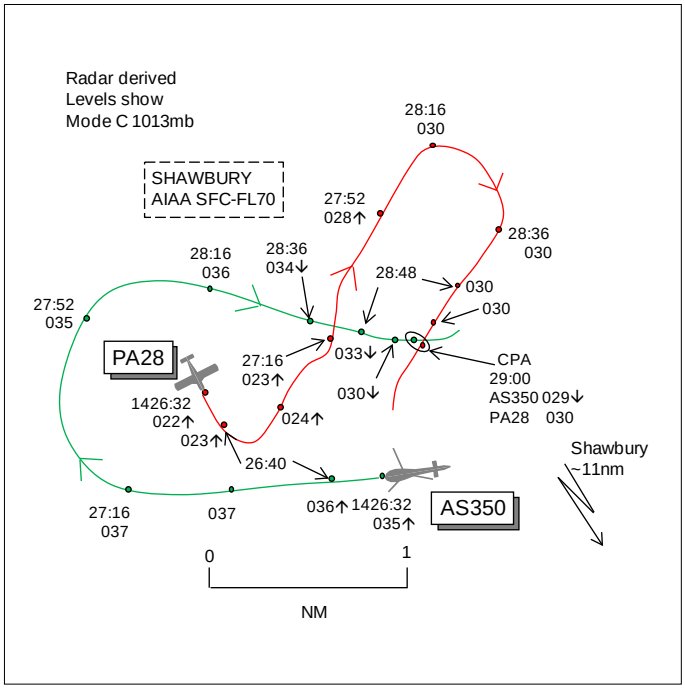
AIRPROX REPORT No 2011089

Date/Time:	22 Jul 2011 1429Z	
Position:	5257N 00252W (11nm NW Shawbury)	
Airspace:	Shawbury AIAA	(*Class: G*)
	Reporting Ac	*Reported Ac*
Type:	AS350	PA28
Operator:	HQ Air (Trg)	Civ Club
Alt/FL:	2800ft↓ RPS (1013mb)	3000ft QNH (1017mb)
Weather:	VMC CLBC	VMC CLOC
Visibility:	10km	>10km
Reported Separation:	Nil V/100m H	50ft V/100m H
Recorded Separation:	Nil V/0·1nm H	



PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

THE AS350 PILOT reports flying a dual Instrument Flying (IF) test from Shawbury in IF Box A and in receipt of a TS from Shawbury Approach on Stud 10, squawking 0233 with Mode C. The visibility was 10km clear of cloud in VMC and the helicopter was coloured black/yellow with HISLs, landing and position lights all switched on. The student was directed to carry out a PFL (autorotation) which was initiated at 3500ft RPS. They had been advised that a fixed-wing ac was in the vicinity and he, the QHI, was responsible for lookout and was seeking to establish visual contact. Heading 100° at 65kt descending through 2800ft RPS he spotted the fixed-wing ac in his 10 o'clock, slightly low and close. He took control and initiated avoiding action by turning L onto 070° and the fixed-wing ac, coloured white/orange/brown, was then seen to pass down their RHS by 100m at the same level. The fixed-wing ac's attitude was wings level suggesting they had not seen his helicopter. He assessed the risk as very high.

THE PA28 PILOT reports flying a dual flying instructor training sortie from Liverpool, VFR and in receipt of a BS from Liverpool Approach on 119·85MHz, squawking 0260 [Liverpool conspicuity code] with Mode C. The visibility was generally >10km flying clear of cloud in VMC and the ac was coloured white/red/orange with the red anti-collision light switched on. The student had received a demonstration of the exercise (engine failure - ex16) on an earlier flight and had given an appropriate ground briefing prior to this flight, including the importance of all airmanship aspects of the exercise. The student was searching for a sufficiently large clear area, level at 3000ft QNH 1017mb and 105kt from which he intended to simulate an engine failure and then practise the appropriate drills and patter. There was scattered Cu with base around 2500ft and usable gaps between. A lookout was being maintained by both crew members. A helicopter was seen to the E of their position initially at range 1nm some minutes before the incident and it appeared to be manoeuvring in and out of cloud but possibly intermittently passing behind the build-ups. The helicopter eventually disappeared from view, appearing to be on a steady SW'ly heading. However, shortly afterwards, it or a similar helicopter appeared from their 7 o'clock range 100m, already banking in a L turn presumably to avoid their ac with vertical separation of 50ft. The commander took control and turned the ac to the R but the conflict was effectively already resolved. While a lookout was being maintained to a good standard, the area behind the PA28 from approximately 5 o'clock to 7 o'clock is difficult to cover. While lookout ahead and to the sides was considered good, it appeared the combination of difficult rear vision and possibly a late sighting due to broken cloud may have been the cause. He assessed

