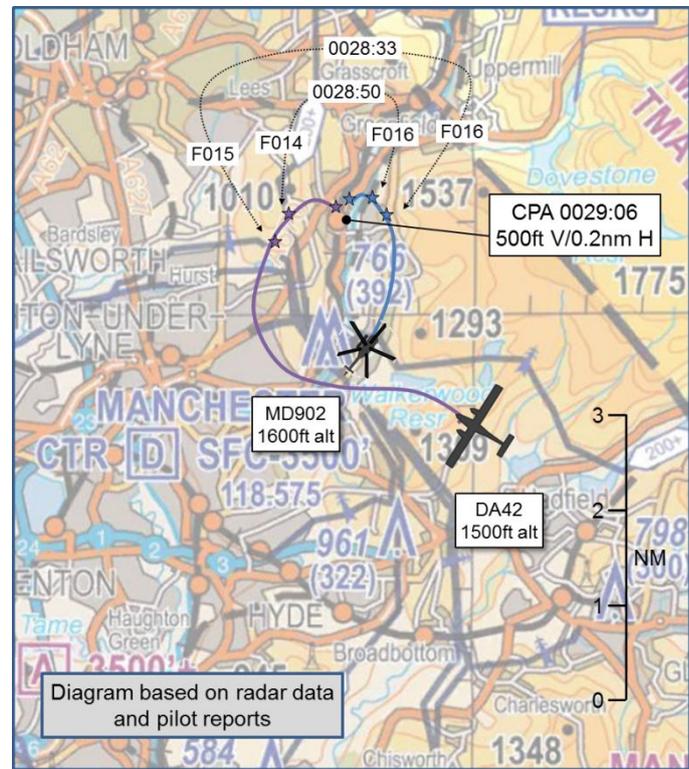


**AIRPROX REPORT No 2015037**

Date: 10 Apr 2015 Time: 0029Z (Night) Position: 5331N 00202W Location: IVO Oldham

**PART A: SUMMARY OF INFORMATION REPORTED TO UKAB**

Recorded	Aircraft 1	Aircraft 2
Aircraft	MD902	DA42
Operator	NPAS	Civ Comm
Airspace	Manchester	Manchester
Class	D	D
Rules	VFR	VFR
Service	Radar Control	Radar Control
Provider	Manchester	Manchester
Altitude/FL	FL 012	FL017
Transponder	A,C,S	A,C,S
Reported		
Colours	Black/Yellow	White/Yellow
Lighting	Strobes/Nav lights.	Nav, anti-colls,landing
Conditions	VMC	VMC
Visibility	8km	10km
Altitude/FL	1950ft	1749ft
Altimeter	QNH (1021hPa)	QNH (1021hPa)
Heading	360°	160°
Speed	40kt	140kt
ACAS/TAS	TCAS I	Other TAS
Alert	TA	TA
Separation		
Reported	0ft V/600m H	300ftV/200m H
Recorded	500ft V/0.2nm H	



**THE MD902 PILOT** reports that he was tasked from Reddish in central Manchester, to an area SE of Oldham, a request was made to transit at 2000ft. ATC granted an upper limit of 2500ft, but he elected to stay at 2000ft. At Stalybridge he decreased speed and took up a northerly track to start working in the area. He recalls that at this time ATC passed Traffic Information to the flight calibrator about his flight. This was followed by an acknowledgment of visual by the calibrator pilot. The aircraft was in the helicopter's rear quadrant so he was unable to visually identify it, and had to rely on his TCAS for information. A TCAS warning identified an aircraft in the 4 o'clock position at the same height and less than a mile away. He knew the aircraft was carrying out a calibration so he realised it had started its ILS approach and so he increased speed on a northerly heading to increase separation. He heard the calibration pilot state that he was going to abort his approach and reposition. At this point the helicopter was at the most northerly point of the search so the pilot slowly banked left to confirm the position of the other aircraft. The two policemen on the left of the helicopter saw the other aircraft first, and then the pilot spotted it in a steep right-hand bank, then level on an intercepting course. He saw the landing-light come on and immediately illuminated his own. He saw no apparent change in course so when the other aircraft was 600m away, he took avoiding action by descending steeply. The task was then cancelled and they returned to base.

