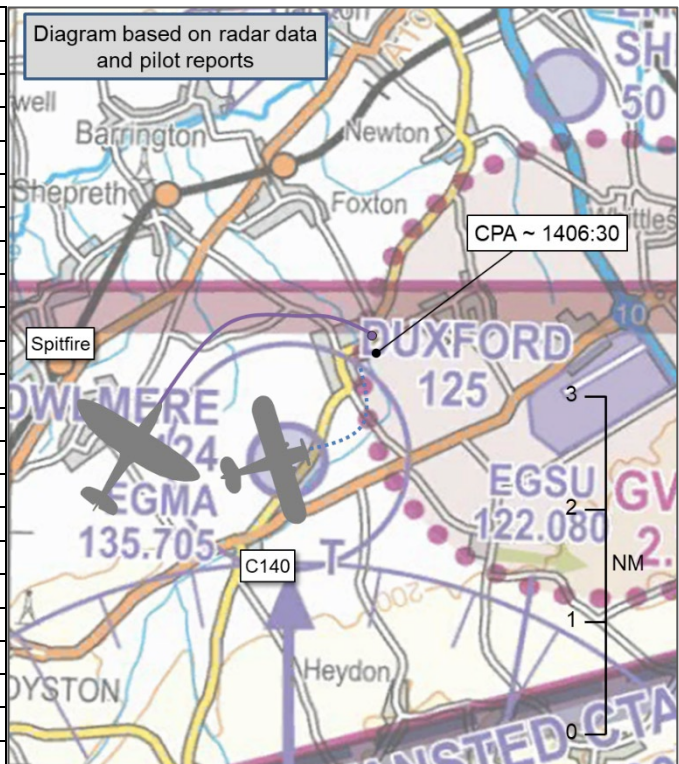


AIRPROX REPORT No 2021097

Date: 19 Jun 2021 Time: 1406Z Position: 5205N 00001E Location: Fowlmere

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	C140	Spitfire
Operator	Civ FW	Civ FW
Airspace	London FIR	London FIR
Class	G	G
Rules	VFR	VFR
Service	ACGS ¹	AFIS
Provider	Fowlmere	Duxford
Altitude/FL	NK	NK
Transponder	Not fitted	None ²
Reported		
Colours	Silver	Green, Brown, Grey
Lighting	Nav	Nil
Conditions	VMC	VMC
Visibility	5-10km	>10km
Altitude/FL	800ft	700ft
Altimeter	QFE	QNH
Heading	007°	130°
Speed	80kt	220kt
ACAS/TAS	Not fitted	Not fitted
Separation		
Reported	0ft V/<100m H	200ft V/200m H
Recorded	NK	



THE C140 PILOT reports that while performing LH circuits (to the north) to RW07 at Fowlmere they heard another plane in the circuit (C152) calling about a near miss with a Spitfire heading in the opposite direction just before turning base leg. They started looking for it and when turning from crosswind to downwind they suddenly noticed the Spitfire to their left closing very quickly. The other pilot did not seem to see the C140, because they were flying head on, without changing heading, the C140 pilot dived and turned away. The Spitfire was joining the circuit at Duxford. Before first take-off the C140 pilot made a radio call to Duxford on 122.080 (as usual according to the local procedures and agreement) making them aware of their intention to fly LH circuits, RW07. Duxford ATC acknowledged that they had received all the information. They then changed back to Fowlmere Traffic on 135.705 to conduct the circuits.

The pilot assessed the risk of collision as ‘High’.

THE SPITFIRE PILOT³ reports that they flew 4 sorties on this particular day, and with multiple problems of Fowlmere traffic infringing the Duxford circuit this year, they could not recall if this was the occasion. What they described was one particular event that stuck out. They were in the Duxford circuit, left base for RW 06, midway between the villages of Thriplow and Fowlmere. A low-wing, single engine aircraft was seen in their 2 o'clock at a range of 800yd. They did not take avoiding action as the relative motion meant there was no chance of collision. The pilot noted that the only protection against these infringements has been to keep a particularly close eye on ground movements at Fowlmere airfield whilst either approaching or in the Duxford circuit, particularly when RW06 is in use at Duxford. Following this incident, the pilot spoke to the Duxford airfield management who said they were in the

¹ The pilot reported receiving a Traffic Service, however Fowlmere provides AGCS only.

