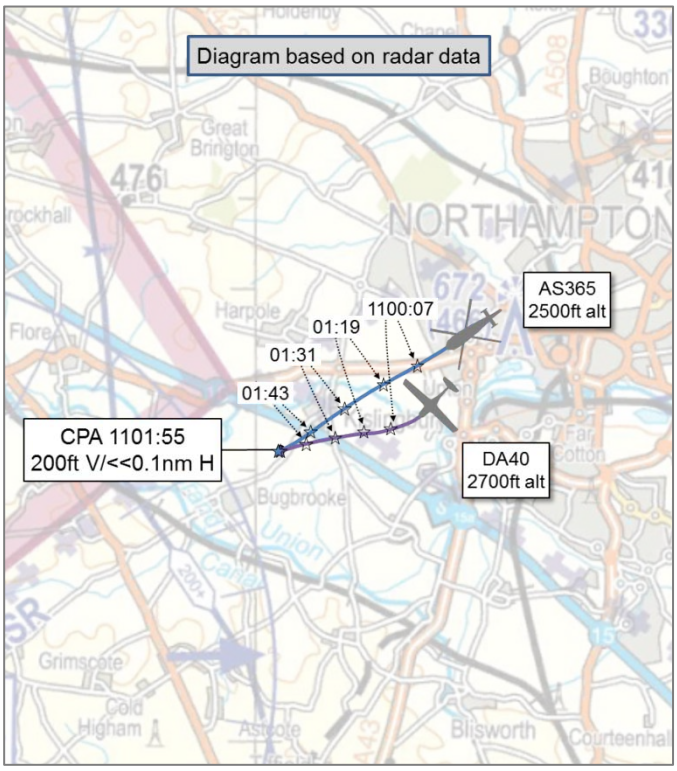
AIRPROX REPORT No 2014224

Date/Time: 5 Dec 2014 1102Z

Position: 5213N 00059W (9.1nm SW Sywell)

Airspace: London FIR (*Class*: G)

	Aircraft 1	*Aircraft 2*
Type:	AS365	DA40
Operator:	Civ Comm	Civ Trg
Alt/FL:	2000ft QNH	2800ft QNH (1019hPa)
Conditions:	IMC	VMC
Visibility:	Nil	>10km
Reported Separation:	100ft V/30m H	300ft V/0.25nm H
Recorded Separation:	200ft V/<0.1nm H	



PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

THE AS365 DAUPHIN PILOT reports that his helicopter was coloured dark blue; HISLs, position, anti-collision and landing lights were illuminated; SSR Mode C was selected, Mode S was not fitted; it was not equipped with an ACAS or TAS. He was operating an IFR flight outbound from Sywell in IMC. He was climbing his aircraft through cloud due to the fact that the weather at low-level precluded a safe VFR transit and, because his track passed close to the Oxford Instrument Approach Lanes, and being aware of the likely volume of training aircraft, a Basic Service was requested from Oxford Approach [he subsequently informed UKAB that, not being a local pilot, he had not been aware that Oxford had recently acquired a radar and could therefore offer more than a Basic Service]. He thought that the nearest Radar was Brize Norton (over 35nm away) and they were to be his next frequency once clear of any potential Oxford traffic. As his aircraft approached the top of the cloud (2000' QNH) several gaps appeared and the crew maintained a good lookout. During the look-out scan an aircraft was identified closing from the left, 100m away, just above and appearing to be hugging the cloud tops. An immediate descent was initiated, with a turn to the left ensuring the identified aircraft remained visual until they descended back into cloud. An Airprox was reported to Oxford Approach after which they resumed their initial track and climbed to establish VMC at 2500ft QNH.

He assessed the risk of collision as 'High'.

