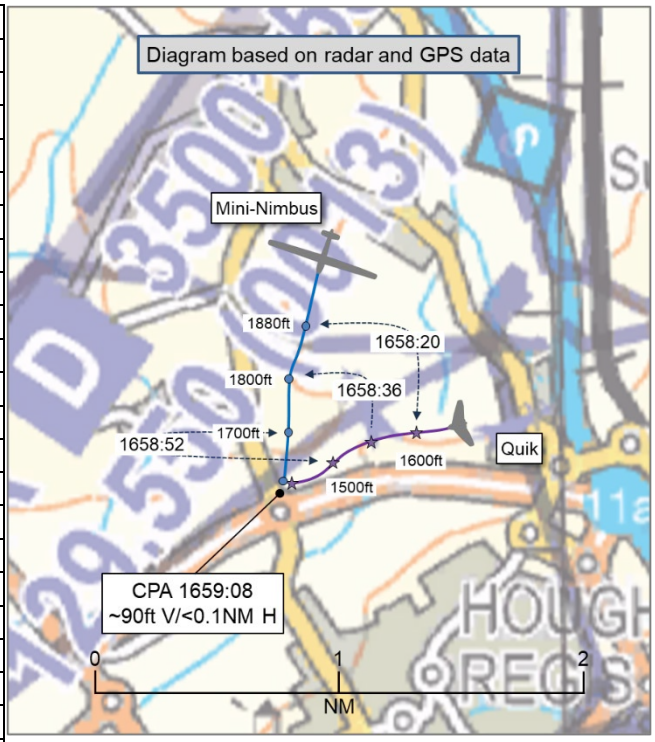
AIRPROX REPORT No 2024219

Date: 16 Aug 2024 Time: 1659Z Position: 5155N 00031W Location: Toddington

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	Mini-Nimbus	Quik
Operator	Civ Gld	Civ FW
Airspace	London FIR	London FIR
Class	G	G
Rules	VFR	VFR
Service	Listening Out	Listening Out
Provider	Dunstable Downs	Luton Approach
Altitude/FL	~1620ft	1530ft
Transponder	Not fitted	A, C, S
Reported		
Colours	White and red	White and yellow
Lighting	None	None
Conditions	VMC	VMC
Visibility	>10km	>10km
Altitude/FL	2000ft	1575ft
Altimeter	QFE (1017hPa)	QNH
Heading	192°	240°
Speed	60kt	63kt
ACAS/TAS	PowerFLARM	PilotAware
Alert	None	None
Separation at CPA		
Reported	<30ft V/0ft H	Not seen
Recorded	~90ft V/<0.1NM H	



THE MINI-NIMBUS PILOT reports that they had been on a final glide tracking southwest into [destination airfield] after a 230km cross-country flight from the same airfield. They encountered a microlight performing a climb [they recall], tracking northwest. With reasonable initial separation, the Nimbus pilot had continued to fly their heading as any sharp turns could have prevented them from reaching [their destination] while low at the end of the thermal day. Furthermore, there are very limited out-landing options from that position until [at destination airfield]. They had observed [that] the microlight pilot, in their open cockpit, had had their head pointed [toward] their direction, and hence had been reasonably confident in [the microlight pilot's] ability to spot them and perform the required avoiding action. However, the pilot did not adjust their heading or stop their climb, which was significantly steeper than the Nimbus pilot had first appreciated. As such, with insufficient separation for them to start a turn, they had pulled back as best they could to achieve separation, although at only 60kt, this had limited effect. The microlight passed within a wingspan below them while continuing to steeply climb on their track, and the Nimbus pilot had continued on to land at [destination airfield].

