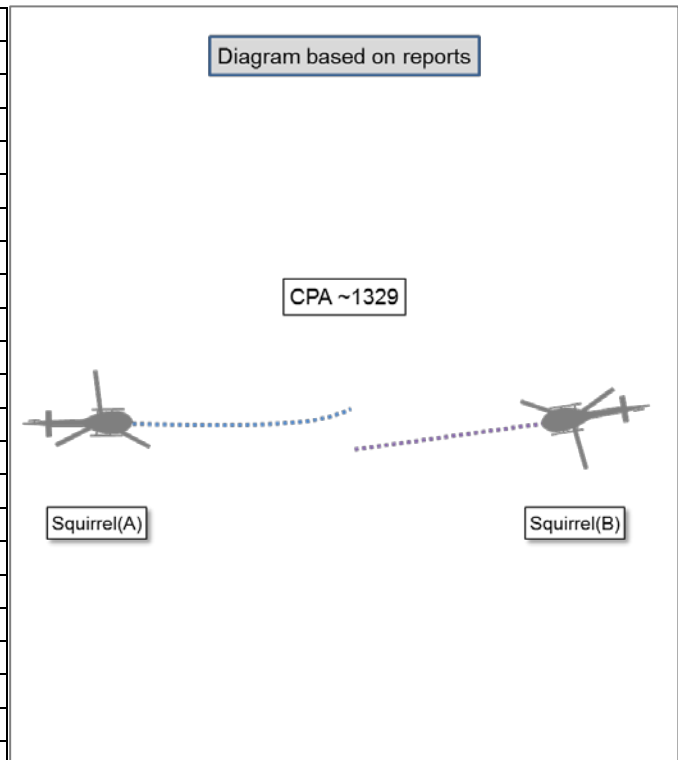


AIRPROX REPORT No 2017023

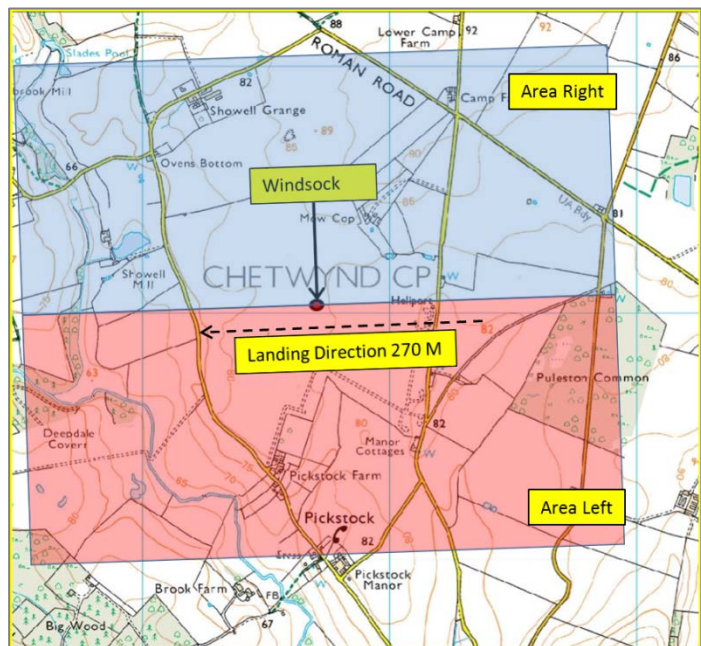
Date: 22 Feb 2017 Time: 1329Z Position: 5249N 00224W Location: Chetwynd

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	Squirrel(A)	Squirrel(B)
Operator	HQ Air (Trg)	HQ Air (Trg)
Airspace	London FIR	London FIR
Class	G	G
Rules	VFR	VFR
Service	Basic	Basic
Provider	Chetwynd Radio	Chetwynd Radio
Altitude/FL	300ft	400ft
Transponder	A, C, S	A, C, S
Reported		
Colours	Black/yellow	Black/yellow
Lighting	Landing, HISL	Landing, HISL
Conditions	VMC	VMC
Visibility	>10km	>10km
Altitude/FL	50ft	100ft
Altimeter	QFE (997hPa)	QFE (997hPa)
Heading	090°	270°
Speed	90kt	100kt
ACAS/TAS	TAS	TAS
Alert	TA	TA
Separation		
Reported	0ft V/75ft H	'100ft'
Recorded	100ft V/0.1nm H	