² A and C reported but not seen on radar.

³ The reporting pilot initially reported the wrong date and despite being asked to confirm, this was not corrected for some weeks, consequently once corrected the Duxford pilot and AFISO had little memory of the incident.

process of attempting to get the operators at Fowlmere to engage in working out a Letter of Agreement. It was the pilot's belief that this has now been agreed and signed.

The pilot assessed the risk of collision as 'None'.

THE DUXFORD AFISO reports that they had no knowledge that the Airprox occurred.

Factual Background

The weather at Stansted was recorded as follows:

METAR EGSS 191420Z AUTO 07008KT 9999 OVC015 15/12 Q1014=

Analysis and Investigation

CAA ATSI

The C140 had been conducting circuit training in a left-hand pattern to RW07 at Fowlmere, and the Spitfire had been general handling to the north-west of Duxford (Figure 1).

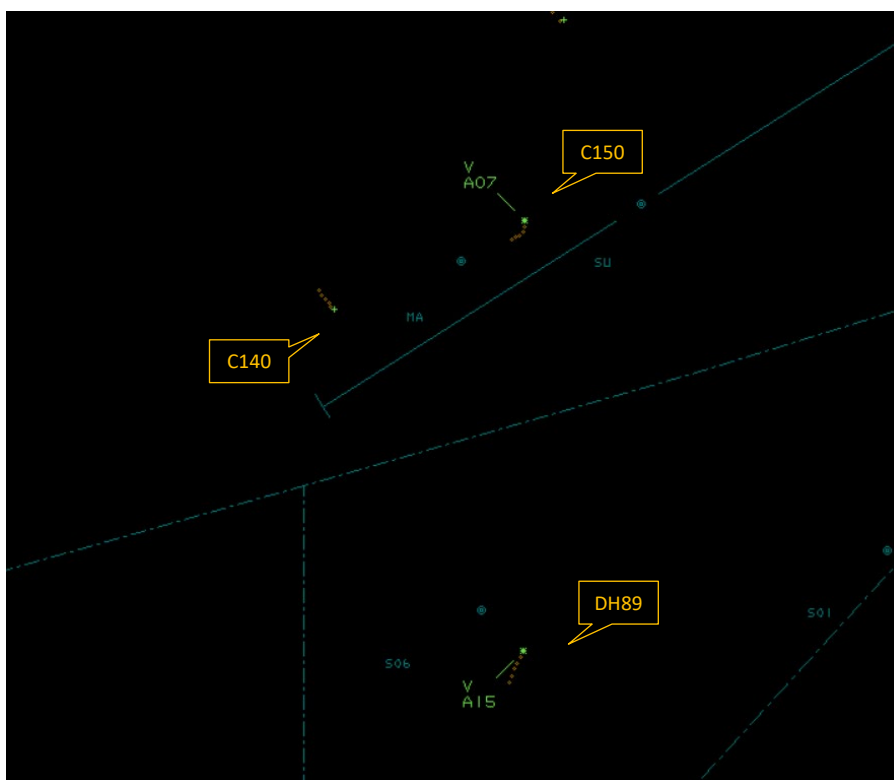


Figure 1 – 1403:30

Screenshots were taken from the area radar replay. Neither the C140 nor the Spitfire were transponding, and so neither their levels nor their identities could be determined. However, based on written reports and RTF calls made, ATSI is confident as to the identities indicated on the screenshots. RTF recordings were provided to ATSI for the period 1405:37+ for specific transmissions on the Duxford frequency, as well as those received within the control tower at Duxford for the Fowlmere frequency.

At 1405:37 the Duxford AFISO, apparently in response to a call from the Spitfire pilot, requested they report on finals for a run and break. The Spitfire pilot confirmed they were about one minute out. The Duxford AFISO then advised a DH89 joining from the south of the plan to have the Spitfire come in ahead of them. This was acknowledged by the DH89 pilot who advised that they were holding south of Fowlmere and would move a mile further to the west (Figure 2).

