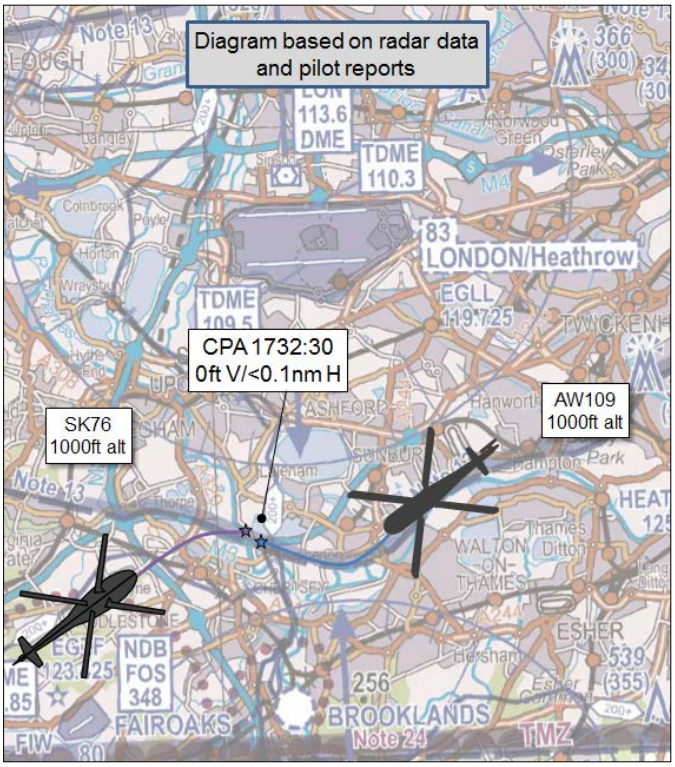
AIRPROX REPORT No 2017064

Date: 12 Apr 2017 Time: 1732Z Position: 5123N 00028W Location: Heli-route 3

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	AW109	SK76
Operator	Civ Comm	Civ Comm
Airspace	London CTR	London CTR
Class	D	D
Rules	VFR	VFR
Service	Radar Control	Radar Control
Provider	Swanwick	Swanwick
Altitude/FL	1000ft	1000ft
Transponder	A, C, S	A, C, S
Reported		
Colours	Blue, Silver	Company
Lighting	Landing, Strobes, Beacon	Anti-cols, strobes, Nav,
Conditions	VMC	VMC
Visibility	10km	>10km
Altitude/FL	1000ft	1000ft
Altimeter	QNH (1016hPa)	QNH (1016hPa)
Heading	280°	100°
Speed	140kt	130kt
ACAS/TAS	TAS	TCAS I
Alert	TA	TA
Separation		
Reported	0ft V/200m H	0ft V/150ft H
Recorded	0ft V/<0.1nm H	



THE AW109 PILOT reports that he was westbound on heli-route H3 between Sunbury and Thorpe. The radar controller gave Traffic Information on two aircraft, one was below and right and no conflict, the other was a SK76 routing along H3 in the opposite direction. He saw the SK76 at the same level south west of Thorpe, and it looked to be routing towards Thorpe to pick up the H3. ATC notified both the AW109 pilot and the SK76 about each other. The AW109 pilot manoeuvred to position on the right-hand-side of H3 going west in order to pass port to port, obeying the right-hand rule.[1] He anticipated that the SK76 would join H3 after Thorpe and turn right to position on the right-hand side of H3 going eastbound. However, after keeping him in view he realised the SK76 pilot was not turning to position for the right-hand rule. The closing speed was about 290kts, and he kept his aircraft straight and level, but thought that the two aircraft were too close for comfort and had to bank hard left to avoid being very close. He made his views known over the radio. The SK76 did not deviate at any stage and was well north of H3, he appeared to be following the M3.

He assessed the risk of collision as 'Medium'.

