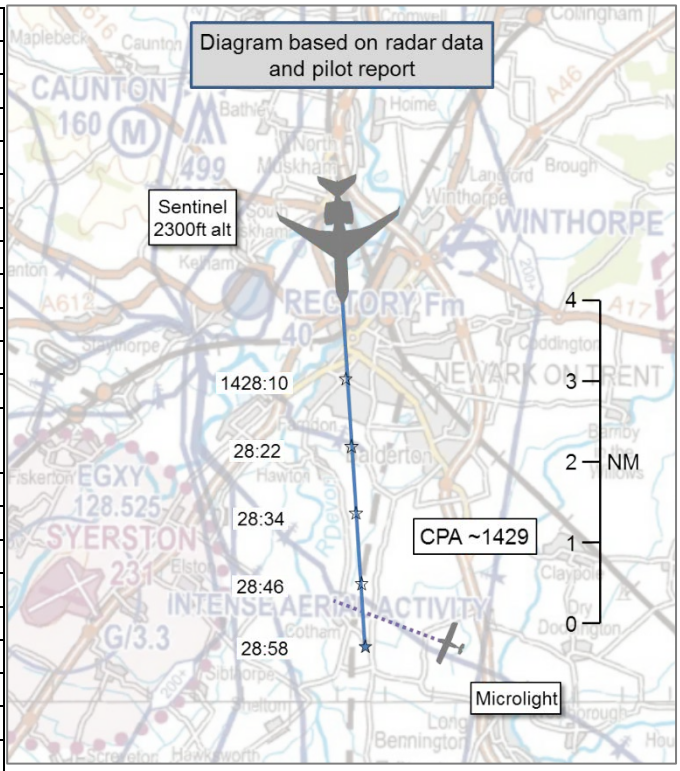
AIRPROX REPORT No 2018248

Date: 05 Sep 2018 Time: 1429Z Position: 5302N 00050W Location: 5nm east Syerston

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	Sentinel R1	Microlight
Operator	HQ Air (Ops)	Unknown
Airspace	London FIR	London FIR
Class	G	G
Rules	IFR	
Service	Traffic	
Provider	Waddington	
Altitude/FL	2300ft	
Transponder	A, C, S	
Reported		Not reported
Colours	Grey	
Lighting	Nav, beacon, strobe, landing	
Conditions	IMC	
Visibility	1km	
Altitude/FL	2300ft	
Altimeter	QNH (1021hPa)	
Heading	180°	
Speed	250kt	
ACAS/TAS	TCAS I	
Alert	None	
Separation		
Reported	300ft V/¼nm H	
Recorded	NK	



THE SENTINEL PILOT reports being in receipt of radar vectors for the PAR to Waddington RW02. The aircraft was flying 'in and out of cloud' when the flight-deck crew observed a yellow, green and red microlight pass underneath. There was insufficient time to take avoiding action. ATC were immediately informed, having not previously reported a contact in the vicinity. No TCAS contact was observed by the crew prior to the incident. On a subsequent instrument circuit ATC had a 'weak contact' in the same area as the Airprox and vectored the aircraft to avoid.

He assessed the risk of collision as 'High'.

THE MICROLIGHT PILOT could not be traced.

THE WADDINGTON APPROACH CONTROLLER reports that he had one aircraft on frequency, a Sentinel inbound to Waddington under a Traffic Service. The aircraft was on the downwind leg having been vectored slightly wider than usual to allow for a descent from altitude after a late handover by Swanwick Mil. As the aircraft was on the downwind leg, the pilot reported that they had just overflown a light-aircraft with an estimated separation of 200-300ft. At no point had the controller observed a radar contact in the vicinity of the Sentinel. The controller noted that the Sentinel was his only traffic and that he had ample capacity to detect a radar contact if it occurred. Once the Sentinel radar trail had moved further south, he observed a very faint primary contact about 3nm north of the Sentinel's position. The controller noted that the faint contact continuously faded and re-established.

THE WADDINGTON SUPERVISOR reports that she was monitoring the radar R/T frequencies. She heard the Sentinel pilot report the light-aircraft slightly below but there was nothing [on radar] in the vicinity at the time. As the Sentinel continued south she did observe a faint contact to the north of the Sentinel's position. She checked with the LARS controller whether they were working any aircraft in the

vicinity which they confirmed they weren't. The Sentinel continued inbound to Waddington without further issues. There was nothing on frequency at the time in the area of the Sentinel, and Waddington ATC were unable to identify the primary contact.