THE DIAMOND DA40 PILOT reports that the aircraft was coloured white with grey stripes; Strobe and navigation lights were illuminated; SSR Modes C and S were selected; ACAS was not fitted. He was on an IFR flight in receipt of a reduced Traffic Service from Coventry radar in VMC. He was instructing a student on holding procedures and using the radio mast to the north of Northampton Town as an NDB. He was flying in and out of cloud at, he believed, 2800ft in level flight (although he was not 100% sure of his altitude). He was using the radio mast as if it was the Cranfield hold axis of 213°. Having just turned back inbound to the beacon, he noticed the rotor blades of a large helicopter about 300ft below and 0.25nm away to the left of his aircraft. He had been given Traffic Information on this aircraft travelling west, level at around 700ft below, and he was VMC above cloud at the time. He did not believe that the helicopter pilot was on the frequency, and appeared to be in IMC as only the blades were seen; the rest of the helicopter was in cloud.

He assessed the risk of collision as 'Medium'.

THE COVENTRY APPROACH RADAR CONTROLLER reports taking over his position at approximately 1100. At the time, the DA40 pilot was in receipt of a reduced Traffic Service [reduced, he subsequently reported to UKAB, owing to the nature of the flight and past experience of irregular changes in headings and levels which were not reported by pilots]. Potential conflicting traffic squawking 7000 had been called twice to the DA40 pilot. At the same time, a telephone call was received from East Midlands ATC regarding a transiting aircraft (not involved in the Airprox) whose pilot was also requesting a Traffic Service and who contacted the controller once he had carried out identification procedures. Once this was completed, further Traffic Information on the unknown aircraft was passed to the DA40 pilot, but the SSR labels were garbled, and it was difficult to give an accurate level. The pilot of the DA40 did not indicate that he wished to file an Airprox report. Subsequently, a telephone call was received from Oxford ATC asking for details about the DA40, because the pilot of the unknown aircraft had contacted them and stated that he wished to file an Airprox.

THE OXFORD APPROACH RADAR CONTROLLER reports that he was the On the Job Training Instructor (OJTI) supervising a low-hour trainee; as far as he remembered they had been quite busy. The AS365 pilot called on the frequency and requested a Basic Service He was transiting from north-east to west well north of Oxford. He reported that he was south-west of Daventry at 2500ft. He was issued a 4520 squawk and given a Basic Service. After a few minutes the pilot asked if he could file an Airprox. The trainee asked the AS365 pilot to pass the details; he reported a small single-engine low-wing aircraft passed just above him. He looked at the radar screen and saw a Coventry squawk in his vicinity. He called Coventry on the Air Traffic Operational Telephone Network (ATOTN) line and asked for Traffic Information. The Coventry controller reported working a DA40 adding that Traffic Information about the AS365 had been issued to the pilot. The DA40 was reported as General Handling and, at the time of looking at his display, the SSR Mode C, as he recollected, was showing 2700ft. The AS365 pilot descended and subsequently climbed again to 2500ft. The pilot of the AS365 also reported the aircraft as a Cherokee.

Factual Background

The Oxford and Coventry weather was recorded as follows:

```
METAR EGTK  051050Z 28008KT 9000 BKN015 BKN029 05/04 Q1019=
METAR EGBE  051050Z 29005KT 240V330 7000 FEW012 BKN032 05/04 Q1019=
```

Analysis and Investigation

CAA ATSI

The CAA ATSI had access to Coventry and Oxford RTF recordings, together with area radar recordings and the written reports from both pilots and both controllers. The Airprox occurred at 1102, 9.1nm south-west of Northampton Sywell Airport within Class G uncontrolled airspace, between an AS365 and a DA40. The AS365 pilot was operating under IFR on a flight from Northampton Sywell airport to a private site in Cornwall, and was in receipt of a Basic Service from Oxford Approach. The DA40 pilot was operating an IFR training flight and was in receipt of a Traffic Service from Coventry Radar.

The Oxford controller was operating as Oxford Approach Radar and training was being provided on the position with a trainee and an OJTI. The Coventry controller was operating as Coventry Approach Radar, and had just taken over the position.

At 0947:10, the DA40 pilot contacted Coventry Radar and a Basic Service was agreed. Subsequently, at 1017:00, the DA40 pilot requested a Traffic Service. Once identified, a reduced Traffic Service was agreed. The DA40 pilot reported at 2700ft on QNH 1019hPa.