THE SK76 PILOT reports that, having been cleared to join H3 at Sunbury Lock, he was advised of a westbound AW109 approaching Sunbury Lock. To ease visual acquisition he elected to join H3 in the vicinity of Weybridge. After seeing the AW109 established on H3, in his 1 o'clock at approx 1nm, he called visual on the radio. He felt the safest course of action was not to cut across the other aircraft's track, but rather to stand on and prepare to take avoiding action by breaking left should there be a risk of collision. In the event, he did not feel that there was any risk of collision. He opined that perhaps the AW109 pilot had not seen him until the last moment and was therefore startled to see him, certainly the AW109 pilot instigated a left break and expressed his concern over the RT. He

[1] UK AIP AD EGLL AD 2.22 para 9(b)(v), 2.EGLL-32, dated 8 Dec 2016 - in order to obtain sufficient lateral separation from opposite direction traffic on heli-routes, pilots may temporarily deviate to the right of the route.

briefly replied that he had not wanted to cut across his bows, his reasoning behind this was that it would have been more hazardous at an estimated closing speed of 250kts.

He assessed the risk of collision as 'None'.

THE SWANWICK TC CONTROLLER reports that the AW109 had been cleared to leave the London CTR via H3 at standard operating altitudes. The SK76 had been cleared in the opposite direction not above 1200ft, standard operating altitude. The controller passed Traffic Information to the AW109 pilot on other traffic, however he didn't respond. He then passed initial Traffic Information to the SK76 pilot to check that his radio was working correctly. The SK76 pilot acknowledged the Traffic Information on the unrelated traffic and on the AW109. He went back to the AW109 pilot and this time he responded to the Traffic Information on the SK76 and the other traffic. The AW109 pilot reported visual with the SK76 at the same time as another aircraft checked in on frequency; however, the controller heard the call and, shortly afterwards, the SK76 pilot also called visual with the AW109. Because the two pilots had called visual with each other the controller decided not to update the Traffic Information. He then heard on frequency someone transmit 'try the right-hand rule idiot', he assumed it to be from the SK76 pilot, and the other pilot apologised over the RT but said he had not wanted to cross the SK76's bow. There was no further incident between the two pilots.

Factual Background

The weather at Heathrow was recorded as follows:

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METAR COR EGLL 121720Z AUTO 28012KT 9999 OVC042 15/06 Q1016 NOSIG=
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The London Helicopter routes are depicted below:

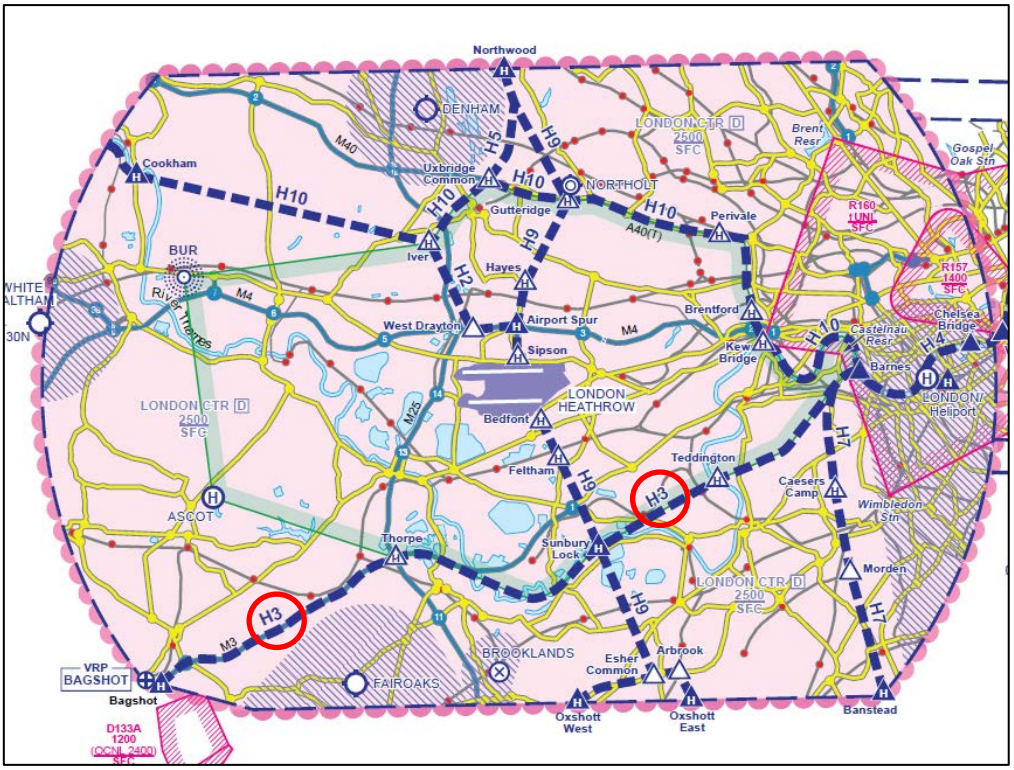


Figure 1 London Heli-Routes (H3 ringed)

Pilots should fly the precise routes as depicted on the 1: 50 000 Map entitled Helicopter Routes in the London Control Zone. 'Corner cutting' is to be avoided. In order to obtain sufficient lateral separation from opposite direction traffic, pilots may temporarily deviate to the right of the route[2].