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

THE QUIK PILOT reports that they had been flying on a VFR flight from [departure airfield] to [destination airfield] with another aircraft, [Skyranger]. Both aircraft had [electronic conspicuity equipment] fitted and the Quik pilot reports having had a Mode S transponder with a certified GPS source for ADS-B out. At this section of the flight [the Quik pilot] had been following approximately a mile behind the Skyranger and offset slightly to their right. Both pilots had planned the same route and the Quik pilot reports having been in the following aircraft, following both the planned route and the Skyranger. They had planned a more direct route further north of Luton airspace but in the early part of the flight the Quik pilot had been ahead of the Skyranger and thought they had wanted to fly further south, so they had chosen to route closer to Luton and the Quik pilot had performed a circular turn (see Figure 2) so that they could position behind the Skyranger and continue the flight. They had remained

in Class G airspace throughout and did not infringe Luton airspace, but as they had been about a mile north of Luton airspace they had set the Luton listening squawk and tuned into their Approach frequency so that Luton could communicate with them if they needed to. After having repositioned to be flying behind the Skyranger, rather than in front, they had continued the flight westwards. The Quik pilot reports that they have no recollection of there being any Airprox's or anything they would consider an Airprox in the entire flight, and the Skyranger pilot had also stated that they didn't see any gliders either. The Quik pilot notes that they are of course aware of Dunstable Downs gliding club and had been maintaining a good lookout throughout, supported by [electronic conspicuity equipment] for traffic information on their SkyDemon moving map. On both the SkyDemon log and the [electronic conspicuity equipment] log they note that they can see that they had descended from approximately 1872ft to 1524ft before and after the reported Airprox position. This could have been to increase separation from the glider or it could have been just normal VFR flight. They have no recollection of which was the case because they were not aware of a specific Airprox. It therefore could have been that they had seen the glider and descended, not having considered it an Airprox, or that they quite simply didn't see the glider at all. Studying the [electronic conspicuity equipment] trace they saw no alerts whatsoever from any other aircraft so had not been reacting to a traffic alert. Either [the Nimbus] didn't have EC or the Quik pilot's EC didn't see their EC. As the Quik pilot noted earlier, they have EC and a Mode S transponder with certified ADS-B out so do feel that they had done everything they could have to improve their [conspicuity] and visibility to other aircraft. They continued the planned flight behind the Skyranger westwards, it was an uneventful flight.

THE LUTON CONTROLLER reports that following a review of this event, the Quik had been squawking 0013 at the time of the event, which is the Luton listening squawk. The controller has reviewed the radio recordings for the event and the pilot did not call onto the Luton frequency during that time. As such, Luton Approach was not involved in this event.

Factual Background

The weather at Luton Airport was recorded as follows:

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METAR EGGW 161650Z AUTO VRB04KT 9999 NCD 23/08 Q1014=
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Analysis and Investigation