At 1033:40 Coventry Radar passed Traffic Information to the DA40 pilot regarding an aircraft operating in the vicinity of Sywell. At 1047:20 Coventry Radar passed Traffic Information to the DA40 pilot on 'pop-up' intermittent traffic.

At 1057:50 Coventry Radar advised "(DA40 C/S) *pop up traffic right er about one o'clock two miles no height information possibly out of Sywell"* which was acknowledged by the DA40 pilot. This was the AS365 which, at 1058:03, started to show on the area radar recording. The AS365 was just to the south-west of Sywell at 1100ft with the DA40 indicating an altitude of 2700ft at a horizontal distance of 2.9nm. (Figure 1.)

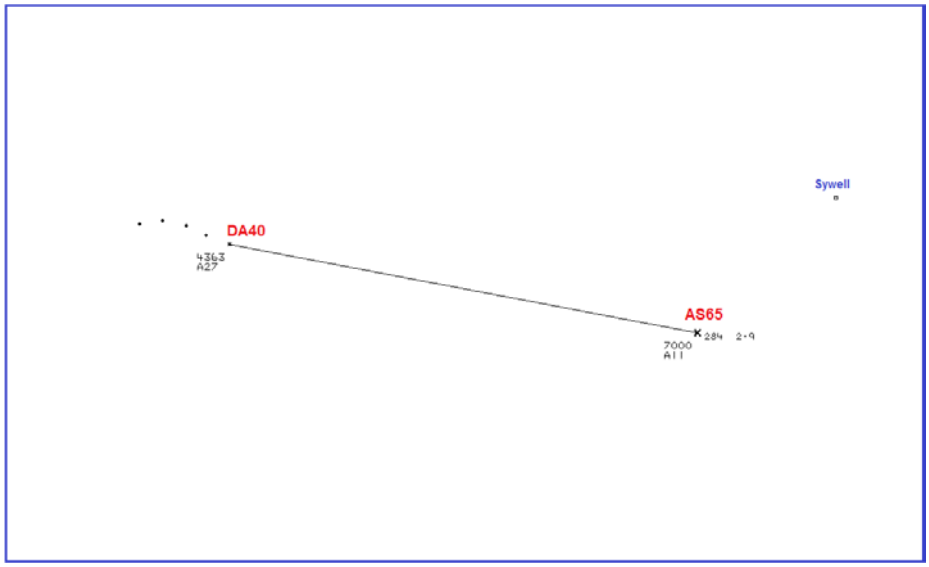


Figure 1 – Swanwick MRT at 1058:03

At 1059:39 the Coventry controller updated the Traffic Information "(DA40 C/S) *as you manoeuvre there is traffic east of you by two miles now, it's a previously mentioned traffic now indicating altitude two thousand two hundred feet climbing"* which was acknowledged by the DA40 pilot. (Figure 2.)

