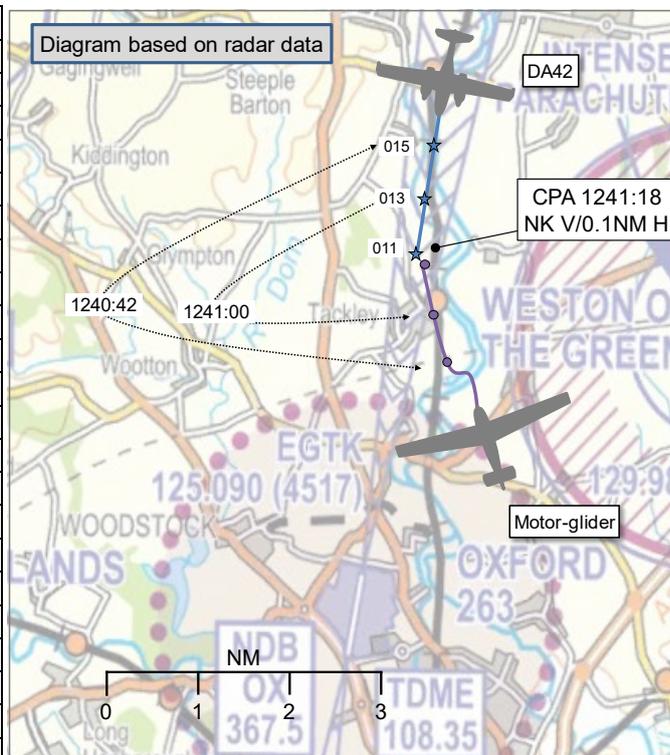


AIRPROX REPORT No 2023073

Date: 14 May 2023 Time: 1241Z Position: 5153N 00118W Location: 4NM N Oxford

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	DA42	Motor-glider
Operator	Civ FW	Civ Gld
Airspace	London FIR	London FIR
Class	G	G
Rules	IFR	NK
Service	ACS	Unknown
Provider	Oxford	
Altitude/FL	FL011	NK
Transponder	A, C, S	None
Reported		
Colours	White	NK
Lighting	Nav, Landing	NK
Conditions	VMC	NK
Visibility	5-10km	NR
Altitude/FL	1500ft	NK
Altimeter	QNH (1021hPa)	NK
Heading	191°	NK
Speed	100kt	NK
ACAS/TAS	TAS	Unknown
Alert	None	N/A
Separation at CPA		
Reported	100ft V/<0.5NM H	NK
Recorded	NK V/0.1NM H	



THE DA42 PILOT reports that they were on the ILS at approximately 4NM descending, when Tower advised of unknown traffic, 11 o'clock, no height. They looked, but saw nothing. Tower called again, 'traffic half a mile, 11 o'clock no height'. They saw the motor-glider flying up the ILS to their left and slightly below. They immediately took control from the student, added power and climbed away.

The pilot assessed the risk of collision as 'High'.

THE MOTOR-GLIDER PILOT could not be traced.

THE OXFORD RA CONTROLLER reports that they were the OJTI of a Radar trainee. Weather conditions were hazy and they had had several aircraft return to the aerodrome from the west due to unfit visibility. [DA42 C/S] was being vectored for the ILS and had been sent to Tower (TWR). A PSR-only contact had been routing toward D129 (which was active with gliders) from the southeast of Oxford Aerodrome, but they noted that it turned to head through the 'gap' between the ATZ and D129 and they called TWR. Initially, they asked the TWR controller to confirm that there was only 1 aircraft in the left-hand circuit (it was following a circuit aircraft) to which they responded affirm and they asked them to pass Traffic Information to [DA42 C/S]. By this time the non-transpondering aircraft had turned right from crossing ahead of the DA42 from their left-to-right (potential conflict) to the opposite direction (definite conflict). [DA42 C/S] reported breaking off the approach with the aircraft in sight and reported it to be a motor-glider at 1300ft. [DA42 C/S] levelled off at 1400ft and asked to be repositioned for another ILS approach. They noted that they are well versed to the hazards of 'the gap' and mindful of it. On this particular occasion minimal safety nets were available to avoid a potential mid-air collision. The motor-glider pilot did not use RTF nor was the aircraft equipped with any form of electronic conspicuity, transponder, ADS-B etc. Route selection was dubious, flying up the feathers of a promulgated instrument approach is permitted, but not wise, and the weather conditions were not conducive to timely see-and-avoid. In this circumstance, had ATC not passed Traffic Information to the aircraft on approach,

a very real risk of mid-air collision existed. Two subsequent VFR aircraft conducting straight-in approaches were also in conflict with this aircraft and Traffic Information was passed to both before transfer to TWR.

