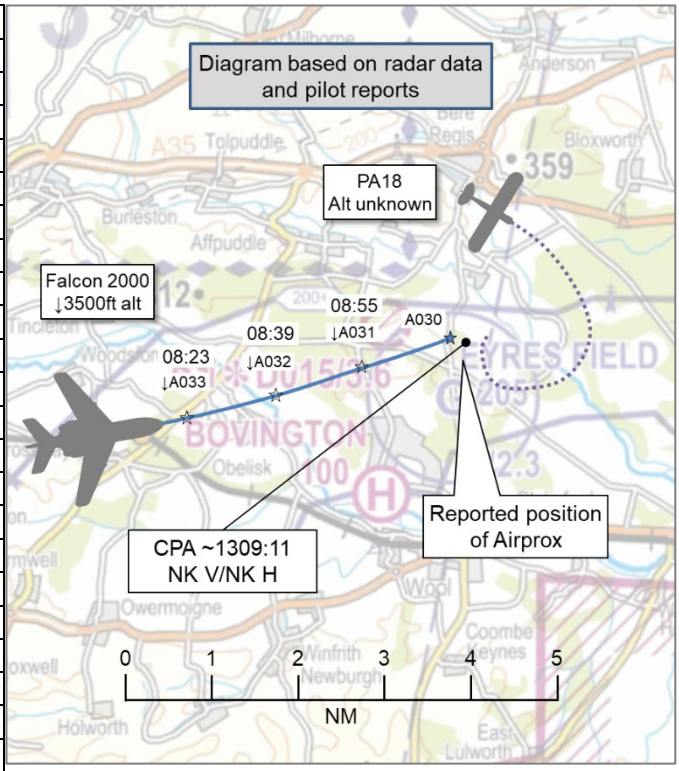
AIRPROX REPORT No 2020115

Date: 10 Sep 2020 Time: 1309Z Position: 5043N 00213W Location: Eyres Field glider site

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	Falcon 20	PA18
Operator	Civ Comm	Civ FW
Airspace	London FIR	London FIR
Class	G	G
Rules	VFR	VFR
Service	Traffic	None
Provider	Bournemouth App	Eyres Base
Altitude/FL	3000ft	NK
Transponder	A, C, S	Not fitted
Reported		
Colours	Navy blue	Black/yellow
Lighting	NR	NR
Conditions	VMC	VMC
Visibility	10km	>10km
Altitude/FL	3000ft	3200ft
Altimeter	QNH (1022hPa)	QFE
Heading	080°	270°
Speed	220kt	60kt
ACAS/TAS	TCAS II	Not fitted
Alert	None	N/A
Separation		
Reported	NR V/1.0NM H	NR V/1.5km H
Recorded	NK V/NK H	



THE FALCON 20 PILOT reports that they were the first of three aircraft in 10NM trail recovering for a straight-in approach to RW08 at Bournemouth. The crew was unaware that the gliding site was active until Bournemouth ATC passed that information once they had switched to Bournemouth Approach at about 20NM range. At that time options to avoid the site, to which they were now very close, were limited. They flew through the overhead at 3000ft, Bournemouth ATC passed pop-up traffic right, one o'clock, 1NM, no height information. At that time a glider was spotted to the south of their aircraft at approximately 1NM, then the tug was spotted passing down the left-hand side of their aircraft at less than 1NM in a descent. They remained in straight and level flight, continued their approach to Bournemouth and advised the pilots of the following aircraft via a second radio to avoid the site.

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

THE PA18 PILOT reports that, after having just launched a glider and upon their return to the gliding club, they saw a blue twin jet-engine aircraft that they recognized as a [locally-based] Falcon overfly the airfield at approximately 3,000-3,500ft and approximately 1.5km away from their aircraft. After seeing the aircraft, they sharpened their turn to the right, turning north-west. Thereafter, they descended and landed as normal. They always try to fly by thinking there could be someone/thing around this corner. On this occasion there was but they didn't feel scared or threatened. After the avoiding action, they continued the flight, did a standard descent, circuit, approach and landing and then launched another glider.