UKAB Secretariat

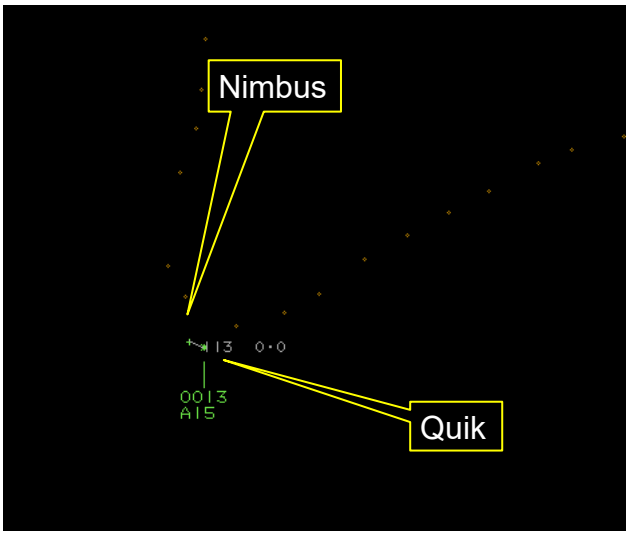


Figure 1: CPA 1659:08 ~90ft V/<0.1NM H

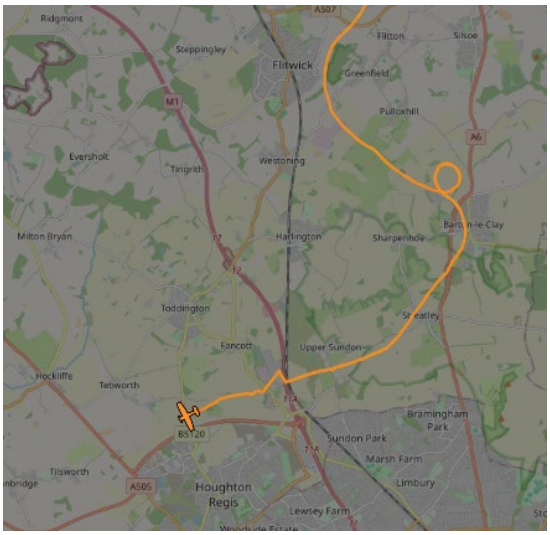


Figure 2: ADS-B track of the Quik shown at time of the CPA. The circular path described by the pilot can be seen and is timed at ~1651.

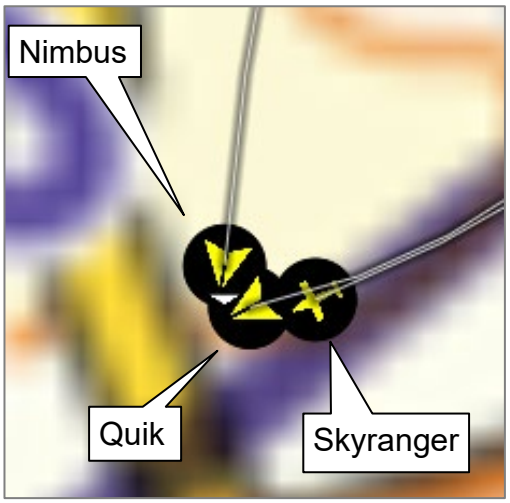


Figure 3: At 1659:05
Nimbus 1647ft and -474fpm
Quik 1500ft and +128fpm

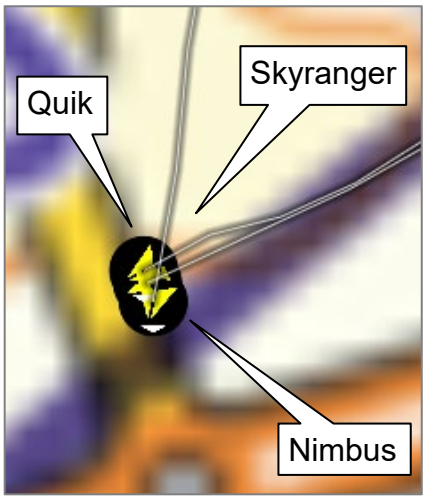


Figure 4: At1659:10
Nimbus 1585ft and -593fpm
Quik 1500ft and -192fpm

The Nimbus pilot in their report made no reference to a second aircraft (the Skyranger). Figure 3 above shows the Skyranger to be behind the Quik; this may be an anomaly within the data source. Figures 3 and 4 (extracted from the CAA's Airspace Analyser Tool) show the respective altitudes and ROC/D at 3sec before CPA and 2sec after.

The Nimbus and Quik 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 converging then the Quik pilot was required to give way to the Nimbus.[2]

Comments

AOPA

This is another example where investment in electronic conspicuity has an incompatible interface. It is hoped the Department for Transport will mandate a common form of compatible electronic conspicuity before there is a mid-air collision.

BGA

Glider pilots typically aim to fly their cross-county flights at the fastest possible average speed. Towards the end of a cross-country flight in thermal conditions, the pilot plans to climb to an altitude sufficient to fly directly to their destination airfield and arrive with enough height to land safely. This is termed "final glide" in gliding parlance. When planning a final glide, it is prudent to maintain an appropriate height reserve in case it is necessary to manoeuvre enroute, for example to avoid other traffic, or if sinking air is encountered, both of which occurred in this case.