THE SQUIRREL(A) PILOT reports being in 'area left' at Chetwynd with Landing Direction 270°, conducting a downwind quickstop¹ along the centreline (windsock off to the left, tracking 090°). Having heard 3 calls to join (2 for area right & 1 for area left) and two established calls (both area right), he visually identified two aircraft that he perceived to be the aircraft in area right; one in the left 10 o'clock and other left 11 o'clock. He was concerned by the direction of the 11 o'clock aircraft because it looked like it was coming across the centreline in front of him. He abandoned his manoeuvre and, realising that the other helicopter was coming across his track and approaching rapidly, he called '[his C/S], flying through' and turned left to ensure separation, whilst remaining in area left. The aircraft passed down his right-hand side at the same height, with a slight nose up attitude, at a distance of approximately 75ft. He then applied power to climb to 300ft and completed a downwind circuit. He noted that he had not heard the other pilot's 'established' call and observed him as being in the Chetwynd area north.



He assessed the risk of collision as 'Medium'.

¹ A 'quickstop' commenced when heading downwind with a 180° left or right turn into-wind before stopping.

THE SQUIRREL(B) PILOT reports that when downwind during the set up for an into-wind quickstop at Chetwynd, landing direction 270° area left, he observed an aircraft in the same area setting up for a downwind quickstop. As he ran in for the final set up of the manoeuvre, he observed that the other aircraft had not opted for an early entry to the first large area available to him. The Squirrel (B) pilot initiated his quickstop slowly, keeping a lesser amount of flare so as to keep the other aircraft in sight at all times (which he assumed would conduct its downwind quickstop behind him to the other large area available). In the final stages of his manoeuvre he saw the aircraft fly by his right side at an approximate distance of 100-150ft and then call going around.

He assessed the risk of collision as 'Low'.

THE TERN HILL CONTROLLER reports he was providing a Basic Service for pilots at Chetwynd [Chetwynd Radio], whilst himself located at Tern Hill [5.7nm from Chetwynd, bearing 308°]. No Airprox was reported by R/T and consequently he was unaware of such an incident.

THE TERN HILL SUPERVISOR reports that no Airprox was reported at Chetwynd and consequently the controllers had no recollection of the incident.

Factual Background

The weather at Shawbury was recorded as follows:

METAR EGOS 221450Z 26011KT 9999 -RA FEW018 OVC080 11/07 Q1005 BLU BECMG SCT018 WHT=

Analysis and Investigation

Military ATM

An Airprox occurred on 22 Feb 17 at approximately 1330hrs UTC, in the vicinity of Chetwynd Relief Landing Ground (RLG), between 2 Squirrels carrying out solo general handling. Both aircraft were receiving Basic Service (BS) from Chetwynd Radio, which is monitored by RAF Shawbury controllers operating from Tern Hill. Portions of the tape transcripts between the Chetwynd Radio controller and both Squirrels are below:

From	To	Speech Transcription	Time	Remarks
Squirrel(B)	Chetwynd Radio	Chetwynd Radio [Squirrel(B) C/S] request join from the South West P O B one, Basic Service.	1323:26	
Chetwynd Radio	Squirrel(B)	[Squirrel(B) C/S] Chetwynd Radio Chetwynd landing direction Two Seven Zero degrees, Shawbury QFE Nine Nine Seven, one believed to be downwind ops area left, area right believed to be clear with two joining for area right Basic Service.	1323:35	
Squirrel(B)	1323:53	[Squirrel(B) C/S] landing direction Two Seven Zero degrees, QFE Nine Nine Seven Hectopascals Basic Service, joining for area left.	1323:53	
Chetwynd Radio	Squirrel(B)	[Squirrel(B) C/S].	1324:01	
Ternhill Tower	B282	Bravo Two Eight Two copied.	1324:11	Believe this is a mistake from the controller who also has Ternhill Tower frequency.
B207	Chetwynd Radio	Bravo Two Zero Seven established area right.	1325:36	
Chetwynd Radio	B207	Bravo Two Zero Seven.	1325:41	
Squirrel(B)	Chetwynd Radio	[Squirrel(B) C/S] established area left.	1326:06	
Chetwynd Radio	Squirrel(B)	[Squirrel(B) C/S].	1326:09	

