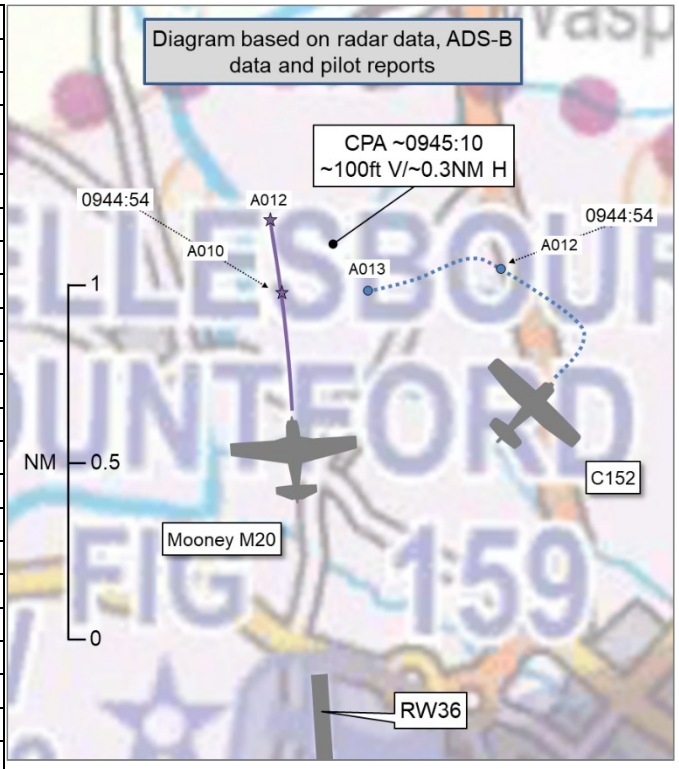
AIRPROX REPORT No 2023103

Date: 03 Jun 2023 Time: ~0945Z Position: 5213N 00137W Location: Wellesbourne Mountford ATZ

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	C152	Mooney M20
Operator	Civ FW	Civ FW
Airspace	Wellesbourne Mountford ATZ	Wellesbourne Mountford ATZ
Class	G	G
Rules	VFR	VFR
Service	AFIS	AFIS
Provider	Wellesbourne Info.	Wellesbourne Info.
Altitude/FL	1300ft	1200ft
Transponder	A, C	A, C, S
Reported		
Colours	White, red	White
Lighting	Nav, taxi, landing	"*yes*"
Conditions	VMC	VMC
Visibility	>10km	>10km
Altitude/FL	1200ft	1600ft
Altimeter	QNH (1025hPa)	QFE
Heading	270°	NK
Speed	90kt	90kt
ACAS/TAS	Not fitted	Other
Alert	N/A	None
Separation at CPA		
Reported	0ft V/0.25NM H	700ft V/0.7NM H
Recorded	~100ft V/~0.3NM H	



THE C152 PILOT reports that, after departure, and then following the noise abatement procedure from RW36, they were maintaining a crosswind heading of 270° at an altitude 1200ft AMSL. The operating pilot was a student under instruction.

They first saw the other aircraft climbing through their level (approximately 50ft higher) in their 11 o'clock position, tracking to the north at a range of approximately 200m. The risk was high, but the bearing was not constant, and it passed ahead of their position at a range of 100m. They were confident that the aircraft was going to miss, therefore took no avoiding action.

The conflicting aircraft had departed after them [and the pilot of the C152 opines that] the confliction was due to the other aircraft not following the noise abatement procedure (after departure, turn onto heading 030° and climb to 1000ft). They recall that an aircraft had received a clearance to enter RW36, and a departure clearance shortly after [the C152 pilot] had departed. They do not recall any other aircraft in the ATZ, therefore presume that that was the conflicting aircraft.

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

THE MOONEY M20 PILOT reports that they are not sure why the C152 pilot submitted an Airprox. [The Mooney M20 pilot] was in contact with Wellesbourne Information for more than 10NM and was giving position reports and also stated their intention to join downwind from a westerly direction. Traffic Information was given, and they remember there was a C152 in the pattern and that another aeroplane joined earlier too. From their GPS data, they were outside the 2.5NM ATZ and then turned to enter downwind. According to the published pattern on SkyDemon, they were more than 1NM away from the traffic pattern and flying at 1500ft AGL. They entered the ATZ away from the downwind traffic, and at 1500ft AGL. They had seen the C152 on late downwind but it was very far away, and lower by at least

500ft. They are not sure if they were flying the published pattern on SkyDemon. When they saw the [C152] they were still outside the ATZ, they think. [The Mooney M20] was equipped with [a transponder] and a [navigation system] with traffic alerts, but it didn't pick up the [C152] as traffic. They are not sure if [the other aircraft] had a [compatible system]. [The Mooney M20 pilot opines that] they don't think that there was any risk of collision but, on reflection, it would have been better pilotage if they had entered 45° earlier downwind, directly from outside the ATZ, or via an overhead join, instead of flying against the downwind traffic even though it was far away.