Summary

An Airprox was reported when a Nimbus and a Quik flew into proximity at Toddington at 1659Z on Friday 16th August 2024. Both pilots were operating under VFR in VMC, neither pilot was in receipt of a Flight Information Service.

[1] (UK) SERA.3205 Proximity.
[2] (UK) SERA.3210 Right-of-way (c)(2) Converging.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of reports from both pilots, radar photographs/video recordings, GPS data and a report from the Luton controller (who was not involved). 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 firstly discussed the actions of the Mini-Nimbus pilot, noting the stage of their flight and the aim of the pilot in retaining altitude to enable an approach to their destination. Members accepted that, in this area, there are few alternative options available to a glider pilot, recognising the desire to preserve energy and agreed with the pilot's view that at slow speed, a late avoidance manoeuvre has limited effect. The Board opined that the Mini-Nimbus pilot had reacted late (**CF1**) having expected the Quik pilot to have seen them and perform an avoidance manoeuvre of their own, but had then left their avoidance manoeuvre so late that they had flown into conflict (**CF4**) with the Quik. The Quik pilot had not seen the Skranger that had been ahead of the Quik. As neither the Mini-Nimbus or Quik pilots had been actively using radios, and although the EC equipment carried by the Quik had been capable of alerting that pilot to the presence of the Mini-Nimbus, it had not issued an alarm and neither pilot had gained any situational awareness (**CF2**) of the presence of the other aircraft prior to the glider pilot sighting the Quik.

Turning to the actions of the Quik pilot, members felt that, although the pilot had maintained a listening watch on the Luton Approach frequency, active use of a radio if possible, alongside active EC equipment, increases the situational awareness for all in the same situation. Members positively supported the carriage and use of EC equipment and felt that it had been unfortunate that in this case it had not been two-way compatible, thereby reducing its utility and, in this case, had not issued an alert to the Quik pilot of the presence of the Mini-Nimbus and the equipment carried by the Mini-Nimbus had not been capable of receiving emissions from the Quik (**CF3**). The Board wished again to call on the Department for Transport to declare a single common standard of EC for use by General Aviation pilots. The Board also agreed that, ultimately, the Quik pilot had not gained visual contact with the Mini-Nimbus (**CF5**).

Concluding their discussion, members agreed that both pilots had had no situational awareness of the presence of the other aircraft. The pilot of the Mini-Nimbus had sighted the Quik and, in aiming to conserve altitude, had made a late effort to avoid the Quik, whilst the pilot of the Quik had not sighted the Mini-Nimbus at all. Members agreed that the separation between the Mini-Nimbus and the Quik had been such that the safety of the aircraft had not been assured and that there had been a risk of collision (**CF6**). The Board assigned Risk Category B to this event.

PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK

Contributory Factors:

	2024219			
CF	**Factor**	**Description**	**ECCAIRS Amplification**	**UKAB Amplification**
	Flight Elements			
	• Tactical Planning and Execution			
1	Human Factors	• Insufficient Decision/Plan	Events involving flight crew not making a sufficiently detailed decision or plan to meet the needs of the situation	Inadequate plan adaption
	• Situational Awareness of the Conflicting Aircraft and Action			
2	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			
3	Human Factors	• Response to Warning System	An event involving the incorrect response of flight crew following the operation of an aircraft warning system	CWS misinterpreted, not optimally actioned or CWS alert expected but none reported
	• See and Avoid			

4	Contextual	• Loss of Separation	An event involving a loss of separation between aircraft	Pilot flew into conflict
5	Human Factors	• Monitoring of Other Aircraft	Events involving flight crew not fully monitoring another aircraft	Non-sighting or effectively a non-sighting by one or both pilots
	• Outcome Events			
6	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 Assessment[3]