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

THE BOURNEMOUTH RADAR CONTROLLER reports that at 1305 [the Falcon 20 pilot] called them as the first of three FA20 inbound from the west, descending to FL50. [The Falcon 20 pilot] was given a Traffic Service with descent to altitude 3000ft and a clearance to enter controlled airspace on a straight-in approach to RW08. Shortly afterwards, they saw a PSR contact in the vicinity of Eyres Field

gliding site (on a 15NM final to RW08 in Class G) and checked their information display, which showed 'Eyres Field active' and they advised this to [the Falcon 20 pilot]. At this point, [the Falcon 20] was 23NM west of Bournemouth passing 4200ft descending and the pilot acknowledged the information by replying "*Looking out*". At 1307, the pilot of a second FA20 called them, following the same route as [another Falcon] and was given a Traffic Service, the same joining clearance, and the same information about Eyres Field activity. [The Falcon 20 pilot] was then given specific Traffic Information on an intermittent PSR contact in the vicinity of Eyres Field, and subsequently reported passing the aircraft at the same level and also seeing a glider in the area at 4000ft. The glider was not seen on radar. [The following aircraft] was updated on this information and the pilot reported the intention to pass Eyres Field at a higher altitude of 5400ft. A third FA20 was later given this information and elected to route 5NM north of Eyres Field before joining controlled airspace. All three aircraft landed safely at Bournemouth shortly afterwards. The controller was not aware that the crew of [the Falcon 20] had filed an Airprox report until 15th September. Because of the delay, they reviewed the radar and RTF recordings to assist in making this report.

DORSET GLIDING CLUB reports the event was witnessed by two people on the ground and the tug pilot in the air. They collectively observed a Falcon at an estimated height of between 1500ft and 2000ft above ground level (the tug pilot confirmed the height as 3200ft). The lower of the two Falcons was observed above the middle of the airstrip. The second Falcon, which passed over 1½ to 2 minutes later, could not be seen from the ground as it was above cloud. The ground observers concluded it was a Falcon from the sound being similar to the first. An estimation of relative ground tracks is at Figure 1 below.