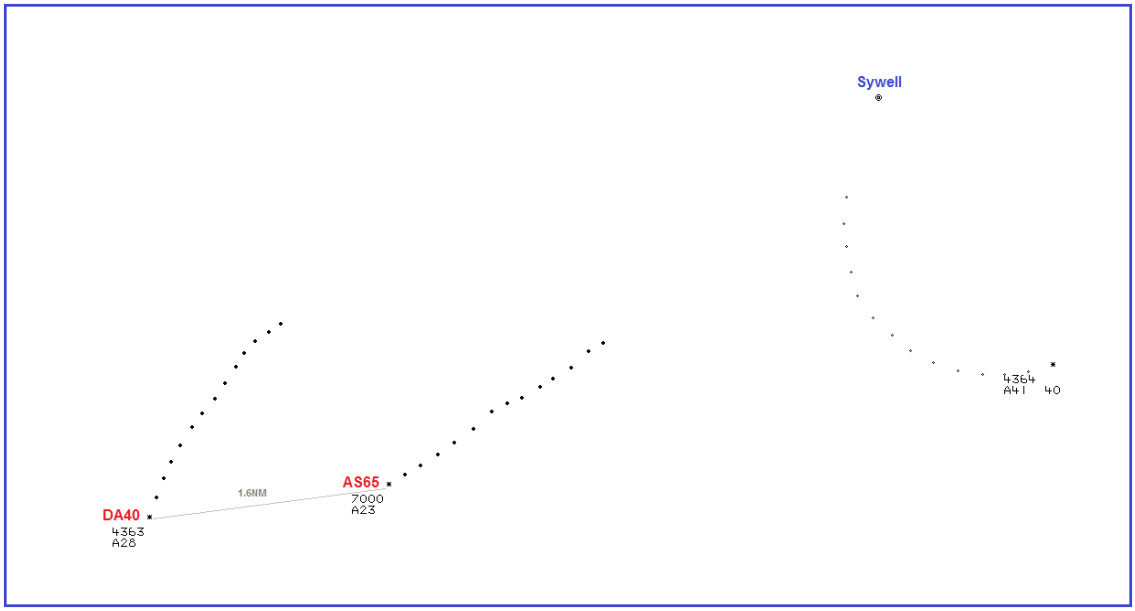


Figure 2 – Swanwick MRT at 1059:39

The AS365 pilot contacted Oxford at 1100:10 *"Oxford Approach it's* (AS365 C/S) *good morning for a Basic Service."* A Basic service was agreed and the AS365 pilot was instructed to squawk 4520, which is an Oxford conspicuity code allocated to aircraft in receipt of a Basic Service. The AS365 pilot reported 28nm north-east of Oxford at 2500ft.

The Coventry Radar position was handed over, and the oncoming controller was involved in a radar handover from East Midlands Radar. At 1100:40 the new Coventry controller was involved in transmitting to and identifying the aircraft which had been handed over.

At 1100:45 the AS365 passed 0.9nm behind the DA40 as the two aircraft tracked south-west. (Figure 3.)

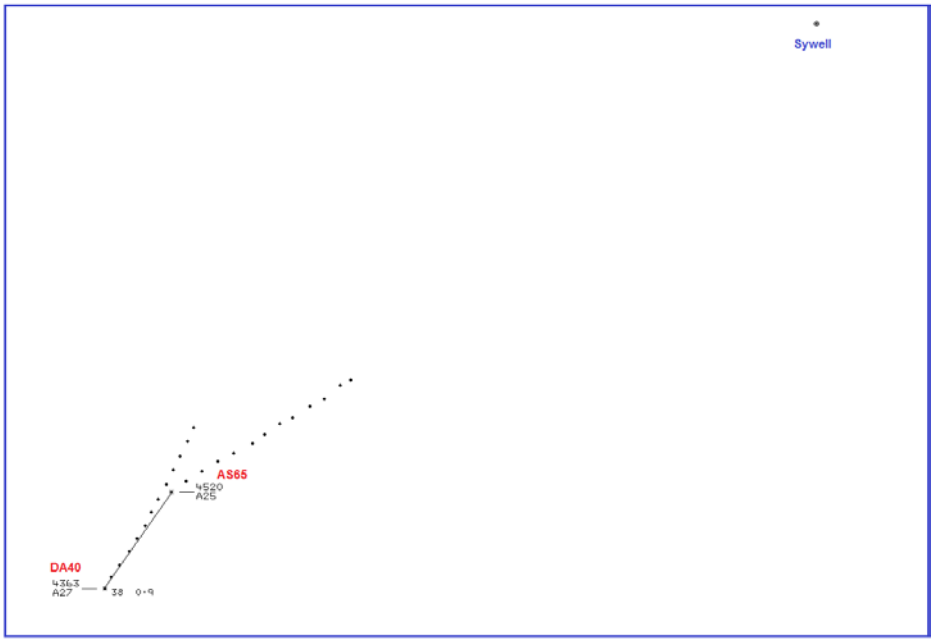


Figure 3 – Swanwick MRT at 1100:45

At 1101:13 the DA40 pilot had commenced a right turn. The horizontal distance between the two aircraft was now 0.7nm, and the vertical distance was 200ft. (Figure 4.)