the risk as high. An additional factor could have been his decision to remain with Liverpool Approach rather than Shawbury. Commonly, if intending to fly much further S, it was usual to request a BS from Shawbury; however, this flight was intended to remain close to the Liverpool/Manchester CTA and it was judged appropriate to remain with Liverpool. In the event the position used for the exercise was very slightly further S than planned due to the availability of suitable Wx. It was not possible to know if Shawbury would have been able to advise either pilot of the proximity of the other ac if they had contacted them or if they were able to advise the helicopter of their presence.

THE SHAWBURY APPROACH CONTROLLER reports his workload was light with 1 Griffin ac conducting a PAR on RW09 which then left the frequency and he was providing a TS to the AS350 which was conducting IF training to the NW of Shawbury. Conflicting traffic was seen and called numerous times. The closest the 2 ac came was 0·25nm and the same altitude, he thought. The AS350 pilot called visual and reported an Airprox. The conflicting traffic was displaying a Liverpool conspicuity squawk.

BM SAFETY MANAGEMENT reports that this Airprox occurred between a PA28 operating VFR in receipt of a BS from Liverpool Radar and a Squirrel (AS350) conducting an IF Test in receipt of a TS from Shawbury APP.

All heights stated are based upon SSR Mode C from the radar replay unless otherwise stated.

The AS350 pilot reports VMC with unlimited visibility in dust and SCT cloud at 3000ft and that they were 1000ft below and 10kms horizontally from cloud. The PA28 pilot reports VMC with in excess of 10kms visibility, which was obscured by cloud in certain directions and that they were 500ft above a BKN cumulus cloud base and 1nm horizontally from cloud.

Although not included within the AS350 pilot's report, the student would have been seated in the right-hand seat, with the instructor in the left.

At 1425:06 APP first passed TI to the AS350 on the PA28 stating, "*traffic north-west at three miles, manoeuvring, indicating six hundred feet below you*." This TI was re-stated at 1425:50 after the AS350 pilot asked APP to, "*say that again please,*" with the AS350 pilot acknowledging the TI by replying that they were, "*looking*."

The PA28 pilot reports that they initially sighted the AS350 at a range of approximately 1nm "some minutes before the incident" but that it "eventually disappeared from view [behind or within cloud] appearing to be on a steady SW heading." Based upon the radar evidence, this sighting is likely to have been at approximately 1426:32; the PA28 was on a SE'ly track indicating 2200ft, with the AS350 on a WSW'ly track, indicating 3500ft, with 1·1nm lateral separation existing.

At 1426:40, the PA28 commenced a turn onto a NE'ly track, climbing through 2300ft, with the AS350 maintaining its WSW'ly track, indicating 3600ft. At 1427:16 the AS350 commenced a relatively wide R turn, 1·4nm SW of the PA28.

At 1427:50, APP updated the TI to the AS350 flight on the PA28 stating, "*traffic update, the closest one is now east, two miles* (radar replay shows 1·6nm)*, manoeuvring nine hundred feet below you*", which is acknowledged by the AS350 pilot.