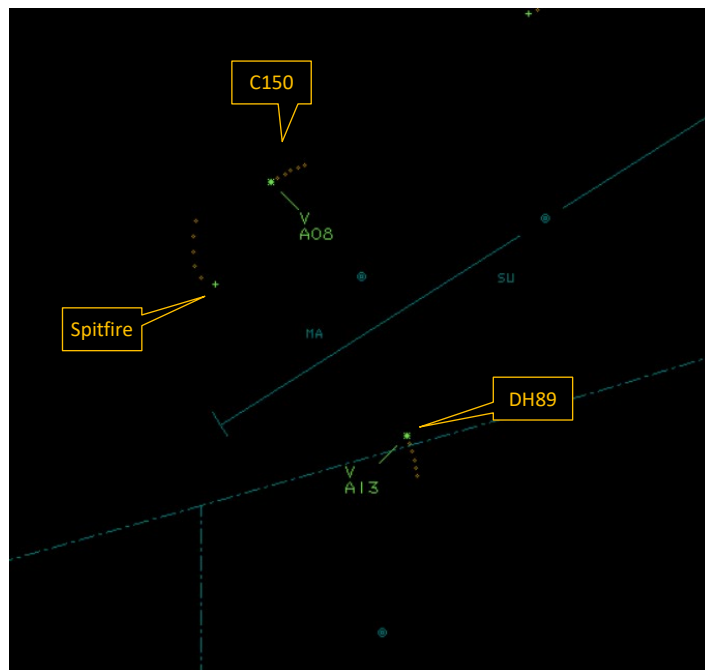


Figure 2 – 1405:37

The contact believed to be the Spitfire was then observed to fly on a north-easterly track to the north of Fowlmere, although its level could not be determined (Figures 3 & 4).

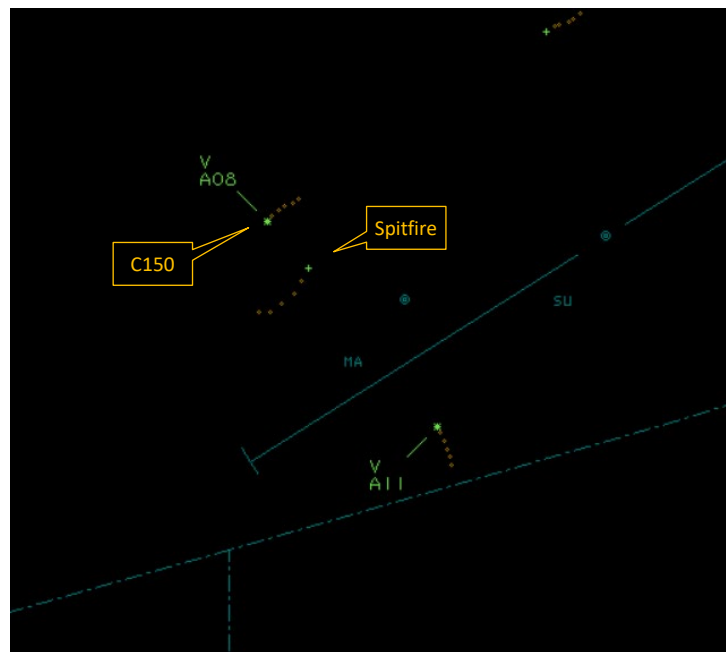


Figure 3 – 1406:00

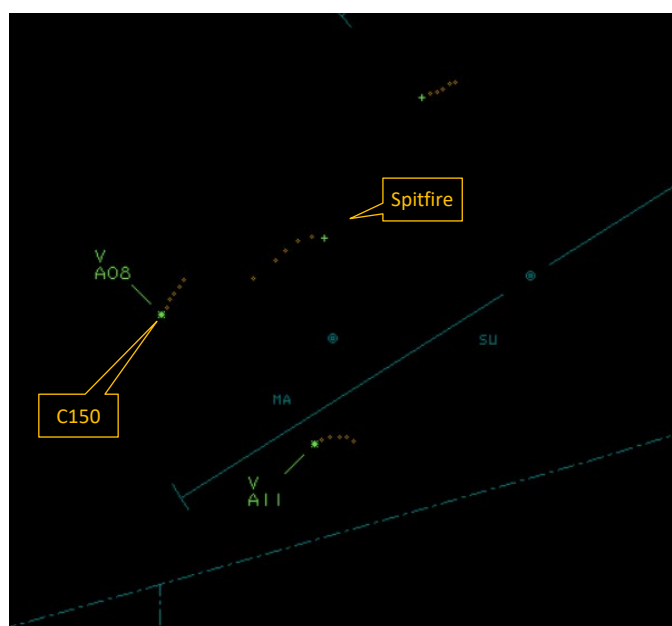


Figure 4 – 1406:30

The Spitfire radar contact was intermittent throughout this period, whilst the DH89 at 1300ft and a C150 in the Fowlmere circuit at 800ft were both displayed as strong primary and secondary contacts.