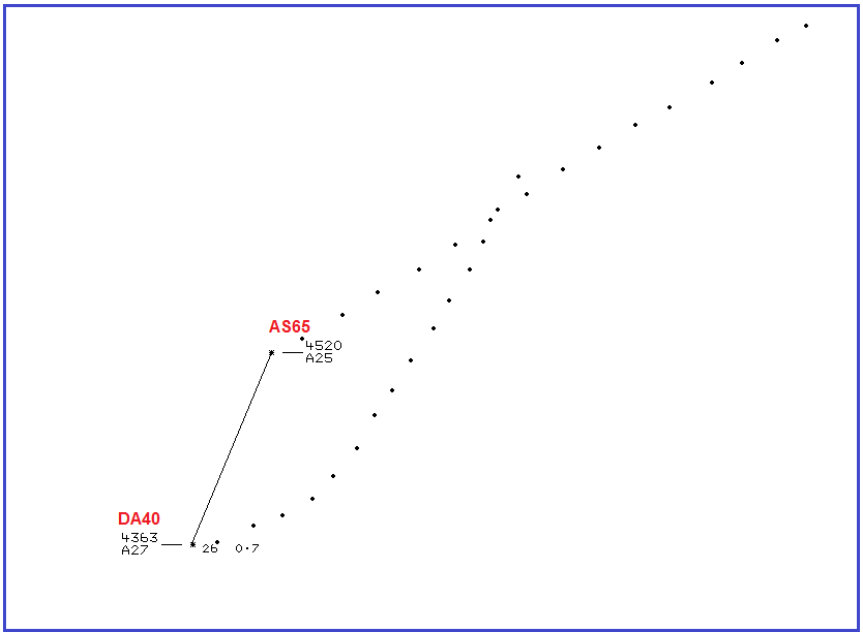


Figure 4 – Swanwick MRT at 1101:13

At 1101:20 the Coventry controller was involved in a transmission with a pilot (not involved) concerning a request for Traffic Information. This message was unclear and the controller asked the pilot to say again.

Meanwhile, the AS365 and DA40 continued to converge and, at 1101:37, the horizontal distance had reduced to 0.3nm. (Figure 5.)

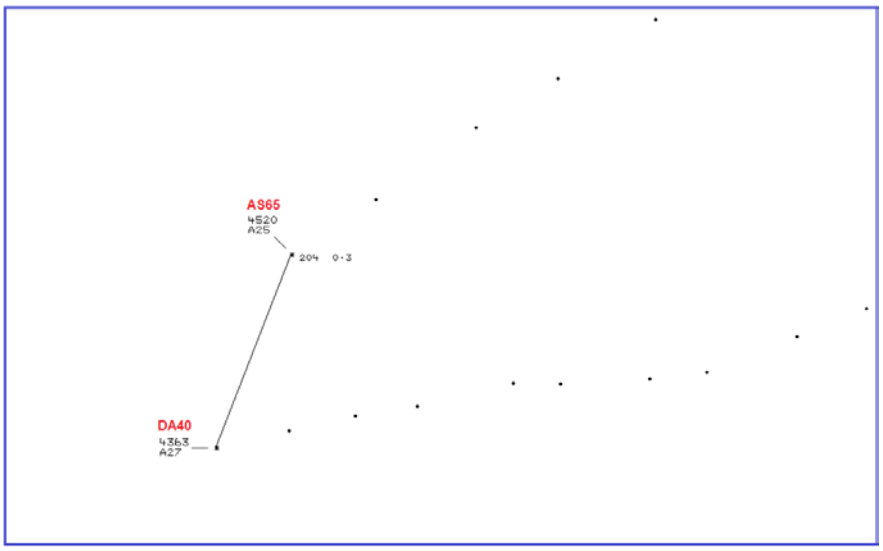


Figure 5 – Swanwick MRT at 1101:37

At 1101:45 the controller confirmed that the transit aircraft was identified. At 1101:51 the horizontal distance between the AS365 and DA40 was less than 0.1nm and the vertical distance was 200ft. (Figure 6.)