THE OXFORD ADC CONTROLLER reports they had one aircraft in the circuit and [DA42 C/S] prenoted inbound on the ILS RW19. It was hazy and difficult to see the aircraft from the VCR. They spotted a primary-only contact on the ATM on the northeast edge of the ATZ boundary but couldn't see anything out of the window due to the hazy conditions. Radar called to ask how many there were in the circuit (thinking the primary-only could be a non-transponding circuit aircraft) to which they replied 1 and that they couldn't see the primary-only. Radar then called back with Traffic Information to pass to [DA42 C/S] which they repeated verbatim. They could still not see the aircraft out of the window. They got the ATCA to look for the aircraft and passed updated Traffic Information. The DA42 pilot reported the aircraft in sight and said it was a motor-glider at 1300ft. The pilot then asked for another approach as they had had to go around against the unknown traffic. Radar gave them go-around instructions which were passed. They later spoke to the instructor in the DA42 to ascertain how close it was as they [the controller] didn't get the motor-glider visual so couldn't be certain an Airprox had occurred. The pilot said it was close, it passed underneath them 200ft below, and they didn't get it visual until the second time Traffic Information was passed, when it was half a mile away.

Factual Background

The weather at Oxford was recorded as follows:

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METAR EGTK 141220Z 20005KT 130V250 9999 FEW023 17/12 Q1020=
METAR EGTK 141250Z 22006KT 180V240 9999 FEW029 17/12 Q1019=
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Analysis and Investigation

Oxford ATC Investigation

[DA42 C/S] was operating in receipt of a Traffic Service from Oxford Radar, Traffic Information had been reduced owing to "poor radar performance". Oxford Radar was manned by a trainee controller (who up to this point had logged 64hrs training and was post level 1 check). The trainee was under the supervision of an experienced OJTI/UA/UTO.

[DA42 C/S] established contact with Oxford Radar at 1222:43, the following RTF exchanges occurred (all times UTC):

[12:23] [DA42 C/S]: Oxford Radar, hello, [C/S], information November, Q-N-H ONE-ZERO-TWO-ZERO, request Traffic Service.

[12:23] OXF RAD: [DA42 C/S], squawk four-five-zero-two, pass your message.

[12:23] [DA42 C/S]: squawk four-five-zero-two and a D-A-Forty-Two, [departure airfield] to [destination airfield] now V-F-R currently over Moreton in the Marsh for general handling.

[12:23] OXF RAD: [DA42 C/S], Identified, Traffic Service, Traffic Information reduced due poor radar performance.

[12:23] [DA42 C/S]: Traffic Service, Roger, [C/S].

Prior to the Airprox in question, and whilst in receipt of vectors for an ILS approach to RW19, [DA42 C/S] had already been 'broken off' from the approach (prior to establishing on the Localiser, whilst approximately in a base-leg position) owing to an unknown aircraft that looked as though it was going to be crossing the final approach track (squawk 7000 and Mode C indicating ~2000ft). In regards to the unknown aircraft involved in the Airprox, the radar replay showed a primary contact emerging from the southeast on a continuous track, seemingly towards Oxford. The Oxford Radar trainee transferred [DA42 C/S] to Oxford Tower with the aircraft established on the ILS at 6NM. The unknown aircraft at this time was to the northeast of Oxford Airport, just outside the ATZ on a north-westerly track. At time 1240:03 an internal phone call was made by the Oxford Radar OJTI to the Oxford Tower Controller:

[12:40] OXF RAD (via landline): Have you got two in the circuit left-hand?
 [12:40] OXF TWR (via landline): Negative, I don't know what that is on left base.
 [12:40] OXF RAD (via landline): Okay, you've got something routing through the gap, shooting the gap.
 [12:40] OXF TWR (via landline): Yeah, I can't spot it because it's so hazy.
 [12:40] OXF RAD (via landline): Okay, that's understood.
 [12:40] OXF TWR (via landline): Alright, I'll tell you if I do.
 [12:40] OXF RAD: (via landline): Alright.