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

THE WELLESBOURNE FISO reports that they passed Traffic Information to the pilot of the Mooney on the previous departing C152; "*take off at your discretion*", and, because they were aware of the speed differential, they added "*when ready*".

They were aware of a potential catch-up situation, so they offered a right turn-out to the Mooney pilot (which would also ensure that the [Mooney pilot] followed the critical part of the noise abatement procedure) which was acknowledged. They anticipated that [the Mooney pilot] would follow this as they were departing to the southeast.

They believed they had done sufficient to mitigate a potential catch up situation, so they turned their attention to other traffic. They were very surprised to see [the Mooney] well to the north of Wellesbourne, near the M40/A46 junction, and was concerned that they might infringe Birmingham controlled airspace. They were about to issue a warning but they saw the [Mooney] turn southbound. They were not made aware of any incident between the two departing aircraft.

Factual Background

The entry for Wellesbourne Mountford in the AIP provides the following procedures:

EGBW AD 2.21 NOISE ABATEMENT PROCEDURES

a. RW36 departures: After departure turn right onto a track of 030° to 1000ft QFE before turning crosswind.
b. Do not overfly Loxley (1.5NM southwest) or Charlecote/Hampton Lucy (1NM north) on departure.
c. Flying over Wellesbourne Village (1NM east of the AD) is strictly prohibited below 2000ft.

The website for Wellesbourne Mountford airfield provides the following procedures:

The villages of Wellesbourne, Charlecote, Hampton Lucy and Loxley are very noise sensitive and every effort should be made to avoid over flying these areas.

Runway 36 departures: At the airfield boundary turn right onto a track of 030° towards the green roofed buildings and climb to 1,000ft QFE before turning crosswind.

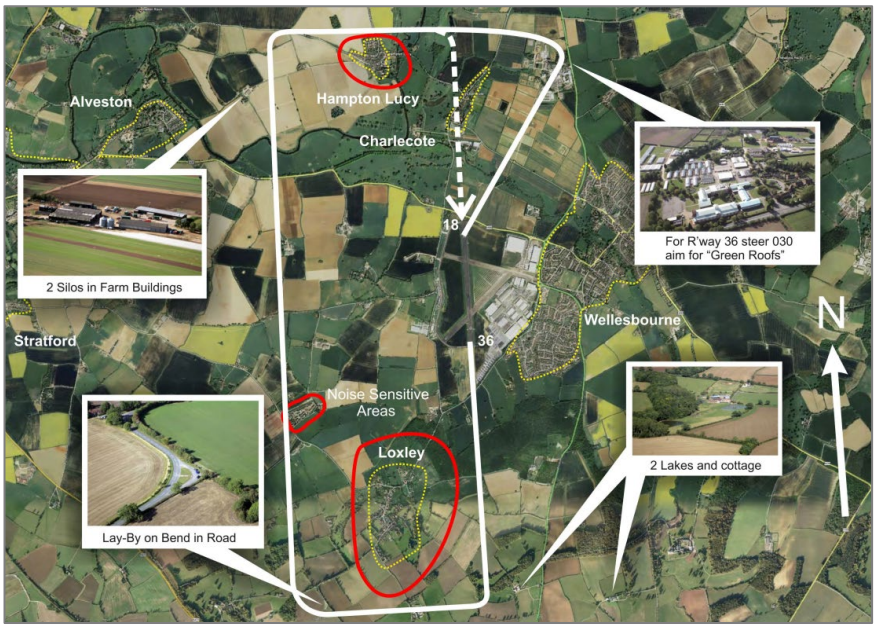


Figure 1 – The Wellesbourne visual circuit pattern

The weather at Birmingham was recorded as follows:

METAR EGBB 030950Z 04006KT 330V080 CAVOK 15/07 Q1025

Analysis and Investigation

UKAB Secretariat

An analysis of the NATS radar replay was undertaken. A primary-only radar contact was observed from 0944:22, at FL007 (1000ft), that subsequently appeared to have tracked 030° and then turned westwards (see Figure 2). This aircraft was assessed to have been the C152.