The C150 conducting left-hand circuits at Fowlmere, reported turning onto base leg on the Fowlmere frequency at 1406:41. Four seconds later at 1406:45 the Spitfire reported on finals on the Duxford frequency and was given a discretionary clearance for their run and break. The C140 was not visible on the radar replay at this time, but working back from the point a contact believed to be the C140 was first observed again, at 1408:52, (see Figure 7), it is considered likely that CPA took place in this area (Figure 5).

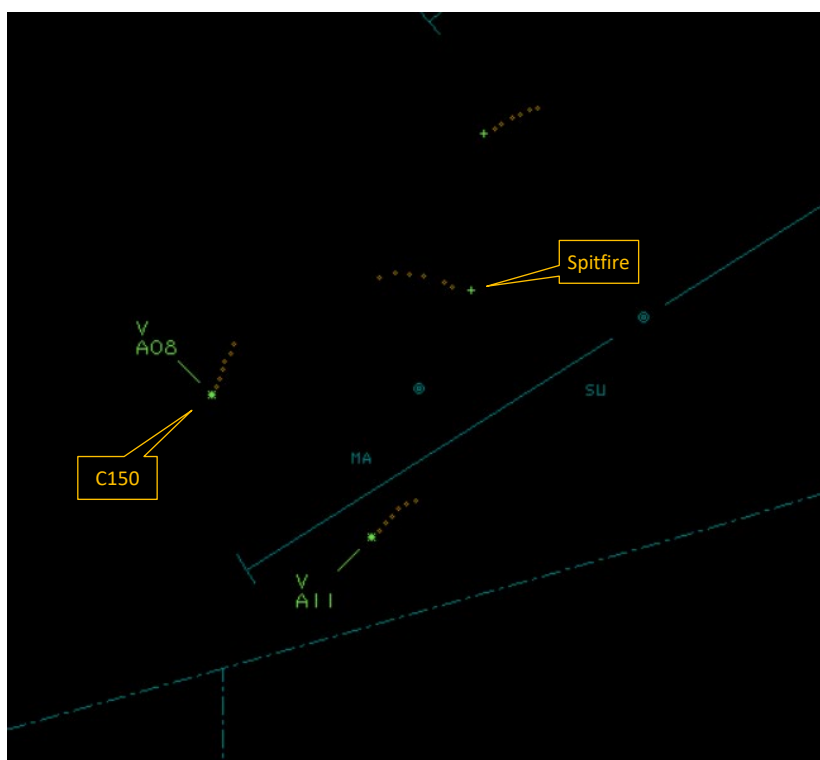


Figure 5 – 1406:45

At 1406:59 the C140 was heard to advise on the Fowlmere frequency that they were changing to Duxford. At 1407:06, (Figure 6), the C140 established communications on the Duxford frequency,

and went on to advise that they had had traffic, believed to be a Spitfire, passing “*across our circuit – causing a threat*”, and stating that there were two aircraft in the circuit, which was acknowledged by the Duxford AFISO. They advised that they were considering reporting an Airprox before then leaving the Duxford frequency for the Fowlmere frequency once more.