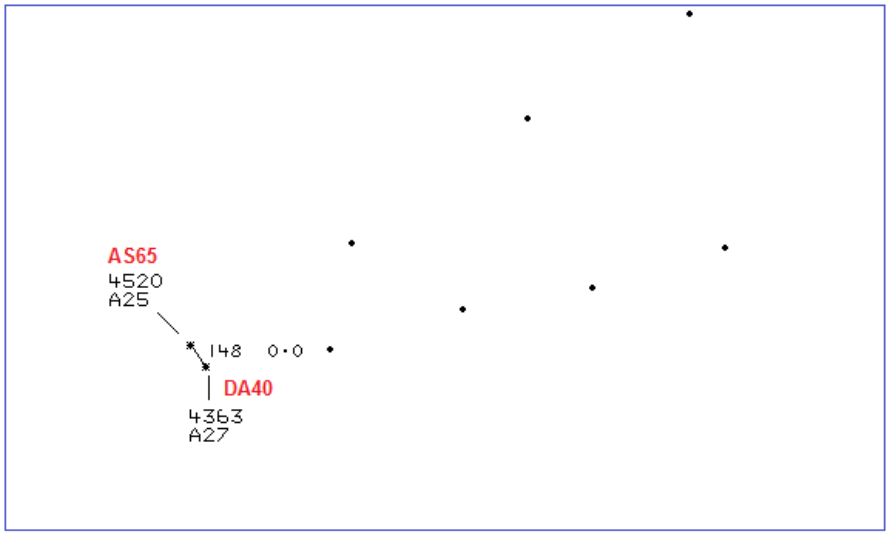


Figure 5 – Swanwick MRT at 1101:51

At 1101:51 both Coventry and Oxford were involved in RTF exchanges:

Coventry

Coventry	"(DA40 C/S) *that previously mentioned traffic is er now continuing on a southwesterly track and er indicating er two thousand feet".*
DA40	*"(*DA40 C/S) *we just spotted him er he was less th- he was about one hundred feet away from us".*

Oxford

AS365	*"And er* (AS365 C/S) *can I just declare an Airprox please".*
Oxford	*"Affirm pass your [1102:00] details".*
AS365	*"Yeah* (AS365 C/S) *er just about three miles west of er Northampton just had an Airprox with er what looked to be a single engine fixed wing".*

The Coventry controller's written report indicated that, as soon as the transit aircraft had been identified, the Traffic Information to the DA40 pilot had been updated. However, the controller noted that the SSR labels were overlapping (garbled), and it was difficult to give an accurate level on the other traffic.

CPA was estimated to have occurred at 1101:52 between radar updates as the tracks of the two aircraft crossed, with the AS365 indicating 200ft below the DA40. The next radar update shows that the two aircraft had passed. The groundspeed of the AS365 was indicating 132kt and the DA40 94kt. (Figure 6.)