[2] UK AIP AD EGLL AD 2.22 para 9(b)(v), 2.EGLL-32, dated 8 Dec 2016

Analysis and Investigation

CAA ATSI

Both the AW109 and SK76 were VFR flights receiving a Radar Control Service from Heathrow Radar. ATSI had access to reports from both pilots and the Heathrow Radar controller, the Area radar and R/T recordings. ATSI also received a copy of the ATC unit investigation report. Screenshots in the report are taken from the Area radar. All times UTC.

The AW109 had departed London Heliport and, at 1726:20, contacted the Heathrow Radar controller advising that they were westbound on Helicopter Route H3. At 1729:50 the SK76 contacted the Heathrow Radar Controller requesting a direct track across Sunbury to join Helicopter Route H3.

The controller cleared the SK76 to route direct to Sunbury Lock, not above an altitude of 1200ft VFR, and with clearance to then continue from Sunbury to Battersea via H3 which was read back correctly by the pilot.

At 1730:35 the controller passed Traffic Information to the AW109, (transponding code 7035) on an EC145 helicopter (code 0043) approaching from their right, but this was not acknowledged by the pilot (Figure 2).

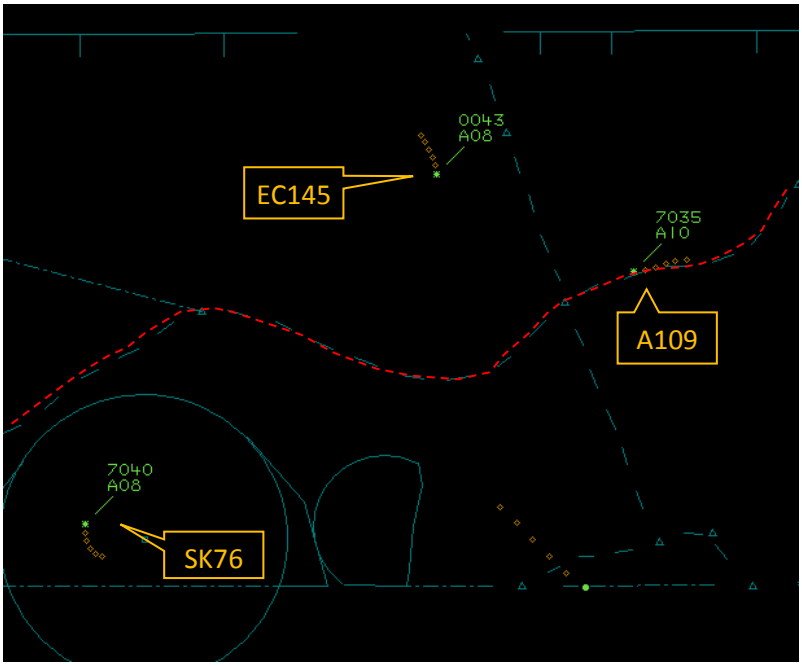


Figure 2 – 1730:35 (H3 outlined in red)

The controller made two further attempts to contact the AW109 pilot without success. Then, at 1731:07 the controller called the SK76, (transponder code 7040), to check their radio, and subsequently, passed Traffic Information on both the AW109 and the EC145 (Figure 3).

At 1731:26 the controller re-established two-way communications with the AW109, and passed Traffic Information on both the EC145 and the SK76. At 1731:45 the AW109 pilot reported being visual with the SK76 (Figure 4). Shortly afterwards the EC145 pilot also reported being visual with the AW109 (although referred-to as an "*EC55*"), which was acknowledged by the controller who then went on to pass Traffic Information to the EC145 pilot on the SK76.