Factual Background

The weather at Waddington was recorded as follows:

```
METAR EGXW 051450Z 01007KT 8000 -DZ FEW010 OVC018 15/13 Q1021 WHT BECMG NSW FEW020 BKN030
BLU=
METAR EGXW 051350Z 01008KT 9999 FEW013 BKN017 16/13 Q1021 WHT BECMG BKN025 BLU=
```

Analysis and Investigation

Military ATM

An Airprox occurred on 5 Sept 18 at approximately 1429 UTC, about 5nm east of Syerston between a Sentinel and an unknown microlight. The Sentinel pilot was in receipt of a Traffic Service from Waddington Approach, it is not known if the microlight pilot was in receipt of an Air Traffic Service.

The Waddington Approach controller noted their workload as low with the Sentinel being the only aircraft on frequency. No traffic was observed on the track of the Sentinel and, following declaration of the incident, neither the Approach Controller nor the Supervisor were able to immediately identify the contact on radar although both noted that a faint primary return was seen to appear and then fade in the incident location a short time later. Analysis of NATS radars did not show the microlight at any point on the track of the Sentinel.

The Sentinel was correctly identified and placed under a Traffic Service. Traffic information on conflicting traffic, when seen on radar, was appropriately passed to the pilot. Given that neither the controller involved, nor the Supervisor saw a radar contact at the time of the incident indicates that it was probably not showing on the Waddington Approach Controller's screen, thus denying him the opportunity to pass Traffic Information.

UKAB Secretariat

The Sentinel and microlight 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].

Occurrence Investigation

Local civilian airfields were contacted, all of whom confirmed that they had had no microlight movements at the time of the Airprox.

Comments

HQ Air Command

This Airprox took place in busy Class G Airspace. Despite RAF Waddington contacting all local airfields from which the microlight might have originated, the pilot could not be traced. Although one cannot be certain, it would appear unlikely that the microlight was carrying a transponder or in receipt of an ATS. Also, it didn't provide a radar return to the Waddington controller prior to the incident. So, although the Sentinel was under a Traffic Service, the ATC barrier was not effective. The Sentinel was fitted with TCAS but again, the lack of return from the microlight made this barrier ineffective.

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

The only viable barrier that was left was see-and-avoid. From METAR reports at Waddington, it is likely that the microlight was operating at or just below the cloud base within a busy AIAA. Given that the Sentinel was operating 'in and out of cloud' and at 250kts, by the time the microlight was seen there was insufficient time to take avoiding action; it is fortunate that the aircraft were not on a collision course.

This Airprox serves as a stark reminder that lookout can be the only barrier available to prevent MAC, despite TCAS being fitted to the Sentinel and their being in receipt of a Traffic Service. Since this event, RAF Waddington has undertaken work to increase local awareness at the Lincolnshire Airspace User Group.

Summary

An Airprox was reported when a Sentinel R1 and an unknown microlight flew into proximity near Waddington at about 1429Z on Wednesday 5th September 2018. The Sentinel pilot was operating under IFR in intermittent IMC in receipt of a Traffic Service from Waddington Approach.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

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

Members quickly agreed that this serious incident highlighted that although the freedoms of Class G airspace were there to be enjoyed by all, these freedoms came with responsibilities that required thought and planning to ensure that operations were conducted safely. Based on the Sentinel pilot's report of being 'in and out of cloud', and the recorded weather conditions for Waddington, the Board agreed that the reported microlight pilot was most likely operating either in a gap in the clouds or near to the cloudbase. Whilst acknowledging that the microlight pilot may well have been VMC in such conditions in the precise definition of the rules, members agreed that this was a most unwise course of action in a non-radar significant aircraft, with no means of electronic conspicuity, being flown in a notified Area of Intense Aerial Activity in which fast-moving military traffic could be expected as a regular occurrence. The microlight pilot would have been much better advised to have contacted Waddington LARS, and in any case to have remained clear of cloud by a sensible margin.

Without the microlight pilot's narrative, it was not possible to explore fully the circumstances of this incident and so the Board could not definitively come to any conclusions as to the microlight pilot's actual circumstances or his decision to operate where he did. As a result, members could only come to a conclusion that the incident was probably best described as a conflict in Class G. With regard to the risk, and after some discussion about the likely accuracy of the Sentinel pilot's estimate of vertical separation, members agreed that, with the Sentinel being IMC, it's pilot had had little opportunity to see and avoid the microlight. The Sentinel pilot's detailed description of the microlight was such that some members thought he may have over-estimated the separation at CPA and that safety had been reduced to the bare minimum for the prevailing conditions (Category A). However, in the end, the Board agreed that all that could reliably be said was that safety had been significantly reduced below the norm; risk Category B.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: A conflict in Class G.