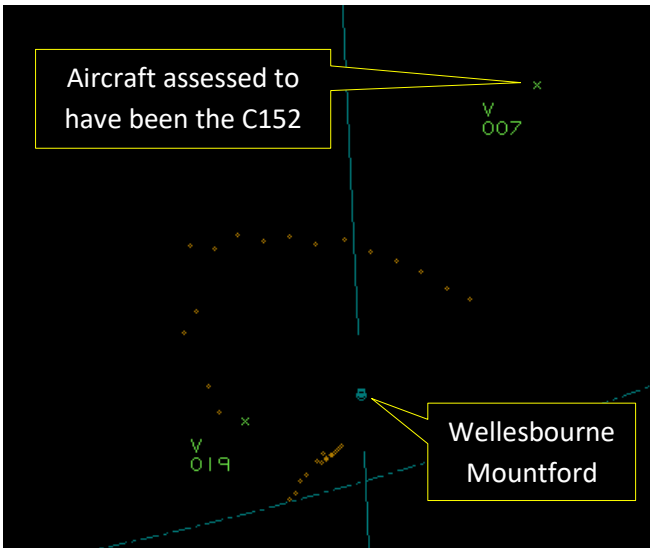


Figure 2 - 0944:22

The Mooney M20 first appeared on radar at 0944:54 (see Figure 3), and could be positively identified from Mode S data. Both aircraft were observed on radar to be at Flight Levels so an appropriate conversion factor was used to determine their altitude. From a review of ADS-B track data, the Mooney M20 was observed to have followed the RW36 centreline after take-off (see Figure 4).

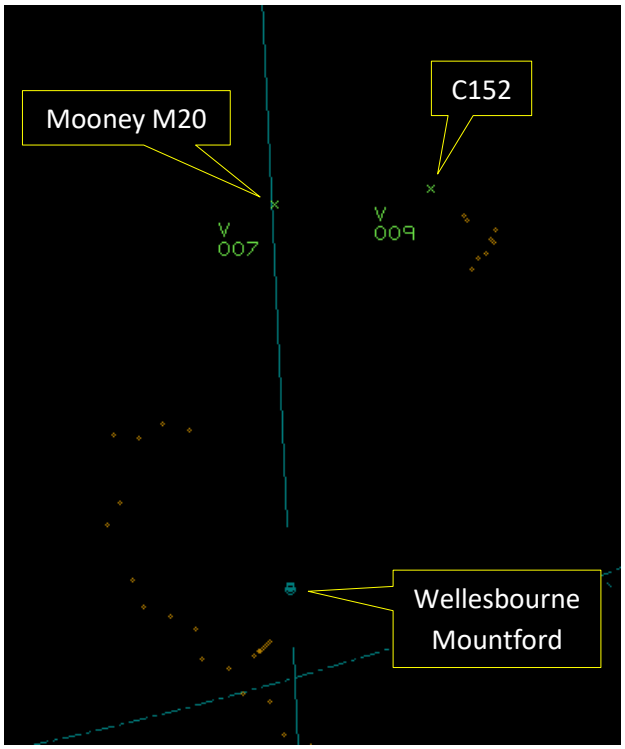


Figure 3 - 0944:54 (Radar data)

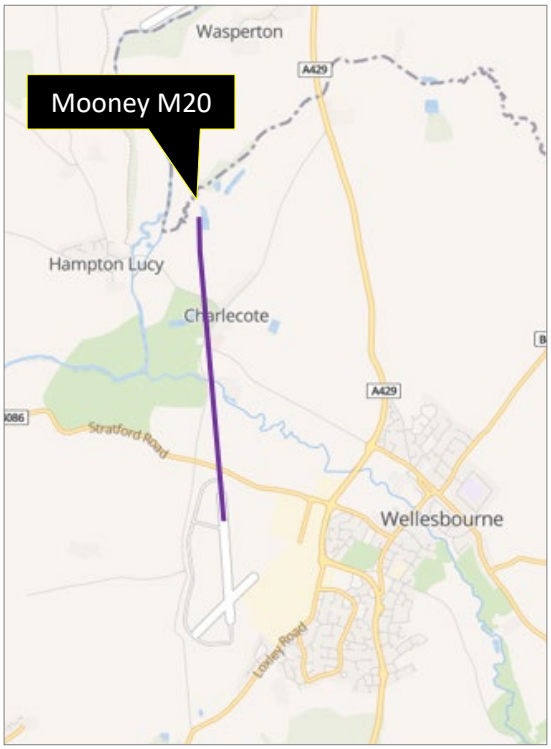


Figure 4 - 0944:54 (ADS-B data)

It was assessed that the radar returns from both aircraft provided imprecise positions and, as such, an estimation of the tracks has been shown in the diagram above. The exact time of CPA and the separation between the aircraft could not be determined precisely and have been shown as approximations.