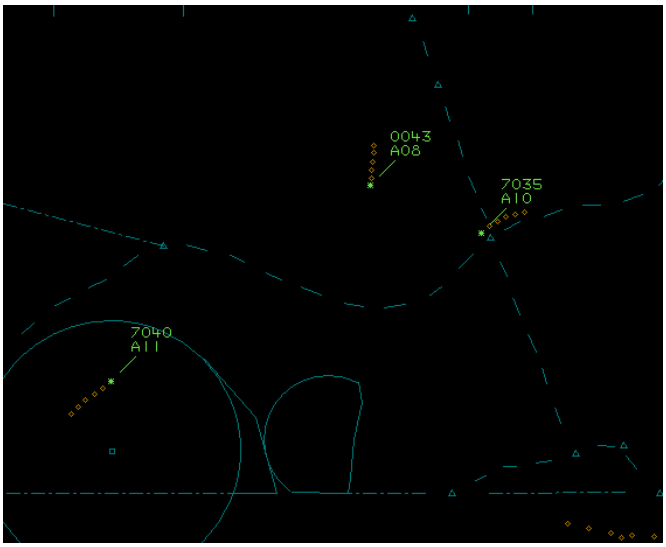


Figure 3 – 1731:07

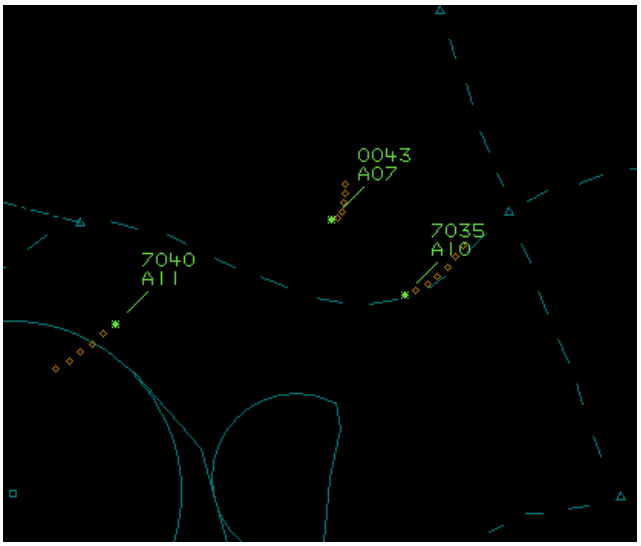
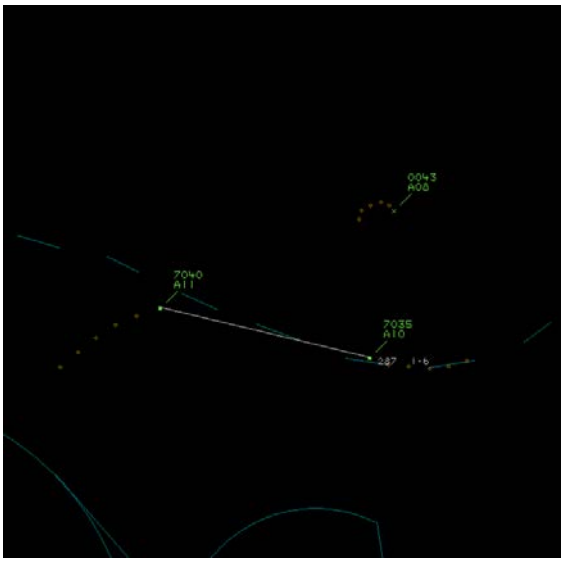


Figure 4 – 1731:45

At 1732:12 the SK76 pilot reported visual with *"the, er, one coming down"* (Figure 5).



