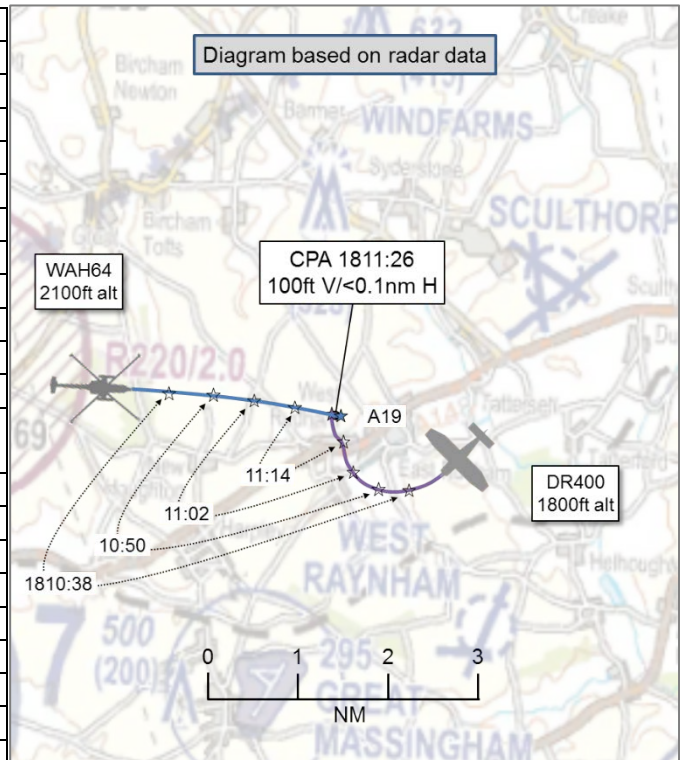


AIRPROX REPORT No 2018246

Date: 03 Sep 2018 Time: 1811Z Position: 5250N 00042E Location: 2nm SW Sculthorpe

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	Apache WAH64	DR400
Operator	HQ AAC	Civ FW
Airspace	London FIR	London FIR
Class	G	G
Rules	VFR	VFR
Service	Basic	Listening Out
Provider	Holbeach	(Little Snoring)
Altitude/FL	1900ft	1800ft
Transponder	A, C, S	A, C
Reported		
Colours	Green	White, blue
Lighting	Nav, HISL, landing	Wingtip strobes, nav
Conditions	VMC	VMC
Visibility	>10km	10km
Altitude/FL	1700ft	1350ft
Altimeter	QNH (1019hPa)	QFE (NK hPa)
Heading	080°	080°
Speed	120kt	100kt
ACAS/TAS	Not fitted	Not fitted
Separation		
Reported	140ft V/0m H	400ft V/NK H
Recorded	100ft V/<0.1nm H	



THE APACHE PILOT¹ reports returning from Holbeach Air Weapons Range to Sculthorpe Airfield. When 2.5nm from Sculthorpe, the front-seat Handling Pilot [Co-pilot/Gunner(CPG)] indicated that he was starting his descent into the airfield. The rear-seat pilot stated that he was going ‘eyes in’ to change the Low-Height Warning System from 1000ft to 200ft for the join. Upon going ‘eyes out’ and looking to the right, the pilot observed a blue-and-white, single-engine, low-wing civilian light-aircraft about 300m away and approximately 200ft below on a converging track. The rear-seat pilot shouted, ‘climb!’ to the CPG who he saw was looking out of the left-hand window into the area of the descent. On seeing this the pilot shouted, ‘I have control’ and took control of the aircraft; control was immediately relinquished by the CPG. The pilot pulled back on the controls using the aircraft inertia to put it into a climb. The civilian aircraft was then observed to pass underneath the helicopter. This was immediately confirmed by a ‘RAD ALT INVALID’ caption. Due to the severity of the manoeuvre, the ‘ACC OIL PSI’ master caution also illuminated. The crew conducted immediate actions as per the Apache FRC and put the aircraft into a safe flight profile. The ‘ACC OIL PSI’ caption cleared within 3 sec. The pilot then spoke with Holbeach ATC [sic] with whom he was in receipt of a Basic Service, and stated that we had just had a near-miss with a civilian aircraft. The Apache landed at Sculthorpe without further incident.

He assessed the risk of collision as ‘High’.