Degree of Risk: B.

Safety Barrier Assessment[2]

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

ANSP:

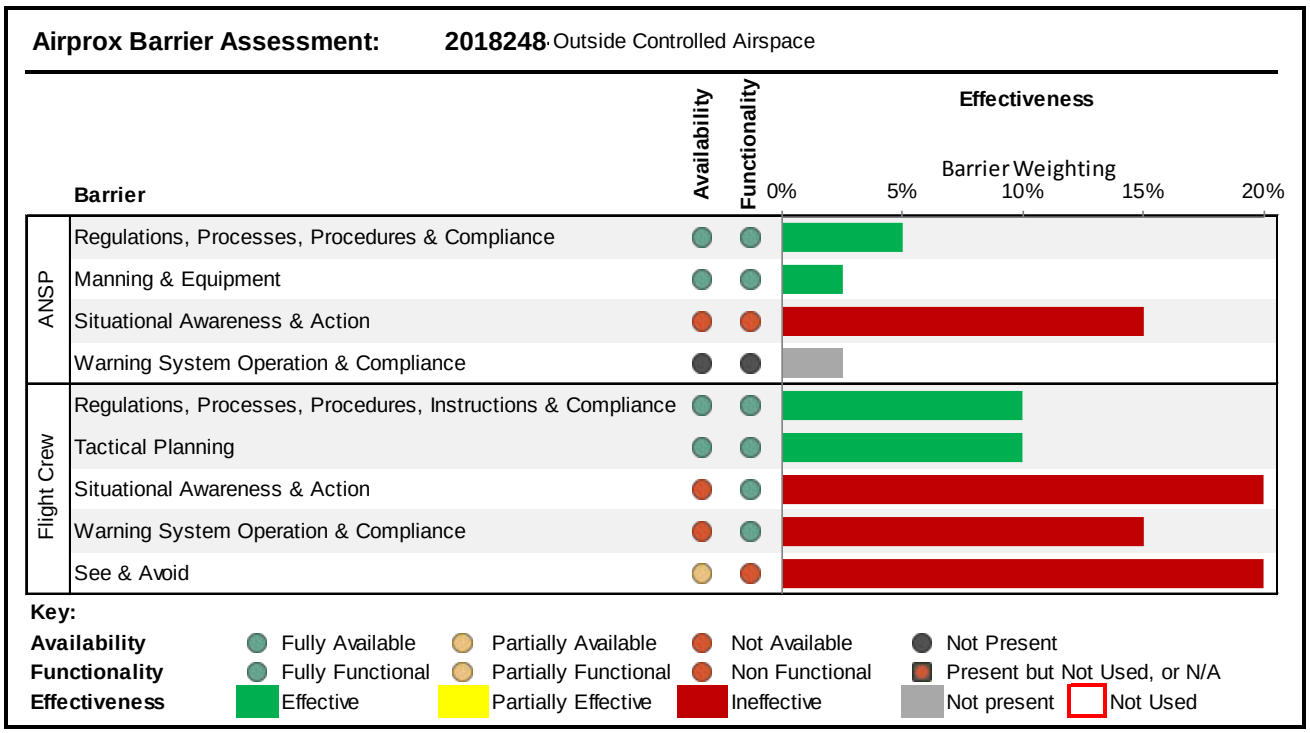
Situational Awareness and Action were assessed as **ineffective** because the unidentified microlight did not produce a secondary or significant primary return and therefore the controller could not have been aware of its presence.

Flight Crew:

Situational Awareness and Action were assessed as **ineffective** because the Sentinel crew had no information to make them aware of the microlight until they saw it.

Warning System Operation and Compliance were assessed as **ineffective** because the microlight was not electronically conspicuous to the Sentinel and reported separation was such that it was considered unlikely that the microlight pilot was aware of the approaching Sentinel.

See and Avoid were assessed as **ineffective** because the IMC Sentinel pilot did not see the microlight until about CPA, and the speed of approach, reported separation and weather conditions were such that it was considered unlikely the microlight pilot had seen the Sentinel in time to take avoiding action.



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