From	To	Speech Transcription	Time	Remarks
Chetwynd Radio	B619	Bravo Six One Nine confirm you've established area right?	1326:15	
Chetwynd Radio	B619	Bravo Six One Nine confirm you've established area right?	1326:21	
B619	Chetwynd Radio	Six One Nine established area right.	1326:24	
Chetwynd Radio	B619	Roger.	1326:26	
Squirrel(A)	Blind Broadcast	[Squirrel(A) C/S] flying through.	1328:54	
B207	Chetwynd Radio	Bravo Two Zero Seven er downwind ops area right.	1331:01	
B207	Chetwynd Radio	Bravo Two Zero Seven downwind ops area right.	1331:09	
Squirrel(B)	Chetwynd Radio	[Squirrel(B) C/S] downwind ops area left.	1331:14	

The Chetwynd Radio frequency is monitored by a Shawbury ATC controller operating from Tern Hill, where they are also in the role of Tern Hill ADC. The controller has an Air Traffic Monitor (ATM), a slave radar feed from Shawbury Tower, which can be used for Situational Awareness (SA). This is supplemented by a pinboard, used as an aide-memoire subject to aircrew accurately updating their position information. Chetwynd RLG is not visible from Tern Hill tower and air systems on final, in a low hover or on the ground are not displayed on the ATM due to terrain. There is no requirement for the Chetwynd Radio controller to identify aircraft or monitor the ATM, when providing the Basic Service listening watch. The primary method of controlling Chetwynd Radio is by the use of the pinboard.

Because all of the aircraft operating at Chetwynd RLG were making standard radio calls, it was reasonable for the Chetwynd Radio controller to believe that operations were proceeding as normal. The Airprox was not reported on frequency to the Chetwynd Radio controller nor was it reported by phone to the Shawbury Air Traffic Supervisor after landing.

UKAB Secretariat

The Squirrel pilots shared an equal responsibility for collision avoidance and not to operate in such proximity to other aircraft as to create a collision hazard². 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.

Occurrence Safety Investigation

An OSI was convened to investigate a reported Airprox between 2 Squirrel helicopters at Chetwynd Field Landing Site (FLS) on 22 Feb 17. The pilot of one of the Squirrel aircraft considered that another Squirrel aircraft had crossed his nose from left to right on a near reciprocal track, at an estimated distance of 75ft.

The OSI centred upon interviews with the pilots involved, analysis of Chetwynd geography in conjunction with witness accounts, examination of mission materials, the ATC transcript, extant orders and SOPs, technical documents, relevant aircraft engineering records, recorded aircraft track data and a review of Cockpit Voice Recorder data. A Substitution Test was conducted through consultation with sister squadron personnel within the Defence Helicopter Flying School (DHFS). The outcome was as follows; The Squirrel(A) pilot considered that the separation between his and Squirrel(B) reduced beyond safe limits. The cause of the Airprox was that the flight-paths of the 2 aircraft were in conflict. The OSI team established 9 Causal Factors (CF):

² SERA.3205 Proximity.

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

1. Squirrel(A) pilot delayed the initiation of his downwind quickstop, continuing on his run-in track; he was uncertain as to the intentions of the aircraft that he had assessed as being in Area Right [Squirrel(B)], but that now appeared to be crossing into Area Left. He did not wish to become unsighted to the other aircraft by initiating his manoeuvre.
2. Squirrel(A) pilot's initial mental picture was that Squirrel(B) was joining Area Right; therefore, he continued with his run-in for his downwind quickstop.
3. Squirrel(B) was situated in Area Right for approximately the first half of his join for Area Left.
4. Squirrel(B) pilot's selection of his initial run in marker was incorrect. By using the tip of wood marker he inadvertently placed himself in Area Right.
5. Squirrel(B) pilot perceived that he was in Area Left as he considered that he had selected an appropriate marker and all indications from his HSI confirmed the perception that he was on the correct track, in the correct area.
6. Squirrel(B) pilot assumed that Squirrel(A) pilot had identified that he was joining for Area Left and therefore assumed that Squirrel(A) pilot would initiate his downwind quickstop in one of 2 usual positions; Squirrel(B) pilot planned to adjust his run-in and manoeuvre once Squirrel(A) pilot had initiated his quickstop.
7. Neither Squirrel pilot had previously experienced a 270°M landing direction at Chetwynd FLS; this in all likelihood contributed to their selection of run in markers that placed them in the adjacent operating area.
8. It is probable that Squirrel(A) pilot had also strayed into Area Right; this reinforced the impression that Squirrel(B) was in Area Right as he would appear, to Squirrel(A) pilot, to be further to the left of the windsock.
9. HSI inaccuracies may have caused both Squirrel pilots to erroneously perceive that they were on the correct inbound track, whilst having strayed into the adjacent area. This may also have been exacerbated by possible "de-synching" of the HSI.