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

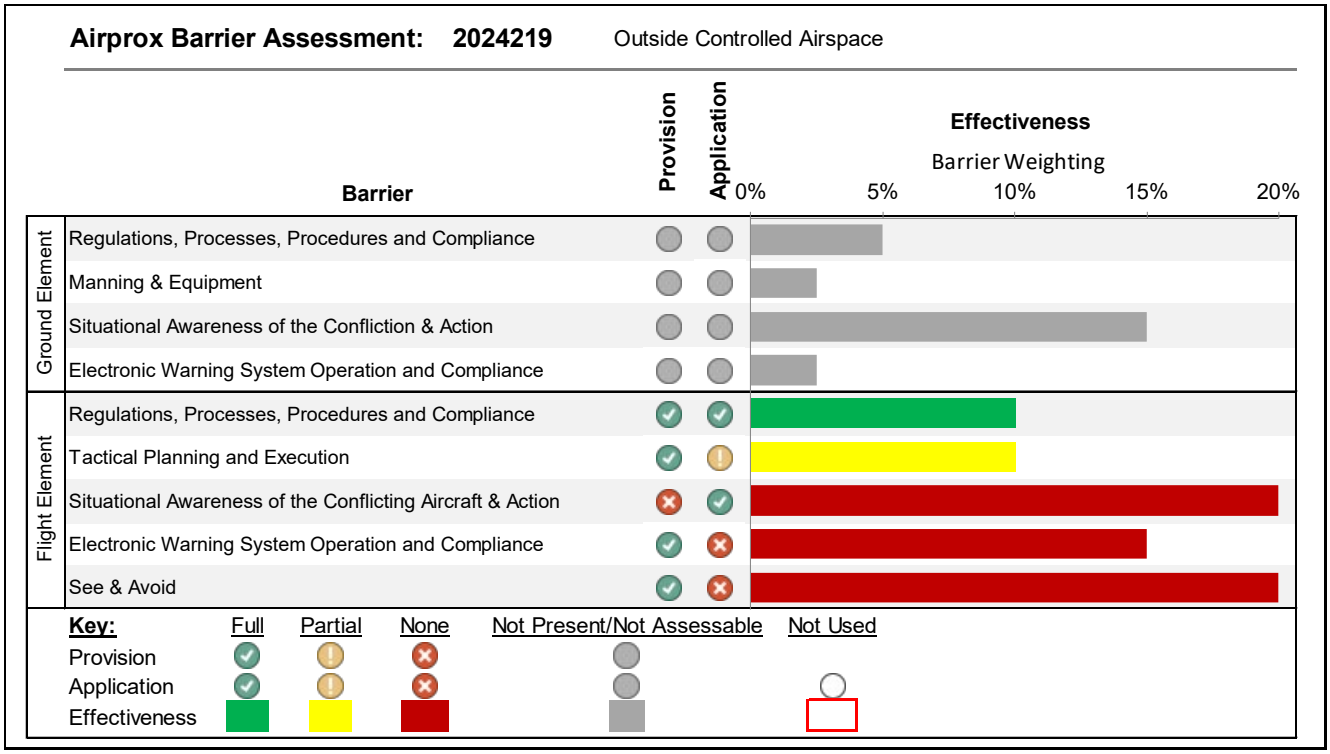
Flight Elements:

Tactical Planning and Execution was assessed as **partially effective** because the Mini-Nimbus pilot, having seen the Quik, could have initiated earlier avoiding action.

Situational Awareness of the Conflicting Aircraft and Action were assessed as **ineffective** because neither pilot had any situational awareness of the presence of the other aircraft.

Electronic Warning System Operation and Compliance were assessed as **ineffective** because although the Quik pilot had carried electronic conspicuity equipment capable of receiving emissions from the Min-Nimbus, no alerts were recorded.

See and Avoid were assessed as **ineffective** because the Quik pilot did not see the Mini-Nimbus and the Mini-Nimbus pilot delayed their avoiding action until such time as the safety of the aircraft had not been assured.



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