At 1428:16 the AS350 rolled out tracking ESE, indicating 3600ft, with the PA28 1·4nm NE indicating 3000ft and commencing a R turn. At approximately 1428:38, the AS350 commenced a descent, with SSR Mode C indicating 3400ft. APP then provides a further update to the TI at 1428:40 stating, "*the closest one now north-east, half a mile* (radar replay shows 0·9nm) *manoeuvring 400 feet below you*", which is also acknowledged by the AS350 pilot.

At approximately 1428:48, the PA28 rolled out of the R turn onto a SSW'ly track indicating 3000ft, 0·6nm NE of the AS350, which was descending through 3300ft.

Almost immediately, after the AS350 acknowledged the updated TI at 1428:40, APP provided a further update to the TI at 1428:53, stating, "*north-east, quarter of a mile* (radar replay shows 0·3nm)*, same height*." Co-incident with this updated TI, the avoiding action L turn reported by the AS350 pilot is evident on radar. The AS350 pilot replies to the updated TI at 1429:00 stating that, "*that will be an Airprox*."

The CPA occurred at 1429:00 with approximately 0·1nm lateral separation, with the next sweep of the radar indicating that the AS350 had descended a further 100ft. This accords with the AS350 pilot's estimation of minimum separation. Of note is the PA28 pilot's report that states that their next sighting of the AS350 was in their 7 o'clock. Consequently, having lost sight of the AS350 shortly after 1426:30, they did not regain sight of it until after the Airprox had occurred.

From an ATM perspective, APP provided a good level of TI to the AS350 and should be commended for continuing to provide TI. As suggested by the PA28 pilot, cloud formations in the area of the occurrence may have played a part in the late and non-sighting respectively by the AS350 and PA28 pilots; however, the TI provided to the AS350 pilot should have enabled them to visually acquire the PA28 early enough to discharge their responsibilities for collision avoidance, or to have considered seeking deconfliction advice. The fact that it did not adds further support to a trend identified by RAF FS and BM SM that may require further investigation from CFS and HQ 22(Trg) Gp.

ATSI reports that the Airprox occurred at 1429:00 UTC, 11·1nm NW of RAF Shawbury, and 23·8nm S of Liverpool airport, within Class G airspace.

The PA28 was a training flight operating VFR from Liverpool Airport and in receipt of a BS from Liverpool Radar.

The AS350 was operating on an IF test and in receipt of a TS from Shawbury Approach.

CAA ATSI had access to RT and area radar recordings, together with the written report from both pilots.

METAR: EGGP 221350Z VRB03KT 9999 VCSH SCT027 16/11 Q1017=

The PA28 flight contacted Liverpool Radar at 1334:44 and was instructed to report at Chester, which lies just to the S of the Liverpool CTR.

At 1337:51 the PA28 pilot reported overhead Chester and the controller responded, *"(PA28 c/s) thank you leaving controlled airspace it's a Basic Service.*" The PA28 pilot acknowledged, *"Basic Service outside controlled airspace (PA28 c/s).*"

At 1415:10, the radar recording shows the PA28 tracking S at a position 11·8nm NW of Shawbury, with the AS350 also manoeuvring in the area. Both ac are indicating FL026.

At 1426:48, the radar recording shows the 2 ac passing abeam at a range of 0·3nm, at a position, 11·4nm NW of Shawbury. The PA28 was indicating FL023 and the AS350, indicating FL036. The 2 ac continued to manoeuvre in the area.

Two minutes later, at 1428:49, the radar recording shows the 2 ac converging at a range of 0·6nm, with the AS350 tracking E, indicating FL033 and the PA28 tracking SW indicating FL030.

At 1428:52, the radar recordings show that the AS350 has started a descent and passing FL032.

At 1429:00, the CPA, the radar recording shows the AS350 tracking E descending through FL029 (2981ft QNH 1016mb, 1mb equates to 27ft), with the PA28 level at FL030 (3018ft QNH) passing through the AS350's 1230 position at a range of 0·1nm, crossing from L to R. This was considered to be the reported Airprox at a position, 11·1nm NW of Shawbury.