He assessed the risk of collision as 'High'.

**THE DA42 PILOT** reports that he was calibrating the RW23R ILS at Manchester airport, with a VFR clearance to operate autonomously within the CTR, not above 3000ft. They had been on task for over an hour and were positioning for a profile that required the aircraft to be established on the ILS at 12nms at a height of 1500ft, which was lower than an aircraft would ordinarily be at this range from the runway. He was aware of a Police Helicopter that had been operating in the area for the past

30mins, but it had been on task to the north of the extended centreline and their positioning legs had all been to the south. Throughout, Manchester had given regular Traffic Information to both pilots and he had predominantly kept visual contact with the helicopter, backed up by TAS information. Just prior to the Airprox the helicopter changed position to one estimated to be just south of the extended centreline at a range of 15nm, at an altitude slightly below that of the DA42. He maintained visual contact throughout this change in operating area. He then commenced the flight profile, turning in at 12nm, however, due to an on-board equipment issue, he had to terminate the calibration run at 10.5nm and, aware that the helicopter was in their rear left quadrant, he turned right to the north of the centreline in order to re-position and repeat the profile from 12nm. Once downwind he observed the helicopter in his 2 o'clock, it appeared to be engaged in an orbit just the other side of a ridgeline. At 12.6nm he initiated a relatively tight right turn to establish back on the extended centreline and momentarily lost visual contact with the helicopter as it became obscured by the aircraft's nose, but regained contact in his low 11 o'clock. At this point Traffic Information was given by the Manchester Controller, and on completion of this transmission the helicopter pilot announced he was descending and it was immediately apparent that he was concerned by the proximity of the calibrating aircraft. The DA42 pilot commenced a climb whilst continuing the turn and the TAS gave a single Traffic Alert. He subsequently lost contact with the helicopter as it passed under his left wing whilst they were in the climb.

He assessed the risk of collision as 'None'.

**THE MANCHESTER CONTROLLER** reports that he submitted the report after the event because initially the pilot of the MD902 had indicated he wasn't going to report the incident as an Airprox. The MD902 pilot had requested to operate in the Oldham area, but was actually operating 5nm south in the Stalybridge area. At the same time the DA42 was carrying out calibration work on the 23R ILS and was 1nm south of the approach beam at a range of 9nm. The controller passed Traffic Information to both pilots and the DA42 commenced a run tracking North West bound. The controller checked the intentions of the MD902 pilot because he was operating in a different location and he stated he was moving northeast. Further Traffic Information was passed to the MD902 pilot and he reported visual. The DA42 pilot then stated that he would have to break off his run and reposition; because the police helicopter had stated he was moving further northeast, the controller was happy to let the flight calibrator re-position without any restrictions. The MD902 then became stationary and began to drift slightly westbound, putting both aircraft on converging tracks. The controller asked the DA42 pilot to confirm he was still visual with the helicopter, now 12 o'clock, 1nm, to which he replied he was. The MD902 pilot then sounded slightly panicked and stated he was descending.