[DA42 C/S] first made contact with Oxford Tower at time 1240:38, the following exchange occurred:

[12:41] [DA42 C/S]: Oxford Tower, [C/S], localiser established, runway one-niner.
 [12:41] OXF TWR: [DA42 C/S], Oxford Tower, continue approach, runway one-nine.
 [12:41] [DA42 C/S]: And [C/S], request low approach and circuit.
 (Oxford Radar OJTI initiates a call with the Oxford Tower controller).
 [12:41] OXF TWR (via landline): Tower.
 [12:41] OXF RAD (via landline): [DA42 C/S], traffic eleven o'clock, one and a half, reciprocal, non-transponding.
 [12:41] OXF TWR: [DA42 C/S], from radar, traffic left, eleven o'clock, one mile, reciprocal to you, non-transponding, no height information, nothing observed from the control tower.
 [12:41] [DA42 C/S]: Roger, [C/S].
 [12:41] OXF TWR: [DA42 C/S], previously mentioned traffic, left, eleven o'clock, half a mile now, reciprocal to you, no height.
 [12:41] OXF TWR (via landline): Can't see anything [Radar OJTI's name]. It's just too hazy.
 [12:41]: [DA42 C/S]: Traffic in sight, [C/S].
 [12:41]: OXF TWR (via landline): Oh, he's got it [Radar OJTI's name].
 [12:41] OXF RAD (via landline): Okay, thanks.
 (Internal call between Radar OJTI and Tower controller ends).
 [12:41]: OXF TWR: [DA42 C/S], thank you, do you have a rough altitude and type on that one please?
 [12:41] [DA42 C/S]: Yeah about thirteen-hundred feet and a motor-glider.
 [12:41] OXF TWR: Roger, thank you and er request your runway intention.
 [12:41] [DA42 C/S]: Any chance of another ILS? We just had to go around there, [C/S].
 This information was relayed by the Oxford Tower controller to Oxford Radar OJTI/Trainee and [DA42 C/S] was repositioned for another radar-vectorred ILS.

The radar replay showed the CPA at 1241:16 as the contacts merged, [DA42 C/S] Mode C indicating 1400ft, the unknown contact had no Mode C but a report from [DA42 C/S] (as transcribed above) estimated the unknown aircraft to be at approximately 1300ft. As part of this investigation the unknown aircraft was looked for on replays on FlightRadar24, ADS-B Exchange and the unit's own PilotAware (this receives transmissions from ADS-B, FLARM, and PilotAware). Although these are not approved for use in the provision of an ATS, it was felt that the data may have been useful for this investigation. The unknown aircraft did not show on any and therefore it is inferred that no form of electronic conspicuity was being carried or operated onboard.

ANALYSIS

The Oxford Radar trainee/OJTI were operating in light traffic conditions. [DA42 C/S] first made contact with Oxford Radar at time 1241, the crew were given a Traffic Service as requested with the caveat of Traffic Information being reduced due to poor radar performance. This had been standard practice at the unit since a report was filed on the 23/04/2023 specifying that since a repair to the radar had taken place that "SSR is intermittent on some tracks, disappearing for one or two sweeps at a time" and "There is an increased number of dropped tracks/history trails". (Note, this issue has subsequently been rectified as of the 18/05/2023). The trails of both [DA42 C/S] and the unknown conflicting aircraft had been consistent throughout the observation of the radar replay for this investigation and therefore radar performance was not deemed a significant factor in this event.

The radar replay showed a non-transponder equipped aircraft southeast of Oxford Airport tracking in a north-westerly direction. At no point did the pilot make contact with Oxford ATC nor did Oxford Radar attempt to make 'blind calls' to this aircraft. On interview with the Unit Assessor tasked with conducting the initial review of this incident, the Oxford Radar OJTI specified that they "had seen the primary when it was east of the ATZ, [their] trainee hadn't". It was agreed amongst the Oxford UA's consulted that the primary return of this aircraft had been visible for a significant enough length of time that it should have been noted some time earlier than this and that a more effective scan would have highlighted this aircraft as a 'threat' sooner.