Later, at 1436:18, the PA28 pilot reported, *"....P A thir-er twenty eight out of Liverpool returning to Liverpool we have Zulu although we copy you may be changing to zero nine er therefore request join Chester VFR."* The controller cleared the PA28 flight to join CAS at Chester not above 1500ft VFR, QNH 1017. This was acknowledged correctly by the PA28 pilot.

At 1441:00, the Liverpool controller advised, *"and (PA28 c/s) er just had a message from Shawbury er th t eh um not sure what they were talking about but are you filing an Airprox."* The PA28 pilot replied, *"er negative."* The PA28 continued to Liverpool without further incident.

The PA28 pilot's written report indicated that he had intended to remain relatively close to the Liverpool/Manchester CTA, but due to Wx was further S than planned. The PA28 was operating in an area 11nm to the NW of Shawbury and in receipt of a BS from Liverpool Radar. CAP 774, UK Flight Information Services, Chapter 2, Page 1. Paragraphs 1 & 5, states:

> 'A Basic Service is an ATS provided for the purpose of giving advice and information useful for the safe and efficient conduct of flights. This may include weather information, changes of serviceability of facilities, conditions at aerodromes, general airspace activity information, and any other information likely to affect safety. The avoidance of other traffic is solely the pilot's responsibility.'
>
> 'Pilots should not expect any form of traffic information from a controller, as there is no such obligation placed on the controller under a Basic Service outside an Aerodrome Traffic Zone (ATZ), and the pilot remains responsible for collision avoidance at all times. However, on initial contact the controller may provide traffic information in general terms to assist with the pilot's situational awareness. This will not normally be updated by the controller unless the situation has changed markedly, or the pilot requests an update. A controller with access to surveillance derived information shall avoid the routine provision of traffic information on specific aircraft, and a pilot who considers that he requires such a regular flow of specific traffic information shall request a Traffic Service. However, if a controller considers that a definite risk of collision exists, a warning may be issued to the pilot.'

The Airprox occurred when the PA28 and AS350 helicopter came into close proximity whilst operating in Class G airspace. The PA28 was in receipt of a BS from Liverpool Radar. Under a BS there is no obligation placed upon the controller to provide TI.

HQ AIR (TRG) comments that the AS350 crew's use of the TI provided was not effective and the matter will be addressed in RAF Flight Safety publications. A review of the IF area may be needed to see if traffic patterns have changed significantly. That the PA28 pilot did not consider a TS from Shawbury in what is a busy operating area for the military is also of concern.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available included reports from the pilots of both ac, transcripts of the relevant RT frequencies, radar video recordings, reports from the air traffic controllers involved and reports from the appropriate ATC and operating authorities.

Within the Shawbury AIAA Class G airspace, pilots are responsible for maintaining their own separation from other ac through see and avoid. Wx appears to have played a part in this incident as the PA28 pilots had previously seen the AS350 but had lost sight of it, only regaining visual contact with the helicopter as it was passing behind at the CPA, effectively a non-sighting and a part cause of the Airprox. As broached by the PA28 crew in their report, with hindsight a call to Shawbury for a service (a TS would have been pertinent with the cloud structure that pertained) would probably elicited information on the manoeuvring AS350 and improved their SA. The AS350 instructor, who was responsible for lookout as his student was under an IF hood, appeared to have not assimilated the potential confliction after being given timely and accurate TI by Shawbury on several occasions and had commenced the autorotation without visually acquiring the conflicting PA28 as it approached

from his L. Although the AS350 had right of way under the RoA Regulations, the rules only are effective if both crews can see each other and act appropriately. The AS350 instructor saw the PA28 only about 0·25nm away, which Members agreed had been a late sighting and the other part cause. The actions taken by the AS350 instructor in taking control and turning L to avoid the PA28 were judged to have been just enough to prevent an actual collision; however, the ac had passed in such close proximity, unsighted by one of the crews, which was enough to persuade the Board that safety had been compromised during this encounter.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: Effectively a non-sighting by the PA28 crew and a late sighting by the AS350 instructor.

Degree of Risk: B.