THE DR400 PILOT reports undertaking a local flight from Little Snoring Airfield. On return to base, overhead Sculthorpe, he noticed the turn & slip instrument didn't seem to be working. To test it, he visually scanned the sky then performed a 360° level turn to the left at 30° to 40° angle of bank whilst keeping a careful lookout. At about 315° through the turn he saw a helicopter at a range of 2nm. He turned left to ensure separation, but the helicopter started to descend and turn towards him. He turned further left and climbed, and the helicopter passed from right-to-left below him. The pilot noted that if

¹ Rear seat occupant.

the helicopter was behind him prior to him starting his turn then he would not have seen it and that at the 90° to 180° part of the turn his lookout would have been slightly impaired due to looking into the low, weak sun. The pilot commented that a NOTAM was scheduled for later that evening at Sculthorpe and wondered why the helicopter entered the NOTAM zone outside the published hours; he was not expecting traffic at that time. The pilot noted that Little Snoring Airfield was on the east boundary of the NOTAM zone and wondered why 'their control' was not monitoring the Little Snoring frequency, where they would have heard his calls. He also wondered why their radar didn't see him and keep the helicopter clear because he was transponding 7000 with Mode C.

He assessed the risk of collision as 'None'.

THE HOLBEACH AIR WEAPONS RANGE CONTROLLER reports giving a Basic Service to the Apache pilot whilst inbound to Sculthorpe when the Apache pilot asked if he had a transponder code for a single-engine light-aircraft he had just flown close to. The controller reported that he had no radar and would check the nearby radar units. Because RAF Marham were closed, he spoke to RAF Coningsby who reported there was a brief 7000 squawk near Sculthorpe. He also spoke to Norwich who were not working any aircraft in that vicinity. He reported this back to the Apache pilot via landline.

Factual Background

The weather at Marham was recorded as follows:

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METAR EGYM 031850Z 06003KT CAVOK 17/12 Q1020 BLU=
METAR EGYM 031750Z 03009KT CAVOK 19/13 Q1020 BLU=
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Analysis and Investigation

Military ATM

The AH64 pilot was in receipt of a Basic Service from Holbeach Air Weapons Range (AWR), the DR400 was not in receipt of an Air Traffic Service. Holbeach AWR does not have any form of air surveillance system. Having been notified of the incident, the Holbeach AWR controller attempted to identify the light-aircraft by liaison with adjacent (surveillance-equipped) airfields but to no avail. Because Holbeach AWR does not have an air surveillance capability, and the DR400 was not on the same frequency as the AH64, there was nothing the Holbeach Controller could have done to prevent this incident from occurring.

UKAB Secretariat

The Apache and DR400 pilots shared an equal responsibility for collision avoidance and not to operate in such proximity to other aircraft as to create a collision hazard². If the incident geometry is considered as head-on or nearly so then both pilots were required to turn to the right³. If the incident geometry is considered as converging then the Apache pilot was required to give way to the DR400⁴.

Comments

JHC

The crew planned and briefed this mission in accordance with extant procedures and guidance. Returning from a range serial and transiting to their exercise base, the crew encountered the civilian traffic whilst positioning for recovery. Although not equipped with a TAS system, the AH utilises the FCR (Fire-control radar) in Air to Air mode as a mitigation for MAC. In this case, the FCR did not alert the crew to the DR400. Had either the DR400 or the AH 64 crew been using an ATS from a

² SERA.3205 Proximity. MAA RA 2307 paragraphs 1 and 2.

³ SERA.3210 Right-of-way (c)(1) Approaching head-on. MAA RA 2307 paragraph 13.

⁴ SERA.3210 Right-of-way (c)(2) Converging. MAA RA 2307 paragraph 12.

radar-equipped provider, they may have received TI on each other. There is some doubt surrounding the nature of the DR400s track and the assessment of where the AH was in relation to this aircraft.

Summary

An Airprox was reported when an Apache and a DR400 flew into proximity 2.5nm west of Sculthorpe at 1811hrs on Monday 3rd September 2018. Both pilots were operating under VFR in VMC, the Apache pilot in receipt of a Basic Service from Holbeach Range and the DR400 pilot not in receipt of an ATS.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of reports from both pilots, radar photographs/video recordings and a report from the range controller involved.

Members first discussed the DR400 pilot's report and noted that the information he provided did not correlate with the Apache pilot's or the radar picture. He had stated that he was in a left-hand turn, that he had turned further left on seeing the Apache, and that the Apache had passed below him. The radar picture showed him in a right-hand turn, albeit with a small jink to the left just before CPA, and that the Apache passed above. He had also stated that he saw the Apache at a range of 2nm, but had then seemingly passed in close proximity. Members discussed whether this was simply recollection error but felt that the DR400 pilot's narrative was so starkly contradicted by the radar picture that he had most likely reported a different sighting. As such, it was felt that the DR400 pilot had probably not seen the Apache. The Board also noted the comments made by the DR400 pilot regarding his expectations surrounding the exercise NOTAM. It was clear that he had expected there to be a controlling agency with a surveillance capability, and that there would be no traffic outside of the NOTAM'd times. These expectations were flawed in that there was no requirement for a NOTAM to be in place for aircraft to fly from Sculthorpe (the NOTAM simply highlighted times when Sculthorpe would formally be active) and pilots should not assume that activation of Sculthorpe would be accompanied by a controlling agency.