[DA42 C/S] had been in receipt of a Traffic Service (albeit reduced Traffic Information) from Oxford Radar, it is noted that under the provision of this service and in accordance with CAP774, "*Deconfliction is not provided under a Traffic Service*". There is, however, guidance specifying that:

When providing headings/levels for the purpose of positioning and/or sequencing or as navigational assistance, the controller should take into account traffic in the immediate vicinity based on the aircraft's relative speeds and closure rates, so that a risk of collision is not knowingly introduced by the instructions passed. However, the controller is not required to achieve defined deconfliction minima and pilots remain responsible for collision avoidance even when being provided with headings/levels by ATC.

It was also noted that under a Traffic Service:

Controllers shall aim to pass information on relevant traffic before the conflicting aircraft is within 5 NM, in order to give the pilot sufficient time to meet his collision avoidance responsibilities and to allow for an update in traffic information if considered necessary.

Traffic Information was passed much later than this (via the Tower controller while the confliction was at one and a half miles). It was documented in the initial review conducted by the Oxford Unit Assessor that there was a large degree of assumption and expectation bias from the Oxford Radar OJTI, the reason being that numerous aircraft had been seen to fly the track between the Oxford ATZ and D129 historically, without being in communication with Oxford ATC. These previously observed tracks quite often continue in a north-westerly direction and have often been observed eventually landing at [a nearby] aerodrome, yet on this occasion this wasn't the case. When north abeam the Oxford ATZ the unknown aircraft actually altered onto a more northerly route rather than continuing westerly as the Radar OJTI expected. It was highlighted by the Unit Assessor that the unit would expect a more 'defensive' controlling technique to be applied in these circumstances with a greater degree of thought and attention given to "what if's" of the aircraft changing course suddenly (as was seen here). On review of the recording it must be argued that flying opposite direction against a published instrument approach, with no transponder and whilst not in communication with the unit with which that IFP is associated, would constitute a degree of poor airmanship even though not a breach of any regulation.

With the benefit of a fuller investigation it was also deemed noteworthy that the Oxford Radar trainee/OJTI had executed an example of defensive controlling with [DA42 C/S] whilst in receipt of vectoring earlier in the approach. Vectoring the aircraft away from the FAT in order to avoid knowingly introducing a risk of collision with an unknown aircraft (7000 squawk, Mode C indicating 2000ft) in accordance with CAP774 as quoted above.

The first time the Oxford Tower controller was made aware of the presence of this unknown aircraft by radar was at 1240, the Oxford Radar OJTI asked, "*have you got two in the circuit left-hand?*". The Tower controller's response was prompt with, "*negative, I don't know what that is on left base*", (clearly signalling they had spotted and were aware of the presence of an unknown aircraft in the vicinity, via use of the ATM). The Oxford Radar OJTI specified, "*you've got something routing through the gap*". This was in reference to a locally known problem at Oxford whereby aircraft route between the small gap that exists between the Oxford ATZ and D129. The irony in this incident being that D129 was notified as active Sunrise–Sunset Monday to Friday (unless otherwise activated by NOTAM), this incident occurred on a Sunday and, although Weston-on-the-Green airfield was active with gliding, the hard boundary of the Danger Area was not. The Tower controller informed the radar OJTI that they, "*can't spot it because it's so hazy*" but that they would tell radar

if they did get it in sight. A short period of time later at 1241, the Oxford Radar OJTI called back with Traffic Information to be passed to [DA42 C/S] that the unknown conflicting aircraft was, “11 o'clock, one and a half, reciprocal, non-transponding”. The Oxford Tower controller was prompt in passing this Traffic Information directly to [DA42 C/S] together with further clarification of “no height information, nothing observed from the control tower”. It was noted that the Tower controller relayed the Traffic Information as “left, eleven o'clock, one mile, reciprocal to you” – the Tower controller noted within their report that, “Radar then called back with Traffic Information to pass to [DA42 C/S] which I repeated verbatim”, it was actually found that Radar reported this traffic as, “traffic eleven o'clock, one and a half, reciprocal”, the Tower relaying the conflicting traffic at a range of only one mile. The Tower controller did go on to update the Traffic Information as “previously mentioned traffic, left 11 o'clock, half a mile now, reciprocal to you, no height” until the instructor onboard [DA42 C/S] reported, “traffic in sight”. It was noted that use of the word “converging” would be preferable to highlight the potential risk of collision.