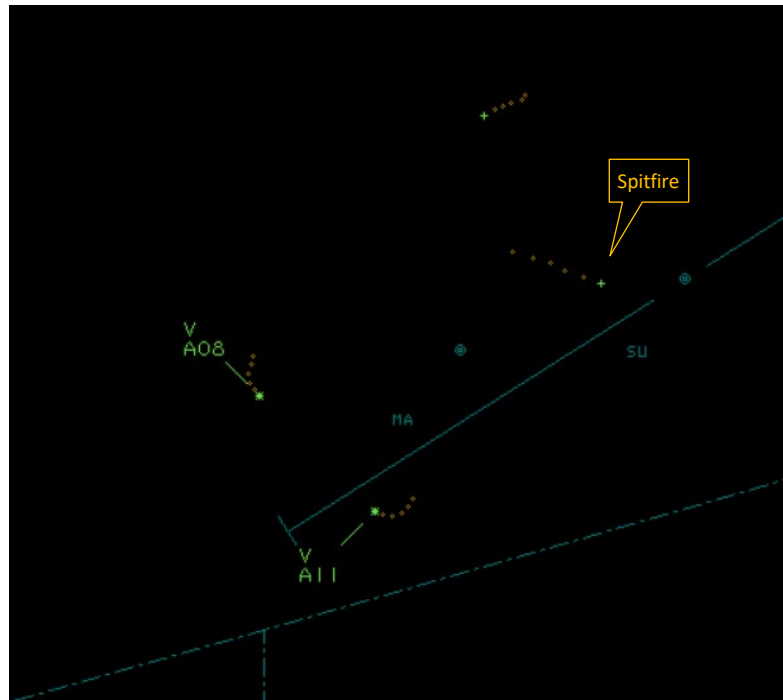


Figure 6 – 1407:06

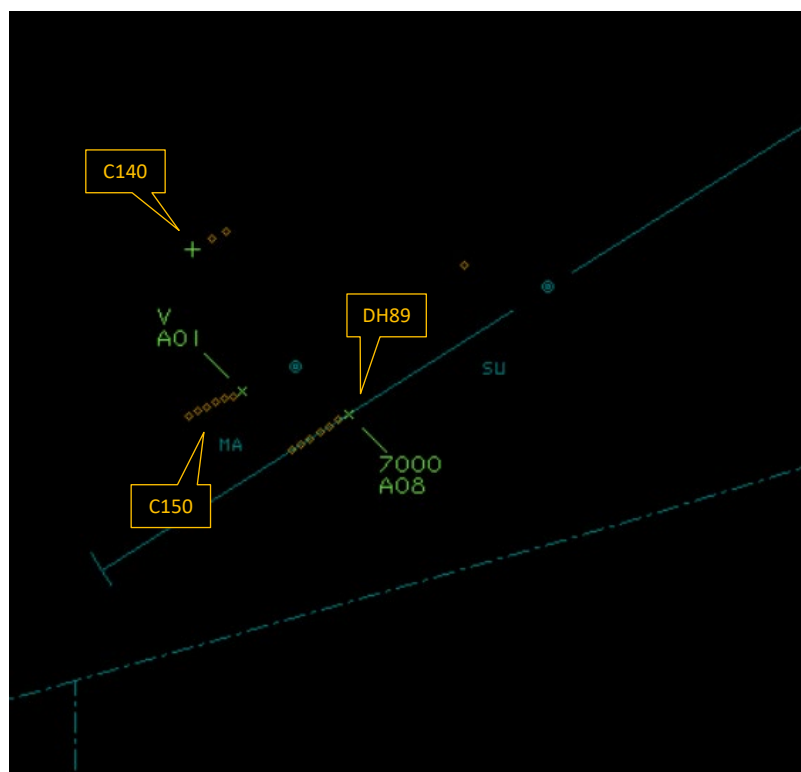


Figure 7 – 1408:52

The C140 pilot in their written report, stated that they heard the pilot of the C150 also in the circuit at Fowlmere call “*about a near miss with a Spitfire on opposite heading just before turning base leg*”. They reported that they had started to look for it and it was as they turned from crosswind to downwind that they saw the Spitfire on their left. They did not report taking any evasive action. The Spitfire pilot did not remember any specific incident.

Duxford ATC when asked were unable to recall the incident, but this was likely based on the first and incorrectly reported date given to them which was not amended until a month later once the reporting pilot confirmed the date. No other report was subsequently received.

Duxford ATC has a receiver with the Fowlmere frequency programmed in. This is to enable the AFISO to advise Duxford aircraft as to the status of the Fowlmere circuit but is wholly dependent on them hearing the calls and cannot be prioritised over the Duxford RTF. During this period, no generic Traffic Information was heard to be passed on the Fowlmere circuit by the Duxford AFISO. However as no RTF was provided to ATSI for the period running up to this point, the possibility that it might already have been passed cannot be discounted.

Although the level of the Spitfire could not be determined, it was seen to be operating in close proximity laterally to the Fowlmere circuit to the north-west of Duxford.