## Factual Background

The weather at Manchester was reported as:

METAR EGCC 10020Z 17005KT 8000 NSC 10/06 Q1021 NOSIG

## Analysis and Investigation

### CAA ATSI

The DA42 (code 0024) was conducting flight calibration checks and the MD902 (code 0041) was operating to the north of the DA42. Both aircraft had been operating under a Radar Control Service, provided by Manchester Approach Radar, in Class D airspace, for approximately 40 minutes prior to the Airprox. During this time, regular traffic information had been passed to each aircraft on the other. At 0026:00 the DA42 reported positioning for a 'profile 16' and the Manchester Approach controller passed Traffic Information on the MD902 in the DA42's twelve o'clock at 2nm which was acknowledged. The MD902 pilot reported routeing further off towards the northeast and was passed Traffic Information on the DA42. He reported having the DA42 on TCAS at 0026:30. The Manchester Approach controller then asked the DA42 pilot if they were visual with the MD902 to which he replied "Affirm". At 0028:14 (Figure 1), the DA42 pilot reported running in which was acknowledged by Manchester Approach. The Manchester controller stated

that, because the MD902 had reported moving north east, he was happy to let the DA42 reposition without any restriction or direction of turn. The controller, having been providing timely and continuous Traffic Information for approximately 40 minutes - as required when providing a Radar Control Service – was likely to have been satisfied that the pilots were fully aware of the position of the other aircraft. The radar recording showed that the DA42 continued in a right hand turn back towards Manchester and flew over the MD902. CPA occurred between the two consecutive radar pictures (Figure 2 and Figure 3) with a vertical distance of between 400ft and 900ft. The MD902 pilot reported descending to avoid the DA42. It was observed that the DA42 initiated a climb to an indicated 2200ft (700ft above the selected 1500ft as depicted via the Radar Mode S). The DA42 descended to an indicated 1700ft within the next minute. The unit could add no additional information.

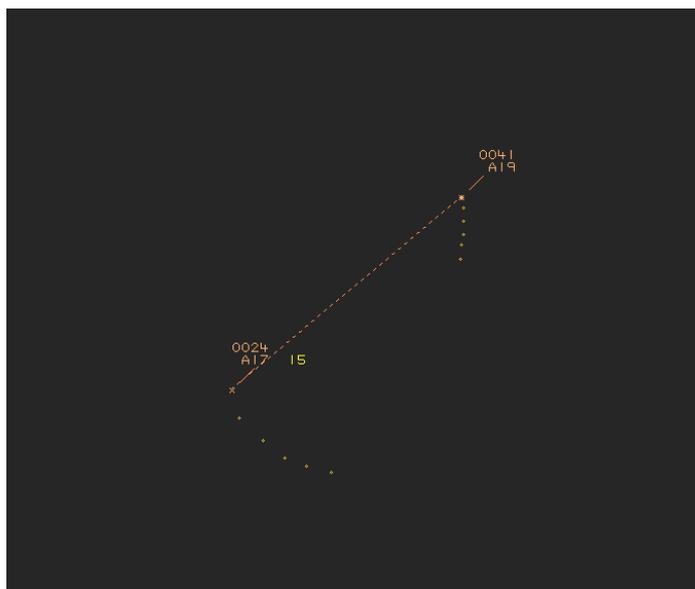


Figure 1 (0028:14)



Figure 2 (0029:06)

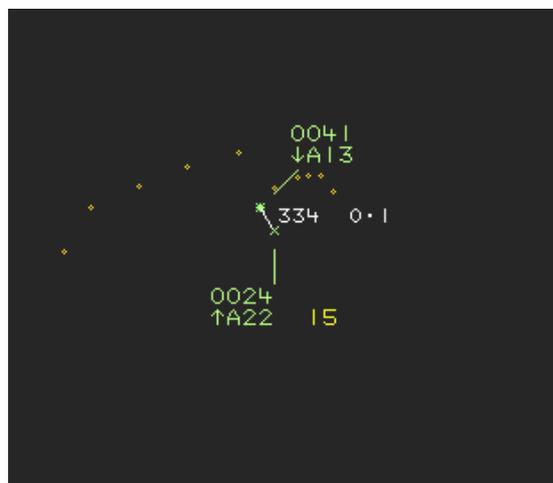


Figure 3 (0029:12)

### UKAB Secretariat

Both pilots shared an equal responsibility for collision avoidance and not to operate in such proximity to other aircraft as to create a collision hazard.<sup>1</sup>

<sup>1</sup> SERA.3205 Proximity.