The updated Traffic Information provided by the Tower controller clearly came from what can be observed on the ATM (the Tower controller reported not being able to see the aircraft from the VCR on the internal phone conversation with the Oxford Radar OJTI). Although this isn't an approved use of the ATM at Oxford, it was unanimously agreed that the updated Traffic Information provided may very well have been what aided the pilot in seeing the conflicting aircraft and preventing a collision. The CAP493 was noted whereby it specifies that “nothing in this manual prevents controllers from using their own discretion and initiative in response to unusual circumstances”, therefore the actions of the Tower controller were deemed justified and are supported.

The METAR suggested appropriate flying conditions for the see and avoid principle to be effective, and with this reported weather it would be fair to infer that the Tower controller should have been able to see the conflicting unknown aircraft. The Oxford Radar OJTI does note in their initial report though that, “Weather conditions were hazy and we'd had several aircraft return to the aerodrome from the west due to unfit visibility”. So the reduced airborne visibility was known at the time.

The co-ordination between Radar and Tower was deemed to come at a time whereby the aircraft were already close and the distance between them closing. It was again agreed amongst UA's that had the unknown aircraft been spotted sooner, then co-ordination with Tower likewise would have likely occurred sooner, allowing more opportunity for the Tower controller to visually acquire and monitor the conflicting aircraft. Oxford MATS Pt2 guidance specifies that:

Aircraft transiting Oxford above 2500ft (QNH) will normally be retained by APP/APS, and at or below 2,500' (QNH) will be pre-noted to ADC, who will decide whether or not to work the aircraft. If required, the transiting aircraft will be transferred to ADC by 5nm from Oxford. ADC are responsible for providing traffic information to transit aircraft within 5nm of the Oxford overhead, whether or not they are actually working that aircraft. (MATS Pt2, Sec 1, Ch2).

In this circumstance the height of the unknown aircraft could not be known due to a lack transponder/Mode C readout. It was again agreed that the expectation from UA's would be for the Radar controller to alert the Tower controller to the presence of this aircraft in case of it being below this 2500ft threshold and therefore relevant to the Tower controller and the traffic they were working. Further MATS Pt2 guidance states that:

Aircraft should be transferred to ADC no later than 5NM unless co-ordinated otherwise. APS may choose to retain the aircraft for a longer period if (for example)...Providing or updating the pilot with information on relevant traffic within 5NM (MATS Pt2, Sec 4, Ch4).

Again, the initial UA review highlighted that it would have been preferable for the conflict to have been spotted sooner and consideration given to retaining the aircraft on the Radar frequency for the provision of accurate and regularly updated Traffic Information or breaking the aircraft off the approach under a 'duty of care'.

CONCLUSION

At time 1241 an Airprox occurred between [DA42 C/S] who was completing an ILS approach at Oxford and an unknown aircraft who was not in communication with Oxford ATC at the time. The unknown aircraft was visible on radar yet was seemingly unequipped with any form transponder or other electronic conspicuity device. Traffic Information was passed by Oxford but a late spotting of the confliction meant the Traffic Information came later than would have usually been expected. [The pilot of DA42 C/S] visually acquired the other aircraft and manoeuvred to avoid it, it is unknown whether the PIC of the unknown aircraft saw [the DA42] at any point.

CAA ATSI

The DA42 pilot reported that they were operating IFR in VMC, passing 1500ft descending on the ILS, approximately 4NM from touchdown on final approach for RW19. They were in receipt of an Aerodrome Control Service from Oxford Tower at the time of the Airprox. The pilot reported receiving two sets of Traffic Information from the Tower controller and, after the second set, they sighted the motor-glider approximately half a mile away 100-200ft below them. They commenced an immediate climb to avoid.

The Oxford Unit investigation report indicated that the Radar controller was a trainee under the supervision of an OJTI and that the DA42 pilot had been in receipt of a Traffic Service from the Radar controller prior to being transferred to the Tower frequency. Transfer of control took place when the aircraft was established on the ILS and had reached 6NM from touchdown. No Traffic Information on the unknown primary radar target (later identified by the DA42 pilot as the aircraft involved in the Airprox) was passed to the DA42 pilot prior to the transfer of control to the Tower controller.

The Tower controller described the weather conditions as hazy and difficult to see aircraft from the Visual Control Room. Several aircraft had recovered to the airfield from the west as a result of the weather conditions. RT contact with the Tower controller was established by the DA42 pilot at 1240:38, 39sec before CPA.