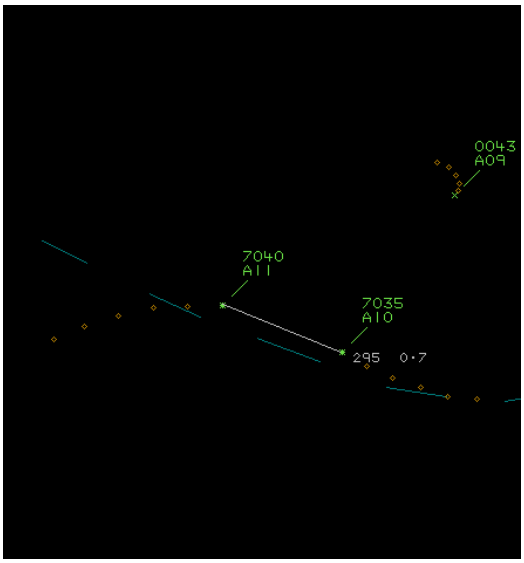


Figure 5 – 1732:12 Figure 6 – 1732:24

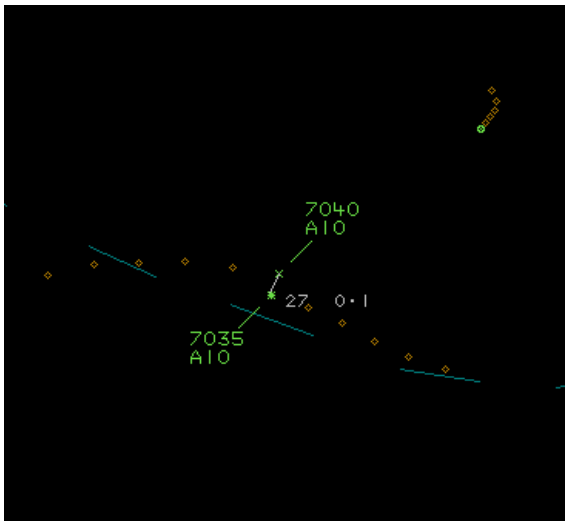


Figure 7 – 1732:30

At 1732:24 (Figure 6), one of the pilots transmitted: *"try the right-hand rule..."* CPA took place at 1732:30 with the aircraft separated by less than 0.1nm laterally and less than 100ft vertically (Figure 7).

The Heathrow Radar controller passed timely Traffic Information to the SK76 and AW109 pilots about each other, *and* the EC145. Both pilots reported being visual with each other whilst still over 1.6nm apart laterally.

In his written report, the pilot of the SK76 stated that after having become visual with the AW109, *"I felt the safest course of action was to not cut across his track but rather stand on and prepare to take avoiding action by breaking left should there be a risk of collision".* This appears to contradict what the SK76 pilot actually did, as it did indeed appear to cross ahead of the AW109.