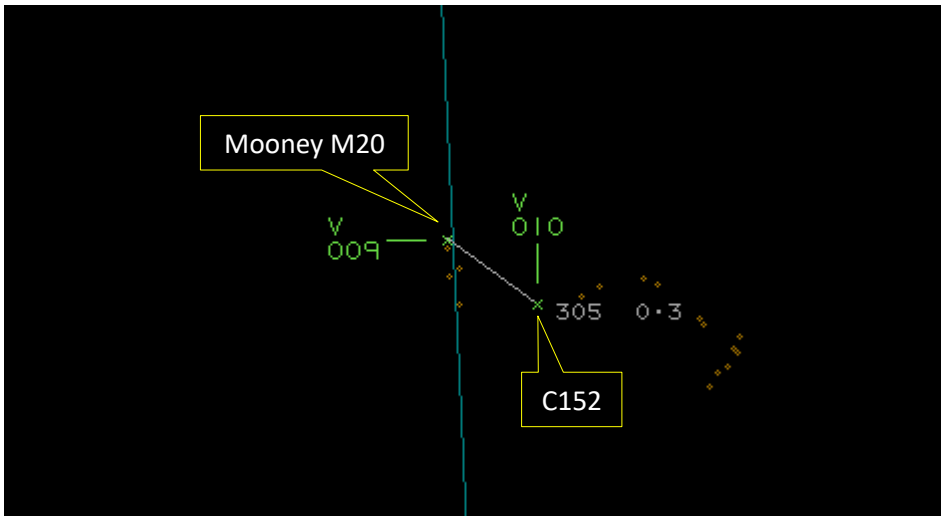


Figure 5 – 0945:10. Estimated time of CPA.

The C152 and Mooney M20 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] 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.[2]

[1] (UK) SERA.3205 Proximity.
[2] (UK) SERA.3225 Operation on and in the Vicinity of an Aerodrome.

Summary

An Airprox was reported when a C152 and a Mooney M20 flew into proximity in the Wellesbourne Mountford ATZ at 0945Z on Saturday 3rd June 2023. Both pilots were operating under VFR in VMC, both in receipt of an AFIS from the Wellesbourne Mountford AFISO.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of reports from both pilots, radar photographs/video recordings, GPS track data 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.

The Board first considered the actions of the pilot of the C152. It was noted from their narrative report that the pilot of the C152 had been aware that another aircraft had departed from RW36 shortly after their own departure, and it was agreed by members that they had therefore had generic situational awareness of the Mooney M20 (**CF9**). It was appreciated, however, that the pilot of the C152 would not have expected to have subsequently sighted the Mooney M20 in front of them. Members pondered the remark by the pilot of the C152 that "*They were confident that the aircraft was going to miss, therefore took no avoiding action*", in apparent contradiction to the reported risk of collision as being *"High".* Members concluded that whilst there may have been a 'startle effect' to have visually acquired an aircraft in an unexpected position, there had been no apparent urgency, but rather some concern at the proximity (**CF11**), and that there had not been a requirement for them to have taken action other than to have monitored the Mooney M20 as it crossed in front of them.

Indicating that they had nothing further to add to that part of the discussion, members turned their attention to the actions of the pilot of the Mooney M20. It was noted that their narrative report had described their arrival at Wellesbourne Mountford and had not addressed their departure. Members felt that it was reasonable to infer that there had not been any concern on the part of the Mooney M20 pilot regarding their departure, nor regarding the proximity of the C152 to their right during their climb.

Members surmised that the pilot of the Mooney M20 had heard, and had assimilated, the calls made on frequency by the C152 pilot during their departure, and had been passed Traffic Information by the Wellesbourne AFISO, that that would have provided some generic situational awareness of the C152 (**CF9**). However, members were in agreement that, after the pilot of the Mooney M20 had taken-off, they had not been aware of the exact position of the C152 that had turned in accordance with the published procedure. Consequently, members further agreed that the pilot of the Mooney M20 had neither conformed with, nor had avoided, the existing pattern of traffic formed by the C152 pilot ahead of them (**CF7**).