Important note: the screenshots in this report have been taken from the NATS Area radar recording and may not necessarily be indicative of what the Oxford radar controller could see on their radar display at the time of the event.

The radar controller reported that they had been aware that there was gliding activity in the D129 and Weston-on-the-Green area. After instructing the DA42 pilot to contact the Tower, they noticed that a primary radar contact had turned towards the gap between the D129 boundary and the Oxford ATZ boundary (close to the visual circuit area). They called the Tower controller at 1240:03 and asked them if they had two aircraft in the circuit, the Tower controller confirmed that there was only one aircraft in the circuit and advised the radar controller that they could not sight the unknown primary radar contact.



Figure 1 – 1240:03

At 1240:38 the DA42 pilot made initial RT contact with the Tower controller and advised that they were established on the ILS and requested a low approach and circuit. The pilot was instructed to continue the approach. The radar controller then called the Tower controller with Traffic Information to be passed to the DA42 pilot on the primary contact. The Tower controller passed Traffic Information to the pilot, *“left eleven o’clock, one mile, reciprocal to you.”* Note: this differed very slightly to what had been said by the radar controller, in that they had given the range as one and a half miles.

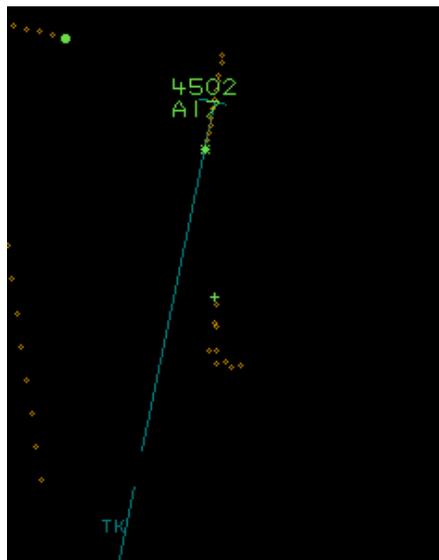


Figure 2 - 1240:38 the DA42 pilot made initial contact with the Tower controller.

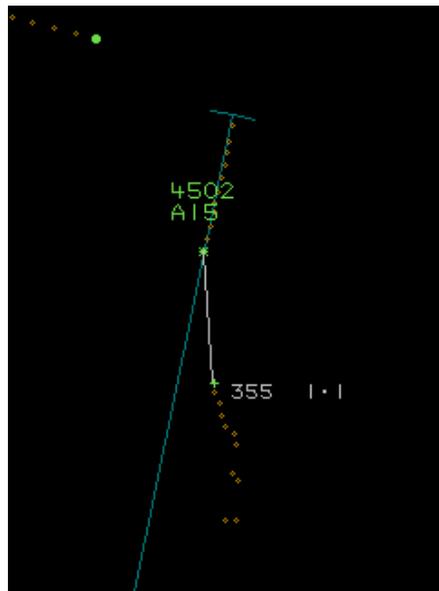


Figure 3 - 1241.00 first set of Traffic Information was passed and acknowledged.

The Tower controller then immediately updated the Traffic Information, “left eleven o’clock half a mile now, reciprocal to you, no height” and the DA42 pilot reported that they had the traffic in sight. The controller asked if the pilot had a rough altitude and an aircraft type, and the pilot responded that it was a motor-glider at 1300ft.



Figure 4 - 1241.14 Traffic Information was updated, and the pilot reported visual.

Note: After identifying the confliction and alerting the Tower controller, the radar controller remained on the telephone line to the Tower controller until the confliction was resolved.

At 1241:17 CPA occurred, with the aircraft separated by 0.1NM. The DA42 pilot reported that both aircraft were at the same level.

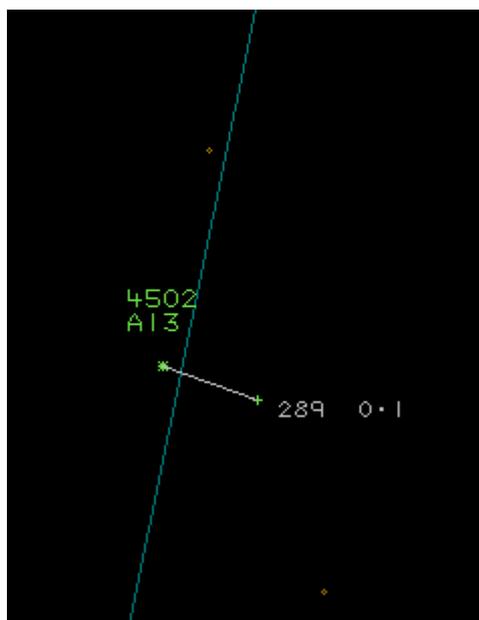


Figure 5 - 1241.17 CPA 0.1NM (using LLFIN)