The OSI team also made 4 Observations, 2 of which were relevant to the Airprox:

1. Anecdotal evidence revealed that previously there were minimum supervisory requirements for solo students operating at Chetwynd FLS, involving either instructors on the ground or an airborne instructor requirement. Currently there are no additional supervisory requirements for multiple solo student ops at Chetwynd FLS; there is no Instructor or ATC presence on the ground and there is no airborne instructor requirement.
2. Chetwynd FLS is utilised for approximately 14,500 movements per year, yet has no fire or crash cover.

The CFs and Observations attracted 5 Recommendations:

1. Conduct a CI event to establish and implement the optimum method of conducting 2 area operations at Chetwynd.
2. RAF Shawbury FOB to be amended to include the requirement for a position element as part of the "Established" RT call at Chetwynd FLS; for example "Callsign established Area Right, wide downwind". Consideration to be given, where appropriate, to adding this requirement to other FLS.
3. Perform a review of fire and crash cover requirements for FLS with high traffic volumes.
4. Establish and implement a minimum supervision requirement for multiple solo student ops at Chetwynd.
5. RAF Shawbury FLS overlays be amended to include the outline of Chetwynd FLS.

Comments

HQ Air Command

Chetwynd Field Landing Site (FLS) is situated in Class G airspace. Due to its size and characteristics, the FLS is used for the instruction and practise of helicopter quickstops in the early stages of helicopter pilot training. Chetwynd FLS is also used for other elements of training

across all areas of DHFS. The DHFS SOP for the use of Chetwynd FLS has it divided into 2 areas, Area Left and Area Right, as seen from the approach; the areas are defined by the landing direction (Degrees M), which passes through the windsock at the centre of the field. The landing direction is determined by the first user of the day and is passed to Chetwynd Radio. Concurrent use of the 2 areas is normal and both areas are available for both into-wind and downwind operations. Chetwynd users make information RT calls on Chetwynd Radio and, when Tern Hill is open, Chetwynd Radio is monitored/manned by Tern Hill ATC. In July 2012 the number of aircraft permitted to operate in each area of Chetwynd whilst downwind operations were being conducted was reduced from 3 to 2. DHFS Squirrel HT1 aircraft are equipped with TAS. During this occurrence both pilots received a TAS indication of the other aircraft; however, the barrier of 'see and avoid' was already fully effective. When the converging flight path was realised an appropriate and non-aggressive profile was adopted to resolve the confliction. This incident was thoroughly investigated with several recommendations being presented, including holding a Continuous Improvement event to establish and implement the optimum method of conducting 2 area operations at Chetwynd. Furthermore, an additional recommendation was to establish and implement the minimum supervision requirement for multi-helicopter operations at Chetwynd. This incident highlights the importance of good lookout and of maintaining accurate SA.

Summary

An Airprox was reported when two Squirrel pilots flew into proximity at 1329 on Wednesday 22nd February at Chetwynd FLS. Both pilots were operating under VFR in VMC, both in receipt of a Basic Service from Chetwynd Radio.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of reports from both pilots, 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 commended the thorough and in-depth military investigation which identified the causal factors and undertook to recommend mitigations to systemic issues highlighted by the investigation. Some members were especially concerned by the apparent lack of supervision at the site, allowing solo students to operate in an environment which was considered by some to be potentially challenging even for fully qualified and experienced pilots. In particular, the fact that student pilots were conducting opposing direction patterns to the same field locations without any degree of supervision seemed fraught with risk to some non-rotary-wing members. However, helicopter and military members emphasised that solo students were carefully supervised at all points in their training and that careful assessment of individual ability allowed solo students then to practice their recently acquired skills in a challenging and at times difficult environment. Military members emphasised that this was an essential and necessary step in the students' training, in order for them then to meet the demands of operational military helicopter operations and that, notwithstanding the Occurrence Safety Investigation Report, such helicopter operations had been carried out safely at Chetwynd for many years. It was pointed out that the re-assessment of operations at Chetwynd had resulted in a suspension of student solo flying at the site until mitigations could be fully considered.