The Duxford Flying Orders published on their website mentions in a Letter of Agreement with Fowlmere that the Fowlmere circuit operates to the north of Fowlmere, and the Duxford circuit predominantly to the south. However, it does go on to state that this may vary, especially for high-performance aircraft operating out of Duxford. It is believed that the LoA has been revisited recently by representatives from both airfields with support from the CAA's Airfield Advisory Team.

In conclusion, the proximity of the Spitfire inbound to Duxford from the north-west, to the C140 operating in the circuit at Fowlmere, gave cause for concern to the pilot of the C140. The proximity of the airfields and their associated traffic circuits, with aircraft operating on separate frequencies, and particularly if Duxford traffic is operating to the north of Duxford, increases the likelihood of such events, particularly if specific Traffic Information is not/cannot be passed by the Duxford AFISO.

UKAB Secretariat

The C140 and Spitfire pilots shared an equal responsibility for collision avoidance and not to operate in such proximity to other aircraft as to create a collision hazard.⁴ An aircraft operated on or in the vicinity of an aerodrome shall conform with or avoid the pattern of traffic formed by other aircraft in operation.⁵

Summary

An Airprox was reported when a C140 and a Spitfire flew into proximity at Fowlmere at around 1406Z on Saturday 19th June 2021. Both pilots were operating under VFR in VMC, the C140 pilot in receipt of an AGCS from Fowlmere and the Spitfire pilot in receipt of a AFIS from Duxford.

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 AFISO 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.

In deliberating this Airprox, members were reminded that the accuracy of the reports from either pilot was questionable – on the one hand due the wrong date being reported, the time it took to establish that it was the wrong date, the subsequent elapsed time between establishing the right date and tracing the second aircraft and the fact that the Spitfire pilot stated in their report that they were describing simply an “event that stuck out” to them. Regardless, the Board felt that it did have enough information to discuss the performance of the safety barriers and determine some contributory factors. It was also noted that the reported separations differed and that CPA was a ‘backplot’ of an area, rather than a

⁴ (UK) SERA.3205 Proximity.

⁵ (UK) SERA.3225 Operation on and in the Vicinity of an Aerodrome.

point in space as the C140 was not fitted with a transponder and the Spitfire, although reporting Modes A and C, was visible on the NATS radar as a primary only contact.

The Board first considered the actions of the C140 pilot. They initially reported the date of the Airprox incorrectly and because this was not corrected for some weeks, the information gathered from the Duxford AFISO and from the Spitfire pilot was degraded due to the time elapsed. Fortunately, the Duxford RT had been recorded and some valuable information was available from that source, but the Board wished to highlight to pilots the importance of accurately reporting Airprox information. Turning to the incident itself, the C140 pilot had no prior situational awareness that the Spitfire was approaching (**CF4**). They described how they heard another pilot report on the Fowlmere frequency that the Spitfire was in the vicinity and when turning from crosswind to downwind, they saw the Spitfire flying in the opposite direction. Once visual they were concerned by its proximity and took avoiding action (**CF5**).

Looking at the actions of the Spitfire pilot, the Board noted that they would have had generic situational awareness that there was likely to be Fowlmere circuit traffic (**CF4**). The NATS radars displayed the route of the Spitfire, but the Spitfire's transponder did not display and so Mode C information was not available therefore the height of the Spitfire was not known. However, the pilot reported being at around 700ft, a similar level to the Fowlmere circuit, and members thought it would have been wiser to either climb above the visual circuit, or to have given the circuit a wider berth altogether (**CF2, CF3**).

It was noted that neither aircraft was carrying any form of CWS, the C140 was not fitted with a transponder and the Spitfire's transponder was not displaying on the radar, whether this was due to unserviceability was not known. But members opined that without the transponders the opportunity for receiving height information by other pilots who did carry a CWS, or indeed adjacent ATC units, was denied.

The Duxford AFISO reported not remembering the incident, although the RT recording indicated that the C140 pilot did report the incident at the time. Although the C140 pilot reported that they had called Duxford to advise that the visual circuit was active, it was not known whether this information was passed to the Spitfire pilot. Nevertheless, the Duxford AFISO was not required to sequence the aircraft (**CF1**).

Members noted that this incident, and others subsequently reported, seemed to indicate a lack of mutual understanding and co-operation between the two airfields. They were heartened to hear that an LoA has since been brokered and hoped that this would prevent future Airprox occurring in similar circumstances.

