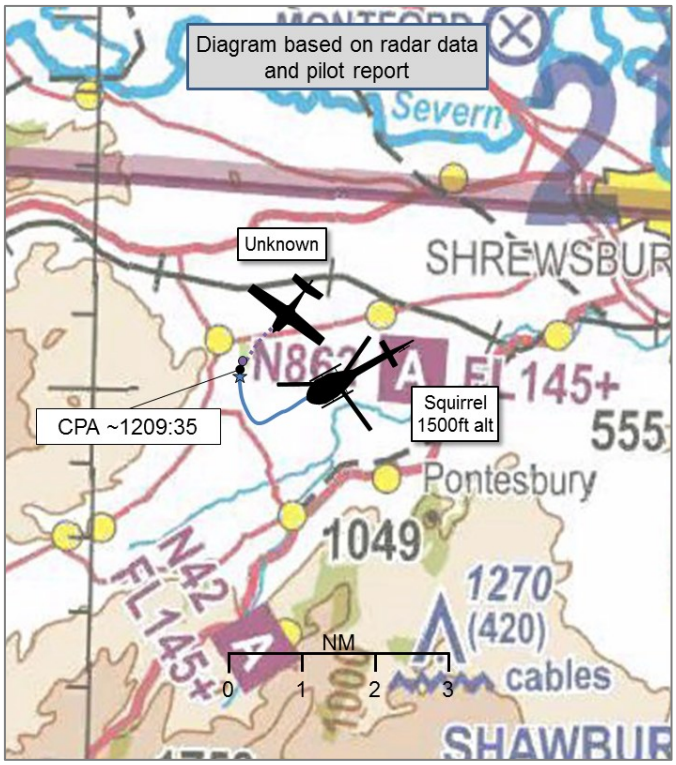
AIRPROX REPORT No 2016152

Date: 26 Jul 2016 Time: 1209Z Position: 5240N 00256W Location: 5nm W of Shawbury

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	Squirrel	Light Aircraft
Operator	HQ Air (Trg)	Unknown
Airspace	London FIR	London FIR
Class	G	G
Rules	VFR	NK
Service	Basic	
Provider	Shawbury	
Altitude/FL	1500ft alt	
Transponder	C, S	
Reported		
Colours	Black, Yellow	White, Orange
Lighting	Landing, HISL	Not Reported
Conditions	VMC	
Visibility	7km	
Altitude/FL	NK	
Altimeter	NK (1020hPa)	
Heading	320°	
Speed	NK	
ACAS/TAS	TAS	
Alert	None	
Separation		
Reported	0 V/150m H	
Recorded	NK	



THE SQUIRREL PILOT reports that he had just completed a right turn in order to position his aircraft prior to initiating a Practice Engine Failure. TAS Sentinel displayed a contact within 2 miles and 700ft below in the aircraft's 2 o'clock. Both pilots attempted to identify the contact prior to entering the manoeuvre. During this lookout the LHS pilot then spotted a light, fixed-wing aircraft (believed at the time to be a Grob) on a conflicting track at the same height approximately 200m away in his aircraft's 2 o'clock. The LHS Pilot perceived that if both aircrafts' flight paths remained the same, an impact was imminent and, as such, took control and executed an avoiding turn to the right whilst initiating a climb. Visual contact was regained with the aircraft to confirm that it wasn't indicating on TAS sentinel, the aircraft was seemingly unaware of the near miss having not altered their flight path. The original TAS contact 700ft below was identified as company traffic shortly afterwards. Once the aircraft was in a safe configuration, an Airprox report was filed with Shawbury low-level.

He assessed the risk of collision as 'High'.

THE UNKNOWN AIRCRAFT PILOT could not be traced.

THE SHAWBURY CONTROLLER reports that whilst he was controlling radar traffic operating in Shawbury's 'IF Box D' under a Traffic Service there was a non-squawking aircraft operating in the area (approximately 8nm East of Welshpool's ATZ.) He had called this aircraft to his IF-traffic several times and advised that Box E may be more ideal to avoid the contact which looked to be general handling in the same area as Box D; the IF-traffic subsequently opted to move to Box E. The Low-Level frequency was particularly quiet at the time when 2 aircraft departed Shawbury for operations in LFA 9. One of these aircraft (the aircraft that declared the Airprox) requested a BS as per SOP's and to operate NW of Shrewsbury conducting PFL's. At the time, the previous non-squawking aircraft was away from known Shawbury aircraft using his Low-Level frequency. Then, at the same time as the IF-traffic entered Box E, the PFL-ing Squirrel declared an Airprox on what appeared to be the

same non-squawking traffic avoided earlier operating near Welshpool. The Squirrel pilot believed the aircraft to be a Grob at approximately 2000ft.

He perceived the severity of the incident as 'Medium'.

THE SHAWBURY SUPERVISOR reports that he did not witness the incident. When the station based aircraft was pointed out to him by the controller there were no other contacts in the vicinity. Shortly after, a primary return appeared approx. 3nm away which could have been the other aircraft. LARS had no traffic on frequency at the time.

Factual Background

The weather at Shawbury was recorded as follows:

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METAR EGOS 261150Z 24013KT 9999 -SHRA SCT025 BKN065 18/12 Q1020 BLU NOSIG
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Analysis and Investigation

Military ATM

The tape transcripts between Shawbury Low Level and the Squirrel Helicopter show no relevant transmissions prior to the Airprox. Furthermore, the radar replay shows no primary contacts in the immediate vicinity in the 30 seconds preceding the time the Airprox was declared. A primary contact is visible approximately 2nm to the west of the Squirrel, 45 seconds before the Airprox is declared, but the contact disappears from radar.