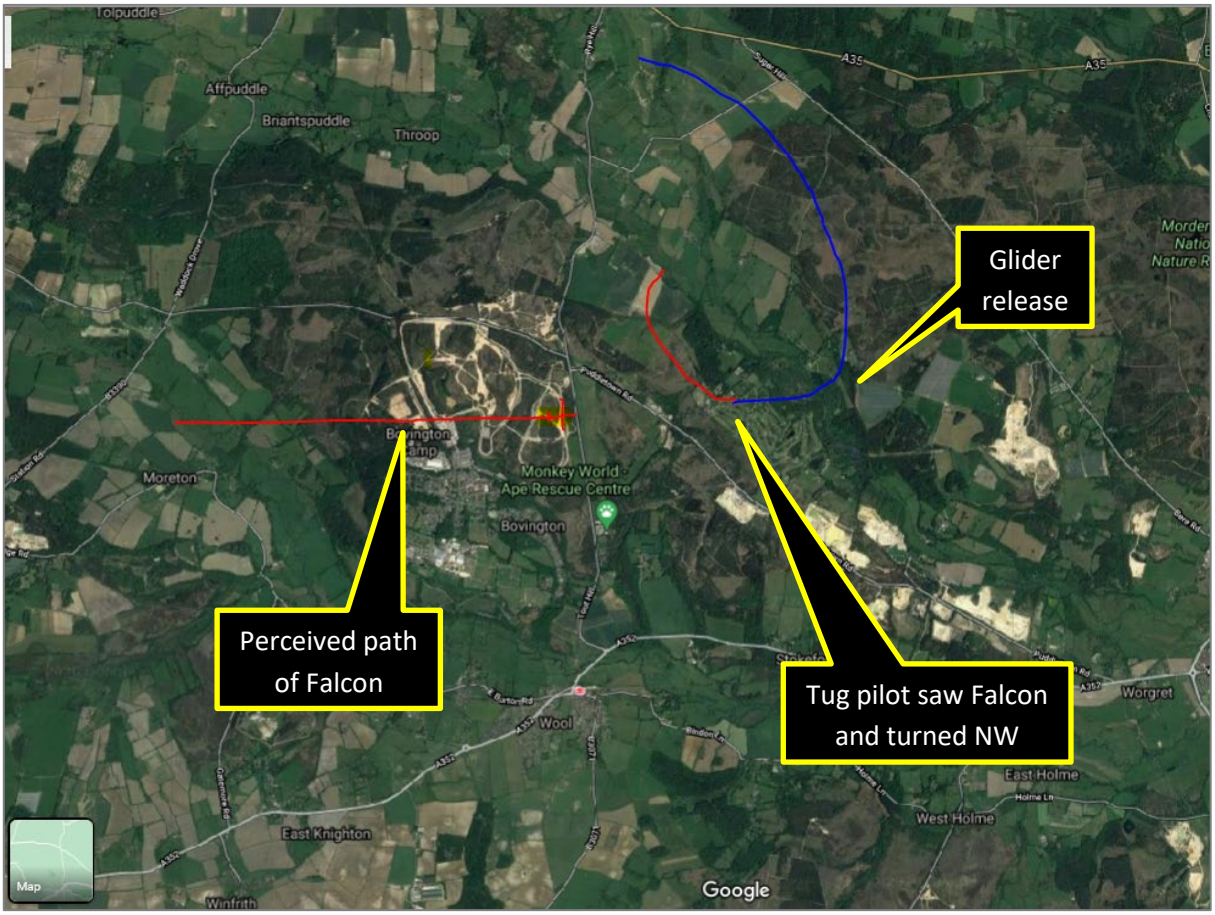


Figure 1

Factual Background

The weather at Bournemouth Airport was recorded as follows:

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METAR EGHH 101320Z VRB03KT 9999 SCT042 19/08 Q1022=
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Analysis and Investigation

Falcon 20 Operating Authority

In terms of the immediate response from the occurrence, the information is flowing from the Glider Club into Operations Control and was placed on the Operations 'whiteboard' which is visible to crews planning and briefing. On the day in question, the 'whiteboard' was looked at and briefed but glider activity was not briefed. A review is ongoing as to how to make this visually more distinctive. However, this information should be put onto the Bournemouth ATIS so that it's more widely known than just [the Falcon 20 Operating Authority] and protects both parties against a mistake like this.

Bournemouth Airport ATC

A full investigation into this incident has been carried out and has included discussions with the APS controller, the captain of [the Falcon 20] and the Safety Advisor of Operations at [the Falcon 20 Operating Authority] where the aircraft is based. The RT and surveillance recordings have also been reviewed.

The narrative outlined in the APS controllers MOR describes an accurate account of the incident. [The Falcon 20] was 30NM west of the airfield in Class G airspace and had self-positioned on the extended centreline for RW08 when the crew contacted the Bournemouth radar frequency. They were given clearance to join for a straight-in approach, VFR. As the aircraft approached 23NM from touchdown, the APS controller advised that Eyres Field gliding site was notified as active. At that time the aircraft was approximately 8NM from the site and would overfly on their elected routing. As [the Falcon 20] reached 4NM from Eyres Field, a PSR-only contact popped up in that vicinity within 0.5NM of the site. The controller passed the Traffic Information to the crew who acknowledged it and advised that they were looking. The screen shot captured at this moment and depicted at Figure 2 shows the PSR contact as a '+' ahead of [the Falcon 20]. A red circle has been added to the screenshot to indicate the position of the gliding site.

Figure 2 – 1308:08

As of July 2020, as a result of a review of procedures following a previous Airprox involving an FA20 and glider [UKAB note: Airprox 2020044], it was recommended that Eyres Field should be marked on the radar display when notification had been received that it was active. This serves as an aide memoire to the controller enabling them to pass generic Traffic Information as the radar struggles to capture and/or retain returns for such aircraft. In this instance it had not been selected, however it was noted in the remarks on the MET screen which reflects information which is being broadcast on the ATIS.

The aircraft continued inbound towards the airfield without deviation from track. The PSR contact continued to paint on the radar display; however, the accuracy of the plot is questionable as the radar struggled to retain the return. The screenshot depicted at Figure 3 is believed to be the last accurate capture prior to the Airprox.