For his part, the Apache pilot was returning to his operating base and could not obtain a surveillance-based service because Marham was closed and Norwich radar coverage did not extend to the Apache's position. During the Board's discussion, it became apparent that although the Apache Fire Control Radar (FCR) was equipped with an air-to-air mode, it had not been successful in providing SA or MAC mitigation in this instance. The Board wondered to what degree the FCR was routinely effective in providing MAC mitigation against GA platforms, and whether a dedicated TAS would be a prudent measure with which to equip the Apache force. In the event, members noted that the CPG was naturally looking towards the landing area and the rear-pilot had seen the DR400 at a later stage than was ideal due to his conducting in-cockpit tasks.

Members agreed that the cause of the Airprox was a late sighting by the Apache pilot and probably a non-sighting by the DR400 pilot. The Board then discussed the risk, with some members of the opinion that the two aircraft had only missed each other by providence. However, after some discussion, it was agreed that, although late, the sighting by the Apache pilot had been sufficient to allow action that had materially increased separation, although the achieved separation had been such that safety had been much reduced below the norm.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: A late sighting by the Apache pilot and probably a non-sighting by the DR400 pilot.

Degree of Risk: B.

Safety Barrier Assessment⁵

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

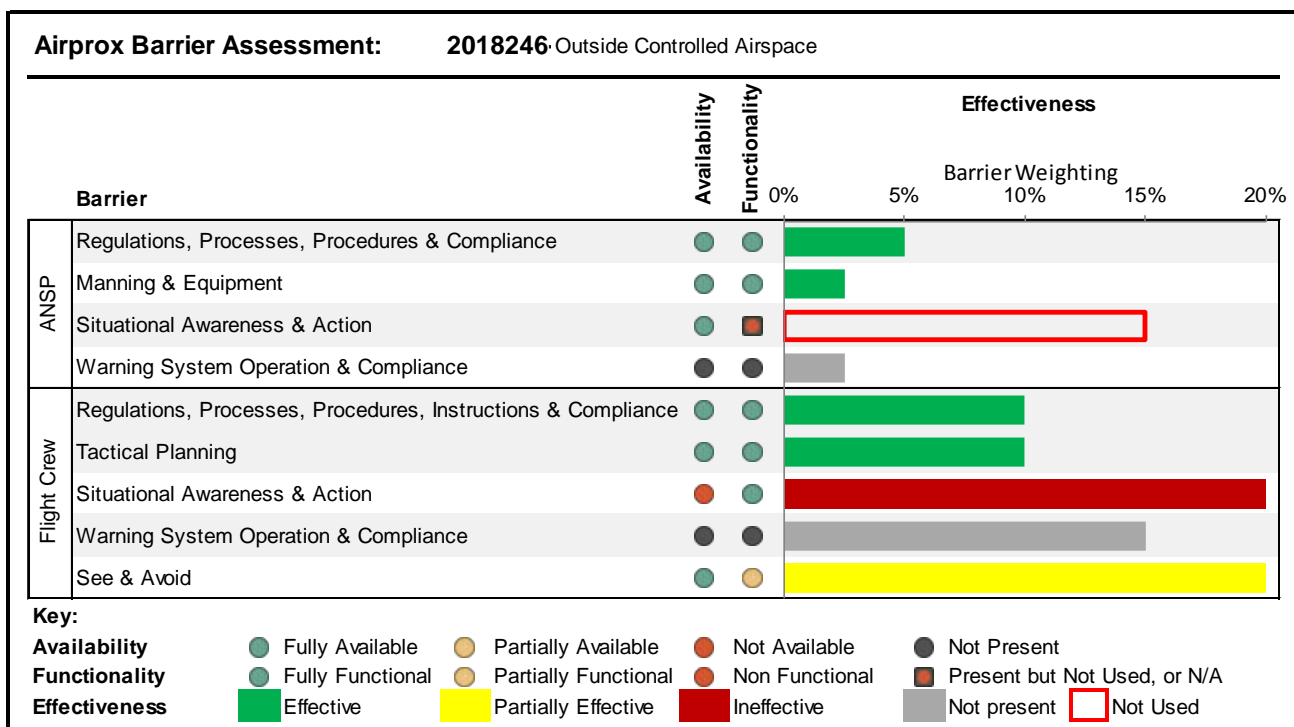
ANSP:

Situational Awareness and Action were assessed as **not used** because the Holbeach RSO did not have access to a surveillance picture.

Flight Crew:

Situational Awareness and Action were assessed as **ineffective** because neither pilot was aware of the other aircraft until at a late stage, the Apache FCR did not identify the DR400, and the DR400 was not fitted with a TAS.

See and Avoid were assessed as **partially effective** because the Apache pilot saw the DR400 at a late stage and had had to take emergency 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](#).