The pilot reported completing a right-hand turn in order to position the aircraft prior to initiating a practice engine failure. TAS had indicated a contact prior to entering the manoeuvre and, whilst conducting lookout, the LHS pilot spotted a light fixed-wing aircraft on a conflicting track at the same height 200m away in the aircraft's 2 o'clock. The pilot reported the severity as medium.

The Shawbury Approach/Low-Level controller was working four frequencies and reported his workload as medium to low. Prior to the Airprox, the controller was working radar traffic operating under a Traffic Service in IF Box D and this came into confliction with a non-squawking aircraft in a similar location to the Airprox. The controller reported that the Low-Level frequency was quiet before 2 aircraft departed Shawbury for operation in LFA 9. The Squirrel requested a Basic Service as per SOPs and to operate to the NW of Shrewsbury conducting PFLs.

The Shawbury Low-Level position is established to monitor and log the movements within LFA 9, for which Shawbury is the control authority for the dedicated user area. Although the control position is a radar position, the aircraft that work the frequency are placed under a Basic Service and, on busy days, can be speaking with over 20 callsigns. Aircraft operating on the frequency depart using the Shawbury gate system and transpond using either a 7422 or 7421 squawk in order for ATC to apply height 'deeming' rules. Once away from Shawbury, this can make it difficult for a controller to maintain track identification with multiple aircraft utilising the same squawk code (7422 and/or 7421). As per CAP 774 under a Basic Service, the controller is not responsible for providing traffic information and the purpose of the Low Level position is to provide a tracking and logging function only. A radar service can be sought if required from the Lower Airspace Radar Controller. Radar coverage in certain areas around Shawbury is known to be poor, and the 300-350 radial between 7-15 miles from Shawbury is one of these known areas.

The prime barrier for the pilot in this Airprox was 'see and avoid'. The Squirrel Helicopter was under a Basic Service working on the Low-Level frequency and this would have limited the opportunity for the controller to pass traffic information. The unknown aircraft was not squawking and this led to the TAS on the Squirrel being ineffective in providing the pilots with greater situational awareness.

UKAB Secretariat

The Squirrel and light aircraft pilots shared an equal responsibility for collision avoidance and not to operate in such proximity to other aircraft as to create a collision hazard[1]. If the incident geometry is considered as converging then the Squirrel pilot was required to give way to the light aircraft[2].

Comments

HQ Air Command

Having already been advised of conflicting, non-squawking traffic in his previous operating area, the Squirrel pilot had actively sought an area to conduct his flying exercise. Unfortunately the radar coverage at his altitude of operation did not allow a full, uninterrupted picture to the controllers and so they stood little chance of being able to warn the Squirrel pilot of the non-squawking traffic (even under a Basic Service); indeed, the primary contact – if it was the Airprox aircraft – was not visible until after the Airprox was declared. Therefore, the only viable barrier to MAC in this instance was lookout, which the Squirrel crew employed to good effect having been warned by their TAS of a contact in that sector but not restricting their lookout purely to acquire that single contact (which wasn't the Airprox aircraft).

Summary

An Airprox was reported when a Squirrel and a light aircraft flew into proximity at 1209 on Tuesday 26th July 2016. The Squirrel pilot was operating under VFR in VMC and in receipt of a Basic Service from Shawbury. The light aircraft could not be traced.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of reports from the pilot of the Squirrel 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.

Turning first to the actions of the Squirrel crew, the military member began the discussion by explaining that limitations of the TAS on the Squirrel (due to the positioning of the equipment aerials) can impact the notification time of conflicting aircraft. That being said, it appeared that the unknown aircraft was not squawking anyway and so would not have been displayed. Coupled with the known areas of poor radar coverage due to the local high-ground, this had limited some of the safety barriers; these limitations are all understood by the local crews, and the importance of good lookout is reinforced when operating in these conditions. The Board agreed that the Squirrel crew's lookout had been paramount in resolving the conflict, as demonstrated through their scan whilst searching for a different TAS notified contact.

Turning to the unknown light aircraft, members commented that, although it could not be positively determined if the light aircraft was transponding or not, in all likelihood it had not been and this highlighted another example where the use of this equipment would have enhanced the probability of ATC and aircraft electronic warning systems being alerted to their presence. The Board reiterated the point that SSR Modes A and C/Alt should always be selected on to aid the situational awareness of ATC and other aviators. GA members commented that, although they did not have a report from the light-aircraft pilot, it seemed from the Squirrel pilot's report that it was probable that he had not seen the Squirrel and therefore did not carry out any form of avoiding actions.

The Board then turned to the cause and risk of the Airprox. Although a late sighting by the Squirrel pilot, they agreed that his prompt avoiding actions had prevented this from becoming a more serious

[1] SERA.3205 Proximity.
[2] SERA.3210 Right-of-way (c)(2) Converging.

incident, especially as it appeared that the light aircraft pilot had probably not seen the Squirrel and had made no alteration to his flight path. The Board decided that the cause of the incident was a late sighting by the Squirrel pilot and a probable non-sighting by the light aircraft pilot. Turning to the risk, the Board agreed that the avoiding actions of the Squirrel pilot had materially increased the separation between the 2 aircraft but that, nonetheless, safety had been much reduced below the norm; they therefore agreed that the risk was Category B.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: A late sighting by the Squirrel pilot and a probable non-sighting by the light-aircraft pilot.

Degree of Risk: B.