The Oxford ATC investigation into the Airprox was very comprehensive and established that the radar controller had assumed that the primary radar contact was going to continue in a north westerly direction. Having observed so many similar tracks in the past that had resulted in landings at [a nearby aerodrome], they had expected that this track would do the same. Training discussions had also been ongoing between the OJTI and the radar trainee that may have resulted in less effective radar scanning in the lead-up to the event. These were the reasons provided for the late Traffic Information being passed to the DA42 pilot. The unit has captured these contributory factors in a lesson learning piece that will be used when delivering controller refresher training.

UKAB Secretariat

The DA42 and motor-glider pilots shared an equal responsibility for collision avoidance and not to operate in such proximity to other aircraft as to create a collision hazard.¹ If the incident geometry is considered as head-on or nearly so then both pilots were required to turn to the right.²

Comments

AOPA

This Airprox highlights the purpose of feathers on a chart and the consequences of ignoring them, there is also the requirement if there is an ATZ to announce one's position or request entry to the ATZ, improving everyone's SA.

Summary

An Airprox was reported when a DA42 and a motor-glider flew into proximity 4NM north of Oxford at 1241Z on Sunday 14th May 2023. The DA42 pilot was operating under IFR in VMC and in receipt of an ACS from Oxford. The motor-glider pilot could not be traced.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of a report from the DA42 pilot, radar photographs/video recordings, reports from the air traffic controllers involved and reports from the appropriate operating authorities.

¹ (UK) SERA.3205 Proximity.

² (UK) SERA.3210 Right-of-way (c)(1) Approaching head-on.

Relevant contributory factors mentioned during the Board's discussions are highlighted within the text in bold, with the numbers referring to the Contributory Factors table displayed in Part C.

The Board first discussed the actions of the DA42 pilot. They had been making an IFR, ILS approach into Oxford in hazy conditions and had been sent across to the Tower frequency by the radar controller. The Board agreed that the TAS fitted to the DA42 had not been able to detect the non-transponding motor-glider, so had not provided an alert (**CF6**). The pilot had been first told about the motor-glider when it had been 1NM away, but had only been given generic Traffic Information because ATC had not known the height of the primary-only conflicting traffic (**CF5**), therefore, with limited situational awareness and hazy flying conditions, the DA42 pilot had seen the motor-glider later than desirable (**CF7**) and had taken avoiding action by breaking off the approach.

Looking at the actions of Oxford ATC, members thought that the radar controller perhaps could have controlled more defensively and taken earlier action on the primary-only track as it routed through the gap between the Oxford ATZ and Weston-on-the-Green, particularly because Oxford was not afforded any protection by airspace for its approach traffic. The Board noted that it had not been until they had sent the DA42 pilot to the Tower frequency that the radar controller had realised that the primary-only track had been a factor and they then called the Tower controller to ask them to pass Traffic Information (**CF1**). Some members wondered whether at this point the controller could have instructed the DA42 to break off the approach, but the DA42 pilot had been receiving a Traffic Service from the radar controller prior to going to Tower, and the controller had therefore not been required to provide any avoidance advice. The fact that the conflicting traffic had been non-transponding meant that ATC had not known the height of the motor-glider and therefore could only pass generic Traffic Information (**CF2**).

Members then turned their deliberations to the actions of the unknown motor-glider pilot. They expressed some frustration that, despite numerous local airfields being contacted, it had not been possible to trace the pilot, because it would have been useful to understand the pilot's planning process when selecting that particular routing. The approach to Oxford is depicted with 'feathers' on VFR charts and the advice is that pilots should call the relevant ATC unit when they intend to 'fly within 10NM of any aerodrome marked with instrument approach feathers', which in this case had not happened (**CF3**, **CF4**). Members were keen to stress the folly of routing the wrong way up the approach path at a height likely to conflict with inbound traffic, particularly without calling ATC first. Indeed, some members considered that the routing displayed poor airmanship and a lack of understanding of other airspace users; furthermore, they expressed concern that pilots would plan to route through the gap between the Oxford ATZ and Weston-on-the-Green at all.