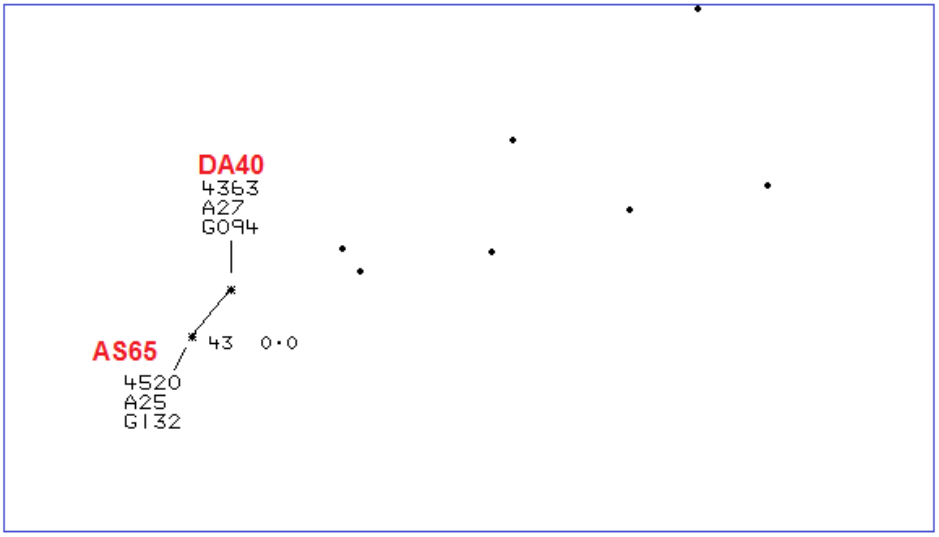


Figure 6 – Swanwick MRT at 1101:51

The two aircraft continued to diverge and the AS365 pilot descended to 2000ft. The Coventry controller asked the DA40 pilot to confirm his level and the DA40 pilot responded *"Affirm two thousand seven hundred feet just above the cloud [1102:40] ????? we just spotted him he was less than a hundred feet away."*

The Oxford controller asked the AS365 pilot to confirm the approximate range and level of the other aircraft. The AS365 pilot replied *"Er* (AS365 C/S *assess the aircraft was er [1102:50] possibly I- as little as fifty feet above us and it flew directly over the top of us erm an er we were VFR but er yeah it was just very close".*

Just prior to the Airprox the AS365 pilot had called Oxford Approach requesting a Basic Service. The controller had issued a conspicuity squawk to the AS365 pilot and it was unlikely that the controller would have had time to assimilate the position of the AS365 and any potential conflict. Under a Basic Service the controller is not required to monitor the flight and the avoidance of other traffic is solely the pilot's responsibility:[1]

> '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.
>
> Basic Service relies on the pilot avoiding other traffic, unaided by controllers. It is essential that a pilot receiving this ATS remains alert to the fact that, unlike a Traffic Service and a Deconfliction Service, the provider of a Basic Service is not required to monitor the flight.'

[1] CAP774 (UK Flight Information Services) Chapter 2, Paragraph 2.1.

The DA40 pilot was operating an IFR training flight and was in receipt of a reduced Traffic Service from Coventry Radar where the pilot remains responsible for collision avoidance:[2]

> 'A Traffic Service is a surveillance based ATS, where in addition to the provisions of a Basic Service, the controller provides specific surveillance-derived traffic information to assist the pilot in avoiding other traffic. Controllers may provide headings and/or levels for the purposes of positioning and/or sequencing; however, the controller is not required to achieve deconfliction minima, and the pilot remains responsible for collision avoidance.'
>
> 'The controller shall pass traffic information on relevant traffic, and shall update the traffic information if it continues to constitute a definite hazard, or if requested by the pilot. However, high controller workload and RTF loading may reduce the ability of the controller to pass traffic information, and the timeliness of such information.'

The Coventry controller had just taken over the Radar position and reported that the DA40 pilot had been passed Traffic Information twice regarding the unknown 7000 squawk [AS365] in the vicinity of Sywell. However, the Coventry controller had then become involved in a handover and identification of a transit aircraft with East Midlands Radar. Once this was complete the controller passed further Traffic Information to the DA40 pilot. However, by this time the SSR labels had merged as the two aircraft came into proximity[3].

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[4]. Under the newly introduced SERA, it is considered that the AS365 was overtaking the DA40; therefore, the DA40 pilot had right of way, and the AS365 pilot was required to give way by altering his heading to the right[5].