## Comments

### NPAS

As with many aerial applications a balance has to be struck between being effective, achieving the task safely, and disruption to other airspace users. Increased interaction with other users, such as in this scenario, has the effect of eroding the pilot's spare capacity and risks compromising the other two outcomes. In Police operations, the aircraft commander may, depending on the significance of the task, have the option of applying an Alpha suffix to their callsign to take priority over other traffic but this was clearly not warranted in this case. Both aircraft were therefore operating legitimately and on an equal priority basis in accordance with their default 'Bravo' suffix conditions of their Special Flight Notifications - the Police pilot elected to redress the balance by leaving the scene.

### Summary

An Airprox was reported on 10<sup>th</sup> April 2015 at 0029 between a MD902 and DA42. Both were receiving a Radar Control Service from Manchester ATC, and were in Class D airspace. The DA42 was flight calibrating the ILS and the MD902 was on a police tasking in the Oldham area. Apart from momentarily losing contact during his turn, the DA42 pilot was visual with the MD902 throughout, Manchester ATC gave Traffic Information to both pilots, and both pilots received Traffic Information from their TCAS/TAS.

### **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.

The Board first considered the actions of the MD902 pilot. They noted that he was on-task, and probably focussed on the job in hand. He was aware of the DA42 through Traffic Information, TCAS information, and could hear the RT calls, but the Board thought it likely that he had not expected it to be as low as it was in that area. Some members wondered whether he may also have experienced "startle-factor" as his crew reported seeing the other aircraft before he could, and then suddenly seeing the other aircraft. Coupled with the fact that, at night, depth perception is difficult to judge, members wondered whether it may be that he also thought the other aircraft was closer than it actually was.

Turning to the DA42 pilot, the Board were informed by a member who had previously been a flight checker that the low positioning of the DA42 was normal for Manchester runs, and that dispensation would have been given to allow the aircraft to operate closer to high ground than normal. That said, it was stressed that the pilot would have been mindful that although undertaking runs on the set profile was safe, turning away from the profile had inherent risks. Therefore, the Board were informed that he would likely have been keen to manoeuvre as close to the profile as possible, and this would account for his tight right turn. Some Board members wondered whether he would have been better served taking a left turn, away from the high ground and the helicopter. However, taking into consideration his need to remain as close as possible to his calibration profile, they reasoned that his decision to turn right was understandable. Notwithstanding, they did note that this probably meant that, already being task-focused, he had put himself under further pressure by turning towards high ground and the helicopter at night, when it may have been better to have discarded the run altogether and reposition again. The Board also commented that, although being visual with the helicopter himself, he may not have appreciated that his manoeuvring might startle the other pilot given the added factor of operating at night and the potential therefore that the MD902 pilot might not have been visual with him.

The Board noted that both pilots were undertaking unusual tasks, both requiring a degree of priority, and that both pilots may have been under pressure to achieve their particular aims. The Board agreed that the controller had done his best to provide Traffic Information to the pilots, both of which were operating VFR and therefore did not need to be formally separated by the controller. The Board further noted that this Traffic Information had cued the DA42 pilot to see the MD902 at an early stage, and the MD902 pilot to see the DA42 as they turned into conflict with each other. The Board further noted that both pilots had gained Traffic Information from TCAS. Considering the geometry of the encounter, when looking at the cause of the Airprox the Board agreed that it had been the DA42 pilot who had flown close enough to cause the MD902 pilot concern. But in assessing the risk, they decided that, because the DA42 pilot was visual with the MD902, there had been no risk of collision; timely and effective actions had been taken, and so they therefore assessed it as Category C.

### **PART C: ASSESSMENT OF CAUSE AND RISK**

Cause: The DA42 pilot flew close enough to cause the MD902 pilot concern.

Degree of Risk: C.