When assessing the risk of the Airprox, members considered the reports from both the DA42 pilot and the controllers, together with the radar replay screenshots. They noted that the DA42 pilot had not reported visual with the motor-glider until it had been called by ATC at 0.5NM, at which point the pilot felt uncomfortable enough with the separation that they felt the need to break off the approach. For this reason the Board agreed that safety had been much reduced and that there had been a risk of collision (**CF8**); Risk Category B.

PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK

Contributory Factors:

	2023073			
CF	Factor	Description	ECCAIRS Amplification	UKAB Amplification
Ground Elements				
• Situational Awareness and Action				
1	Human Factors	• ANS Traffic Information Provision	Provision of ANS traffic information	TI not provided, inaccurate, inadequate, or late
2	Contextual	• Traffic Management Information Action	An event involving traffic management information actions	The ground element had only generic, late, no or inaccurate Situational Awareness
Flight Elements				
• Tactical Planning and Execution				

3	Human Factors	• Aircraft Navigation	An event involving navigation of the aircraft.	Flew through promulgated and active airspace, e.g. Glider Site
4	Human Factors	• Communications by Flight Crew with ANS	An event related to the communications between the flight crew and the air navigation service.	Pilot did not request appropriate ATS service or communicate with appropriate provider
• Situational Awareness of the Conflicting Aircraft and Action				
5	Contextual	• Situational Awareness and Sensory Events	Events involving a flight crew's awareness and perception of situations	Pilot had no, late, inaccurate or only generic, Situational Awareness
• Electronic Warning System Operation and Compliance				
6	Technical	• ACAS/TCAS System Failure	An event involving the system which provides information to determine aircraft position and is primarily independent of ground installations	Incompatible CWS equipment
• See and Avoid				
7	Human Factors	• Identification/ Recognition	Events involving flight crew not fully identifying or recognising the reality of a situation	Late sighting by one or both pilots
• Outcome Events				
8	Contextual	• Near Airborne Collision with Aircraft	An event involving a near collision by an aircraft with an aircraft, balloon, dirigible or other piloted air vehicles	

Degree of Risk: B.

Safety Barrier Assessment³

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

Ground Elements:

Situational Awareness of the Confliction and Action were assessed as **partially effective** because the Oxford controller only had generic information from the primary-only radar contact.

Flight Elements:

Tactical Planning and Execution was assessed as **ineffective** because the motor-glider pilot flew through the approach lane, denoted on the VFR chart with feathers, and did not call Oxford ATC.

Situational Awareness of the Conflicting Aircraft and Action were assessed as **partially effective** because the DA42 pilot had generic situational awareness from the Traffic Information from ATC, however, this had not contained height information.

Electronic Warning System Operation and Compliance were assessed as **ineffective** because the TAS on the DA42 could not detect the non-transponding motor-glider.

See and Avoid were assessed as **partially effective** because the DA42 pilot saw the motor-glider late, but managed to take avoiding action by breaking off the approach.

³ The UK Airprox Board scheme for assessing the Availability, Functionality and Effectiveness of safety barriers can be found on the [UKAB Website](#).

Airprox Barrier Assessment: 2023073		Outside Controlled Airspace							
Barrier		Provision	Application	Effectiveness					
				Barrier Weighting					
				0%	5%	10%	15%	20%	
Ground Element	Regulations, Processes, Procedures and Compliance	✓	✓						
	Manning & Equipment	✓	✓						
	Situational Awareness of the Confliction & Action	⚠	⚠						
	Electronic Warning System Operation and Compliance	⊘	⊘						
Flight Element	Regulations, Processes, Procedures and Compliance	✓	✓						
	Tactical Planning and Execution	✓	✗						
	Situational Awareness of the Conflicting Aircraft & Action	⚠	✓						
	Electronic Warning System Operation and Compliance	✗	✓						
	See & Avoid	⚠	⚠						
Key:		<u>Full</u>	<u>Partial</u>	<u>None</u>	<u>Not Present/Not Assessable</u>	<u>Not Used</u>			
Provision	✓	⚠	✗	⊘					
Application	✓	⚠	✗	⊘					
Effectiveness									