Summary

The Airprox occurred in Class G uncontrolled airspace between an AS365 (whose pilot was operating IFR in receipt of a Basic Service from Oxford), and a DA40 (whose pilot was operating IFR in receipt of a reduced Traffic Service from Coventry). The AS365 pilot had requested a Basic Service just prior to the Airprox, and the Oxford controller was not required to monitor the flight. The Coventry Radar controller provided Traffic Information twice to the DA40 pilot regarding the AS365. The Coventry controller then became involved in a radar handover, and subsequently updated the Traffic Information to the DA40 pilot as the two aircraft came into proximity. The AS365 pilot reported seeing the DA40 closing from the left, 100m away just above. He carried out an immediate descent and a left turn. The DA40 pilot reported that he noticed the rotor blades of a large helicopter about 300ft below and 0.25nm away to the left of his aircraft. Both pilots were responsible for their own collision avoidance. The CPA was 200ft vertically and less than 0.1nm horizontally.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available included reports from both pilots and controllers concerned, area radar and RTF recordings and reports from the appropriate ATC and operating authorities.

The Board first discussed the actions of the AS365 pilot. The Board noted that the pilot had subsequently reported that he had requested only a Basic Service because he did not think that Oxford ATC had radar and would therefore be unable to provide him with a Traffic Service. Not now being a local pilot, but having previously flown in this area when Oxford previously did not have a radar, it was noted that this flawed mental model had influenced his decision-making, and was perhaps indicative of limited pre-flight planning. Furthermore, bearing in mind that the helicopter was

[2] CAP774 Chapter 3, Paragraph 3.1.
[3] CAP774 Chapter 3, Paragraph 3.5.
[4] Standardised European Rules of the Air Regulations 2014 SERA.3205 Proximity.
[5] ibid., SERA.3210 Right-of-Way (3) Overtaking.

climbing IMC through cloud, the Board were surprised that the pilot had not requested a Traffic Service from the relevant LARS. The Board opined that this would certainly have been a prudent action, especially because the helicopter was not equipped with an ACAS or TAS and, without such equipment or a radar service whilst climbing through cloud, the pilot would not be able to discharge his responsibility should he need to avoid other traffic.

The Board then considered the actions of the DA40 pilot. Members were pleased to note that the pilot had been in receipt of a Traffic Service from Coventry, albeit reduced to a limited service by the Coventry controller due to intermittent contact. The Board discussed whether the DA40 pilot would have been better served by conducting his flight further above the cloud layer rather than operating in and out of cloud, as the 'see-and-avoid' principle still applied. The area in which he had been operating had Controlled Airspace base at 4500ft to the north, 5500ft overhead and FL65 to the south. The Board considered that he could have climbed to explore possible better VFR conditions or to enable constant radar contact and hence a full Traffic Service. [UKAB Note: In post-Board discussion with the DA40 pilot it became apparent that he had been given Traffic Information on "… *traffic operating in the vicinity of Sywell, altitude four thousand feet*" and that he had remained at 2700ft to ensure deconfliction. He stated that he normally operated at 4-5000ft when practising holding in that area.] In the event, he had been issued Traffic Information on the AS365 by Coventry but the Board noted he had not taken action to avoid the reported traffic.

The Board turned to the cause of the Airprox and wondered whether initially it had possibly occurred simply because of a conflict in Class G. However, after further discussion, because both pilots had seen the other aircraft (even though it was very late), the cause was considered to be better expressed as a late sighting by both pilots. There were considered to be two contributory factors, both relating to the pilots' actions: the AS365 pilot had chosen to fly in IMC without a Radar Service, and the DA40 pilot had not acted on the Traffic Information he had received.

The Board then turned its attention to the risk. Although it was apparent that the two aircraft were very close to each other before visual contact had been gained, the AS365 pilot had taken avoiding action as soon as he had seen the DA40. The AS365 pilot's actions had prevented a collision, but the Board opined that, even so, safety margins had been much reduced below the normal. Consequently the Airprox was categorised as risk Category B.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: A late sighting by both pilots.

Contributory Factors: 1. The AS365 pilot chose to fly in IMC without a Radar Service.

2. The DA40 pilot did not act on the Traffic Information.

Degree of Risk: B.

ERC Score[6]: 20.

[6] 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.