When discussing the risk of collision members were divided, noting that the Spitfire pilot believed the incident took place within the Duxford ATZ members remarked that without a ground track of the C140 on radar, it was difficult to know exactly where the Airprox occurred. Furthermore, the descriptions from the two pilots were also at odds, with the C140 pilot describing a close event and the Spitfire pilot one with no risk of collision. The discussion continued for some time but eventually the Board agreed that the risk of collision was unassessable; Risk Category D.

PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK

Contributory Factors:

2021097				
CF	Factor	Description	ECCAIRS Amplification	UKAB Amplification
Ground Elements				
• Situational Awareness and Action				
1	Contextual	• ANS Flight Information Provision	Provision of ANS flight information	The ATCO/FISO was not required to monitor the flight under a Basic Service
Flight Elements				
• Regulations, Processes, Procedures and Compliance				

2	Human Factors	• Use of policy/Procedures	Events involving the use of the relevant policy or procedures by flight crew	Regulations and/or procedures not complied with
• Tactical Planning and Execution				
3	Human Factors	• Monitoring of Environment	Events involving flight crew not to appropriately monitoring the environment	Did not avoid/conform with the pattern of traffic already formed
• Situational Awareness of the Conflicting Aircraft and Action				
4	Contextual	• Situational Awareness and Sensory Events	Events involving a flight crew's awareness and perception of situations	Pilot had no, late or only generic, Situational Awareness
• See and Avoid				
5	Human Factors	• Perception of Visual Information		Pilot was concerned by the proximity of the other aircraft

Degree of Risk: D.

Safety Barrier Assessment⁶

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

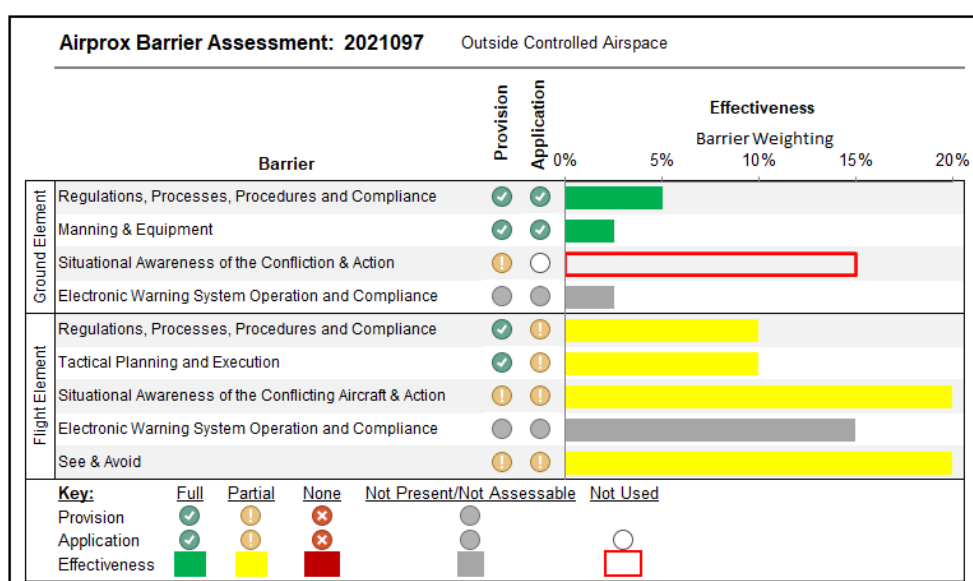
Flight Elements:

Regulations, Processes, Procedures and Compliance were assessed as **partially effective** because the Spitfire pilot did not avoid the pattern of traffic formed by the Fowlmere circuit.

Tactical Planning and Execution was assessed as **partially effective** because the Spitfire pilot did not plan to avoid the Fowlmere circuit.

Situational Awareness of the Conflicting Aircraft and Action were assessed as **partially effective** because the Spitfire pilot only had generic situational awareness about the Fowlmere circuit traffic and the C140 pilot had no situational awareness on the Spitfire.

See and Avoid were assessed as **partially effective** because the C140 pilot was concerned by the proximity of the Spitfire.



⁶ The UK Airprox Board scheme for assessing the Availability, Functionality and Effectiveness of safety barriers can be found on the [UKAB Website](http://www.ukab.co.uk).