Turning to the pilots concerned, members agreed that at least one of the Squirrel pilots had operated slightly into Area Right rather than remain in Area Left. It was noted that although the flexibility of landing direction and lack of pre-defined markers allowed for operations into wind in any wind direction, it could also result in a lack of geographical definition as to the exact boundaries for each of the operating areas. It was not felt that this was necessarily undesirable, but that in this case it had probably resulted in Squirrel(B) pilot straying into Area Right and thence created confusion in the mind of Squirrel(A) pilot. In the event, the Squirrel(A) pilot had sensibly elected not to turn belly-up to the approaching Squirrel(B), which was not operating in accordance with his SA and expectations; erring on the side of caution, Squirrel(A) pilot eased left and continued his downwind track past Squirrel(B). Similarly, Squirrel(B) pilot was not sure of the intentions of Squirrel(A) pilot and elected to maintain a shallow nose-up attitude in order to maintain visual contact with Squirrel(A).

Noting the high degree of flexibility of operations at Chetwynd and the fact that helicopter pilots operating there regularly had to adjust their patterns to account for other aircraft, some members felt that the cause of the Airprox was that the Squirrel(A) pilot had simply been concerned by the proximity of Squirrel(B). However, the majority felt that this incident had been less benign than that, and that the cause had been that the Squirrel pilots had not integrated sufficiently with each other in the complex operating environment at Chetwynd. Notwithstanding, it was agreed by all that, although the event was not without risk, both pilots had been visual with each other's aircraft at an early stage and had taken timely and appropriate action to prevent a collision.

PART C: ASSESSMENT OF CAUSE, RISK AND SAFETY BARRIERS

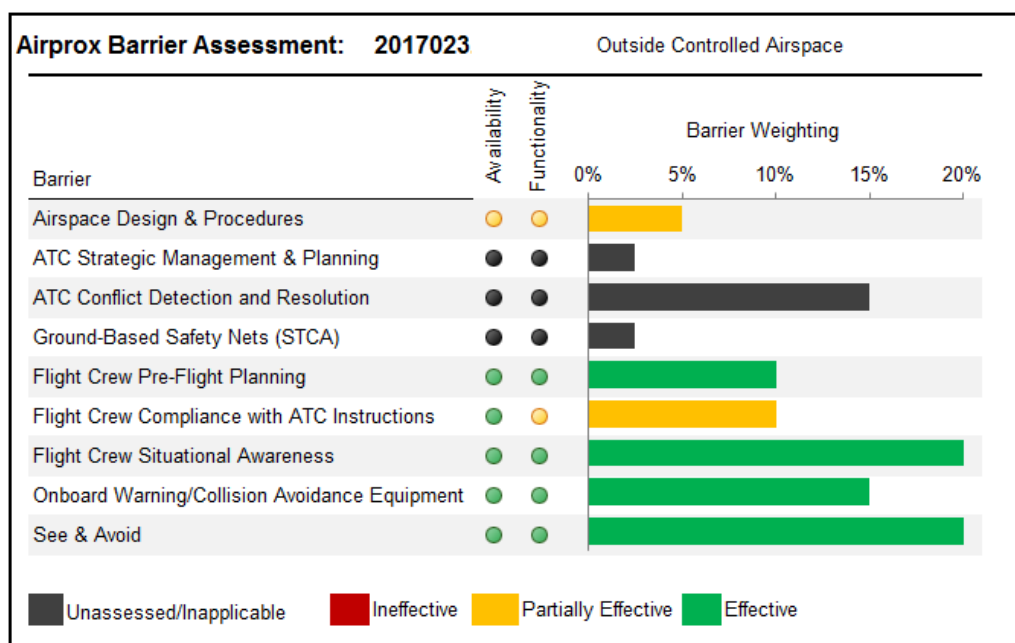
Cause: The Squirrel pilots did not integrate sufficiently with each other.

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:

- **Airspace Design & Procedures** was assessed as **partially effective** because the high levels of flexibility at Chetwynd allied to the minimal associated supervision of student operations meant that procedures had not been sufficiently robust to prevent conflict between the Squirrel pilots.
- **Flight Crew Compliance with ATC Instructions** was assessed as **partially effective** because the Squirrel pilots did not operate entirely in their allocated area, thereby creating confusion with each other.



⁴ The UK Airprox Board scheme for assessing the Availability, Functionality and Effectiveness of safety barriers can be found on the [UKAB Website](#).