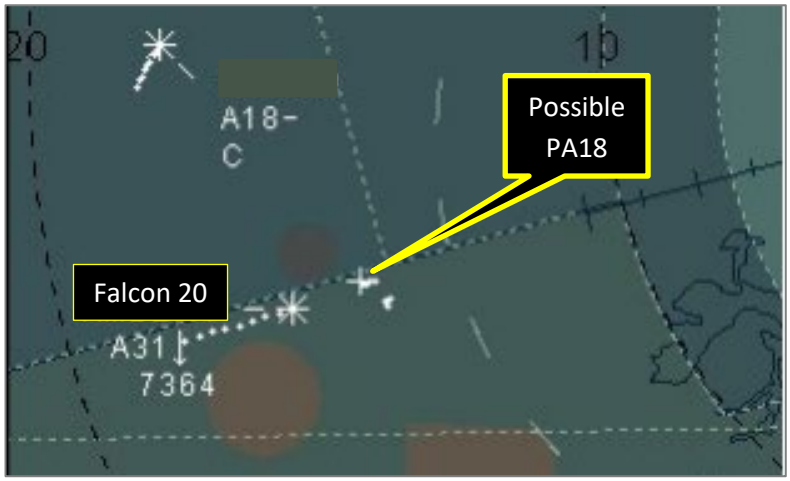


Figure 3 – 1308:51

Following this, the contact coasted as the radar attempted to predict the direction of the aircraft (Figure 4). At this point the pilot reported passing within half a mile of another aircraft and that it was overhead Eyres Field. They also reported being visual with a glider at about 4000ft in the same vicinity. The altitude of the FA20 at the time of the report was 3000ft.

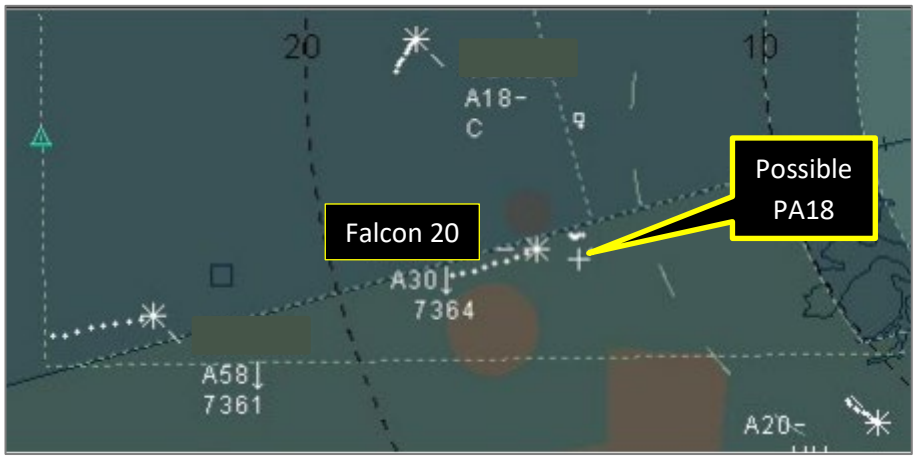


Figure 4

Through follow up discussions with the pilot of [the Falcon 20] and the Safety Officer at [the Falcon 20's Operating Authority] it was discovered that the conflicting aircraft was the glider tug which was at approximately 3000ft descending back into the gliding site. It is not transponder equipped and therefore no TCAS alert was received.

The investigator was also informed that [the Falcon 20's] Ops had been notified that Eyres Field was active on the day and that the status was noted on a briefing whiteboard, but that all three FA20 crews had not identified the notification. At the time of the incident there was a pre-recorded phrase on the ATIS stating "Gliding activity to the west of the airfield", which was selectable for broadcast when necessary. It is not known whether this was playing on the ATIS on the day; however, it is strongly believed it would have been as the controller's MET screen displayed "Eyres Field Active until 1800". The information input on the screen by the tower ATSA generally provides a visual

reference to controllers of what is playing on the ATIS broadcast. Since this incident, the phrase has been adjusted to make it more specific and now states " Eyres Field Gliding Site Active".

It is unknown why the selectable symbol representing the gliding site was not depicted on the screen as seen in Figure 5 below. The controller reported post-incident that, had it been on the screen, they may have been able to let the crew know sooner. The pilot was, however, informed of the activity status of the gliding site when the aircraft was still some 8NM miles from it and subsequently Traffic Information 4NM miles ahead. The radar replay shows no deviation by the aircraft from its track and the pilot responded to the traffic report "*Copied looking [Falcon 20 C/S]*".