Turning their attention to the matter of the noise abatement procedure, it was clear to members that the pilot of the Mooney M20 had not been aware of the required turn during the climb-out and that they had not complied with the published procedure (**CF5**). Members concluded that the Mooney M20 pilot's pre-flight preparation had been inadequate (**CF8**) and that their departure from Wellesbourne Mountford had been incorrectly executed (**CF6**).

The Board next considered the actions of the Wellesbourne AFISO and members pondered their obligations under the terms of an AFIS. A member, and current AFISO, drew member's attention to two particular clauses provided in CAP797 relating to the passage of Traffic Information:

> 8.15 Whilst generic traffic information provided to a pilot may be useful to indicate how busy the aerodrome environment is, as the pilot gets closer to the aerodrome and is required to integrate with other traffic, specific traffic information is needed in order to achieve a safe, orderly and expeditious flow of air traffic and to assist pilots in preventing collisions.
>
> 8.18 Traffic information to traffic operating in the vicinity of an aerodrome, and specifically within the ATZ and to flights conducting Instrument Approach Procedures (IAP) shall be issued in a timely manner when, in the judgement of the AFISO, such information is necessary in the interests of safety, or when requested by the

aircraft. When a pilot report indicates, or an AFISO considers, that there may be a collision risk, specific traffic information shall be passed to each pilot concerned.

Members wondered whether the Wellesbourne AFISO had been aware that the pilot of the Mooney M20 had not followed the noise abatement routeing during their departure. Had it been the case that they had been aware, members were in agreement that there had been an opportunity to have asked the Mooney M20 pilot if they had been familiar with the noise abatement procedure and to have elicited their intentions. Further, members agreed that there had also been an opportunity to have passed Traffic Information to the pilot of the C152 on the Mooney M20, that had effectively overtaken the C152 in the circuit, that would have been of significant importance and would have aided their situational awareness. However, had it been the alternate case, that the Wellesbourne AFISO had not been aware of the departure track of the Mooney M20, members wondered whether sufficient attention had been given to keeping abreast of the pilot's relative positions. Notwithstanding the discussed permutations, members were in agreement that the Wellesbourne AFISO had not passed updated Traffic Information that had been in the interests of the safety of their respective flights (**CF1**). It was further agreed that the potential conflict between the C152 and the Mooney M20 had not been detected (**CF2**). Exploring their analysis further, members concluded that there had been an assumption on the part of the Wellesbourne AFISO that the pilot of the Mooney M20 had followed the noise abatement procedure (**CF3**) and, consequently, the situational awareness held by the AFISO of the positions of the aircraft in the ATZ had not been accurate (**CF4**).

In consideration of the aspect of electronic conspicuity (EC), members noted that the equipment fitted to the Mooney M20 would not have been expected to have detected the presence of the C152 as the latter had not broadcasted an ADS-B signal (**CF10**).

Concluding their discussions, members summarised their thoughts and were in agreement that safety had been degraded below the norm as the pilot of the Mooney M20 had not followed the published noise abatement procedure, and the Wellesbourne AFISO had not provided sufficient information to both pilots. However, the separation between the aircraft had been such that members were satisfied that no risk of collision had existed. The Board assigned Risk Category C to this event.

PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK

Contributory Factors:

	2023103			
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	Human Factors	• Conflict Detection - Not Detected	An event involving Air Navigation Services conflict not being detected.	
3	Human Factors	• Expectation/ Assumption	Events involving an individual or a crew/ team acting on the basis of expectation or assumptions of a situation that is different from the reality	
4	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			
	• Regulations, Processes, Procedures and Compliance			
5	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			
6	Human Factors	• Action Performed Incorrectly	Events involving flight crew performing the selected action incorrectly	Incorrect or ineffective execution
7	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

8	Human Factors	• Pre-flight briefing and flight preparation	An event involving incorrect, poor or insufficient pre-flight briefing	
	• Situational Awareness of the Conflicting Aircraft and Action			
9	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			
10	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			
11	Human Factors	• Perception of Visual Information	Events involving flight crew incorrectly perceiving a situation visually and then taking the wrong course of action or path of movement	Pilot was concerned by the proximity of the other aircraft

Degree of Risk: C.