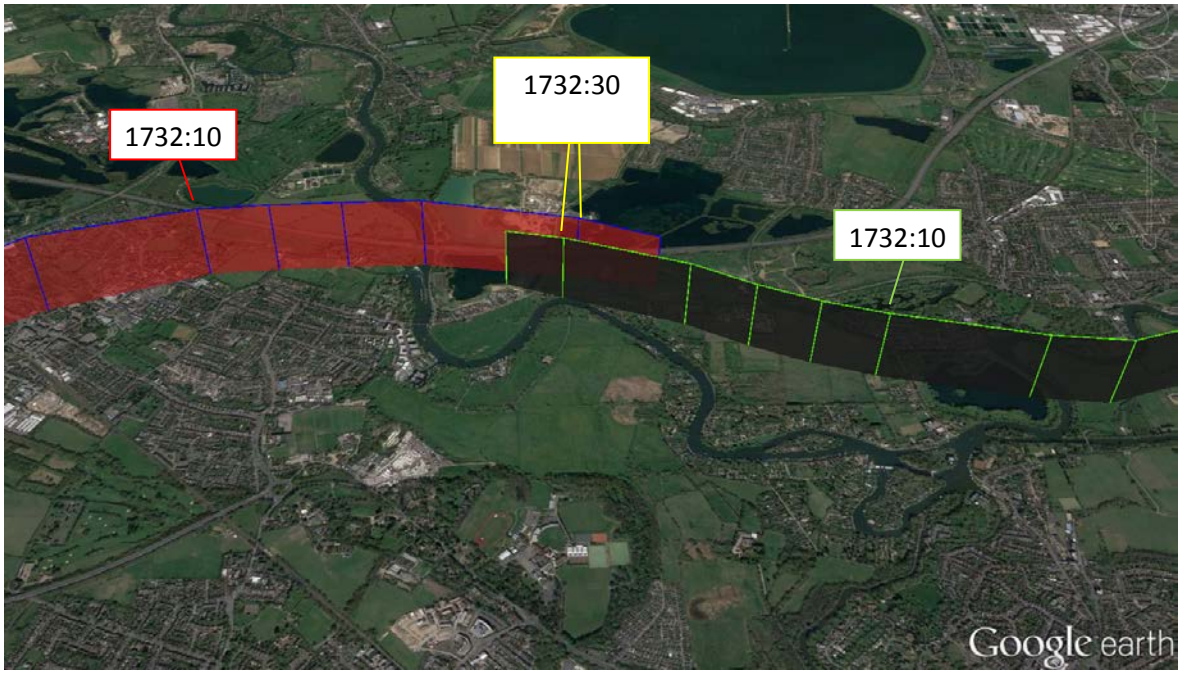


Figure 8 – Plotted tracks on Google Earth

UKAB Secretariat

The AW109 and SK76 pilots shared an equal responsibility for collision avoidance and not to operate in such proximity to other aircraft as to create a collision hazard[3]. If the incident geometry is considered as head-on or nearly so then both pilots were required to turn to the right[4].

Summary

An Airprox was reported when a AW109 and a SK76 flew into proximity at 1732 on Wednesday 12th April 2017. Both pilots were operating under VFR in VMC, and both in receipt of a Radar Control Service from Swanwick on the H3 heli-route.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of reports from the pilots of both 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.

[3] SERA.3205 Proximity.
[4] SERA.3210 Right-of-way (c)(1) Approaching head-on.

The Board first looked at the actions of the AW109 pilot. ATC had called the SK76 to him and he had eventually acknowledged and reported visual with it. The helicopter member opined that the radio in the AW109 was notoriously temperamental, and thought that this was probably why the pilot hadn't acknowledged the calls at first. Noting that the close proximity of aircraft flying along the heli-routes required pilots to maintain a good look-out, the Board wondered whether, having called visual with the SK76, the AW109 pilot may have become distracted by in cockpit activities and was then surprised to look up and see the SK76 as close as it was; otherwise, they were unsure as to why he had allowed the situation to get to the point where he needed to 'bank hard left'. Nevertheless, they were sympathetic to his assumption that the SK76 pilot would turn to the right of the H3 route, as laid down in the UK AIP, and could understand why he would be surprised that the other pilot had not reacted as expected.

For his part, the SK76 pilot was also visual with the AW109, and the Board were equally perplexed as to why he didn't turn to the right of the heli-route. In fact the radar replay showed that he did cross in front of the AW109 in his initial positioning, which then meant he would have needed to cross back to get onto the correct side of the route. He had received Traffic Information well before he joined the route and should have been able to adjust his flight accordingly. The Board also commented that both pilots had maintained their relatively high speed knowing that there was another aircraft transiting in the opposite direction; either, or both, could have slowed down to give themselves more time to assess the on-coming traffic, although the helicopter member commented that such encounters were routine on the heli-routes and so it was not normal to slow down in such circumstances. Irrespective, the Board agreed that it was for the SK76 pilot to arrange his flight to be on the right of H3, and in doing so to avoid the AW109.

Turning to the role the controller had to play, members noted that he had given Traffic Information to both pilots on each other, persevering with calling the AW109 pilot to get a response. Because they had called visual with each other, he did not then update the Traffic Information as the two aircraft approached each other on the assumption that as VFR traffic they would keep a suitable distance apart. The Board thought that this was a perfectly reasonable assumption and agreed that the controller had discharged his duties effectively by giving timely and accurate Traffic Information to both pilots.

However, this did lead on to the Board discussing the merits of the heli-routes in this area. Some members opined that, although they were entitled to fly the heli-routes, neither pilot actually needed to use the route on this occasion; being twin-engined they could have flown to the LFA in the Battersea area, avoiding the routes altogether. That being said, the helicopter member opined that there was value in pilots flying the known routes because that aided other pilots in forming an expectation of where traffic might be encountered. Notwithstanding their choice of route, it was noted that there was no height difference for built-in separation for helicopters using the routes in opposite directions, which therefore relies wholly on 'see-and-avoid' for deconfliction. The Board discussed the merits of introducing such deconfliction procedures, and were heartened to hear that the CAA's on-shore helicopter safety review will include the heli-routes as part of their process.

Finally, in determining the cause of the Airprox, the Board quickly agreed that the SK76 pilot had flown into conflict with the AW109, with a contributory factor that the SK76 pilot did not maintain to the right of the H3 route. In assessing the risk, the Board agreed that because both pilots were visual with each other, although safety had been degraded, there had been no risk of collision; Category C.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: The SK76 pilot flew into conflict with the AW109.