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:

Ground Elements:

Situational Awareness of the Confliction and Action were assessed as **ineffective** because the Wellesbourne AFISO had inaccurate situational awareness based upon an assumption that the pilot of the Mooney M20 had followed the noise abatement procedure.

Flight Elements:

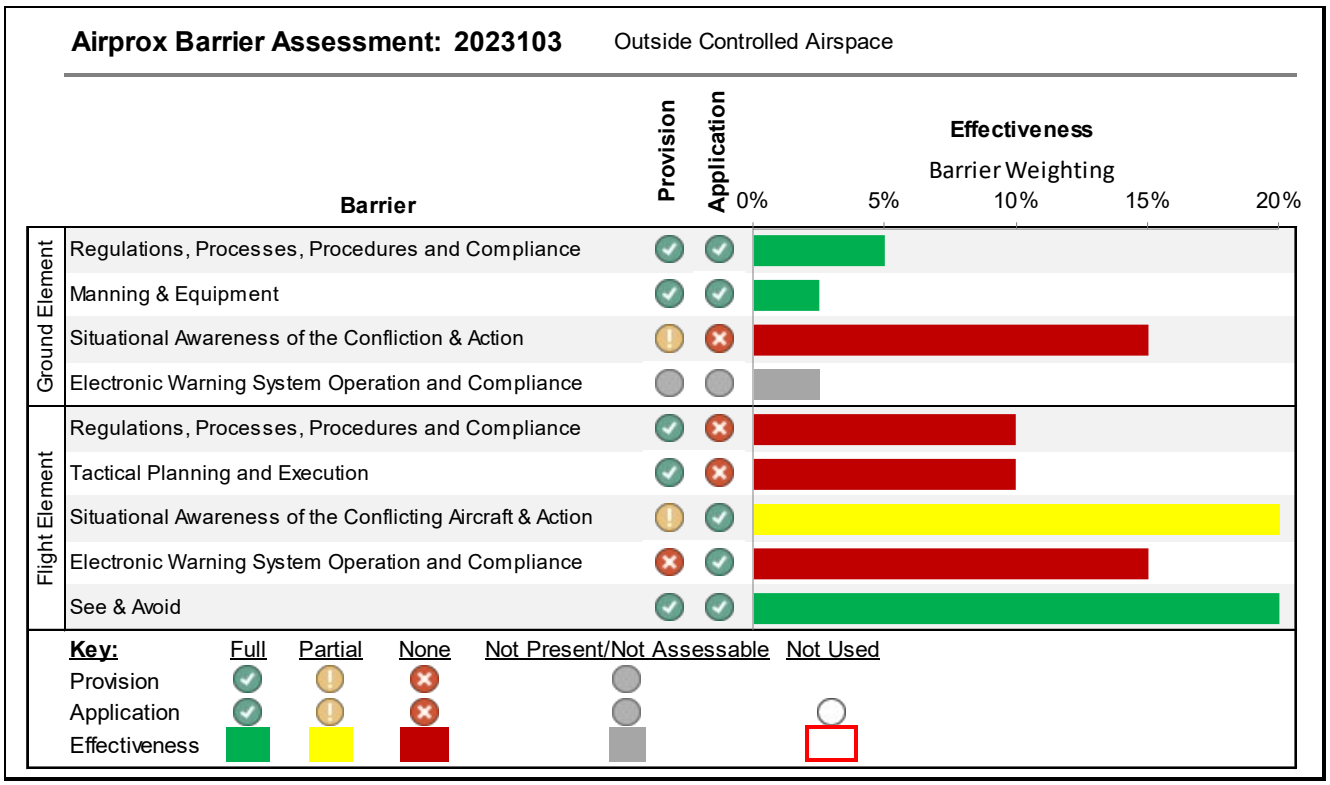
Regulations, Processes, Procedures and Compliance were assessed as **ineffective** because the pilot of the Mooney M20 had not complied with the published noise abatement procedures.

Tactical Planning and Execution was assessed as **ineffective** because the pilot of the Mooney M20 had not conformed with, nor had avoided, the existing pattern of traffic.

Situational Awareness of the Conflicting Aircraft and Action were assessed as **partially effective** because the pilot of the C152 had generic situational awareness of the presence of the Mooney M20.

Electronic Warning System Operation and Compliance were assessed as **ineffective** because the EC equipment fitted to each aircraft would not have been expected to have detected the presence of the other aircraft.

[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: 2023103
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:
Full
Partial
None
Not Present/Not Assessable
Not Used
Provision
Application
Effectiveness