Contributory Factor: The SK76 pilot did not remain on the right of the H3 route.

Degree of Risk: C.

Safety Barrier Assessment[5]

In assessing the effectiveness of the safety barriers associated with this incident, the Board concluded that the key factors had been that:

ANSP

Regulations, Processes, Procedures & Compliance was assessed as **fully effective**.

Manning & Equipment was assessed as **fully effective**.

Situational Awareness & Action was assessed as **fully effective** because Traffic Information was passed to both pilots on the other aircraft.

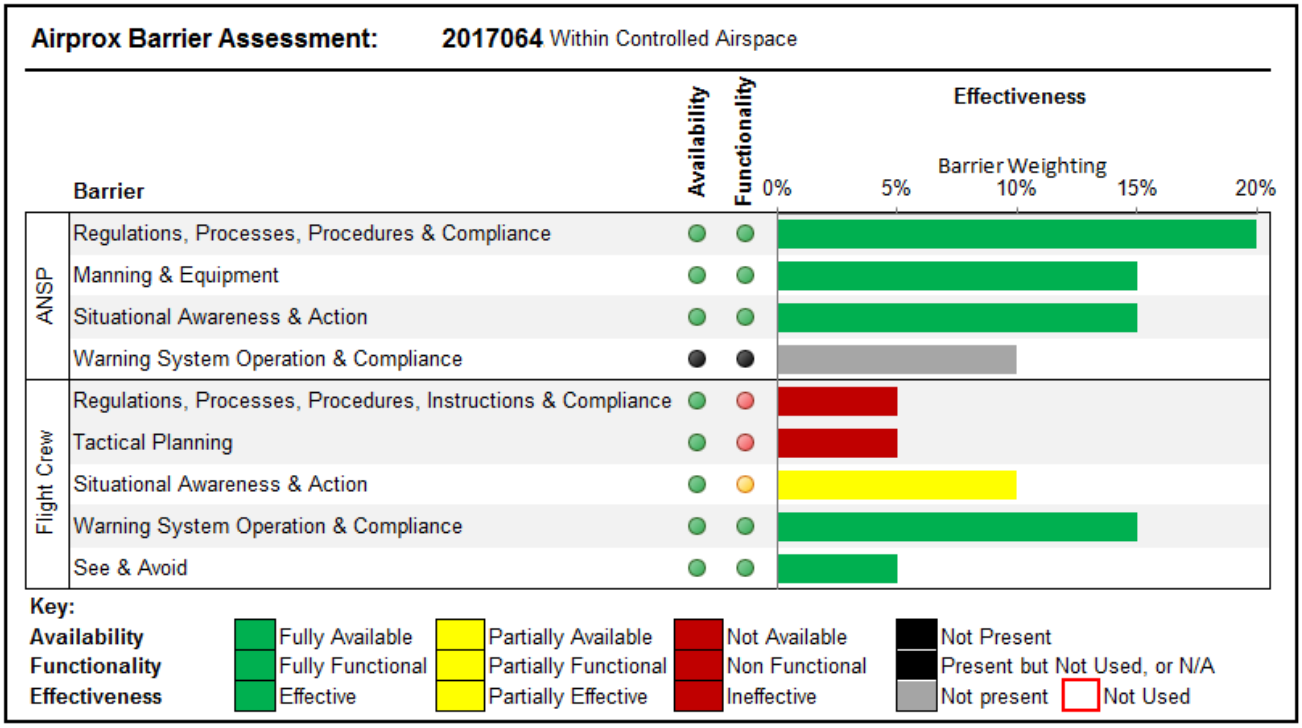
Flight Crew

Regulations, Processes, Procedures, Instructions & Compliance was assessed as **ineffective** because the SK76 pilot did not adhere to the UK AIP by maintaining to the right of the heli-route.

Tactical Planning was assessed as **ineffective** because the SK76 pilot did not enact his plan to not cross the AW109s track.

Situational Awareness & Action was assessed as **partially effective**, both pilots were given Traffic Information, although neither acted upon it until the last minute.

See and Avoid was assessed as **fully effective** because, in the end, both pilots took appropriate avoiding action.



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