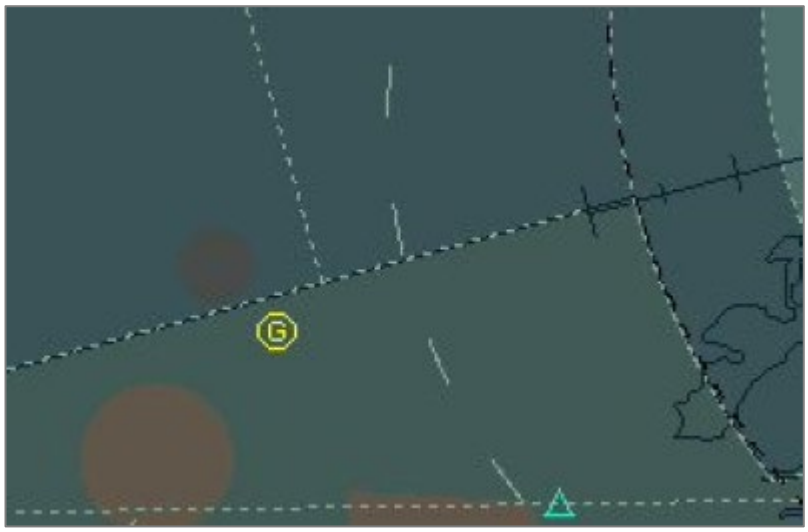


Figure 5

From an ATC perspective, the investigator has identified little more that could be done to prevent this incident from occurring. The activity status information regarding the gliding site had been disseminated. The crew of the FA20 were recovering VFR to the airport and were on their own navigation. Eyres Field Gliding site had notified both ATC and [the Falcon 20's Operating Authority] that they were active that day; however, there was an apparent breakdown in the way in which this information was displayed to pilots at [the Falcon 20's operation] which the investigator is told has been improved upon. The controller provided Traffic Information where possible in a timely manner. The crew did not appear to deviate from track, there was no avoiding action and the controller was not notified of the crew's intention to report the encounter as an Airprox.

The glider tug was not fitted with a transponder and was slow moving and, as such, the radar struggled to retain the return.

Following this incident, liaison has taken place between [the Falcon 20's Operating Authority] and a representative from ATC and also between [the Falcon 20's Operating Authority] and Eyres Field to mitigate the likelihood of further incidents. [the Falcon 20's Operating Authority] Flight Ops has issued guidance to their aircrew that whilst recovering VFR or making a visual approach from the west, crews should now fly through the Eyres Field overhead at 5000ft for approaches to RW08 then descend. [The Falcon 20's Operating Authority] advise that they will notify Eyres Field regarding their recovery times, and state that this procedure places the aircraft through a known point that the glider pilots will be aware of.

UKAB Secretariat

Analysis of the NATS radar replay was undertaken. Unfortunately, there is no primary radar contact visible close to the Falcon 20 at the time it was in the vicinity of the glider site. Therefore, it has not been possible to measure the CPA between the two aircraft.

The Falcon 20 and PA18 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

BGA

Following previous Airprox in this area, Dorset Gliding Club has redoubled its efforts to inform both Bournemouth and the Falcon Operator of its activity. On this occasion, both were informed by email the previous day and by telephone on the day in question. Given these efforts, it is disappointing that the Falcon crew was not passed this information until a late stage. It would be wise for the Falcon Operator to assume Eyres Field is active unless positively confirmed otherwise.

Summary

An Airprox was reported when a Falcon 20 and a PA18 flew into proximity over Eyres Field glider site at 1309Z on Thursday 10th September 2020. Both pilots were operating under VFR in VMC, the Falcon 20 pilot in receipt of a Traffic Service from Bournemouth Approach and the PA18 pilot not in receipt of an Air Traffic Service.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of reports from both pilots, radar photographs/video recordings, reports from the air traffic controllers involved and reports from the appropriate operating authorities. 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.

Due to the exceptional circumstances presented by the coronavirus pandemic, this incident was assessed as part of a 'virtual' UK Airprox Board meeting where members provided a combination of written contributions and dial-in/VTC comments.

The Board first considered the actions of the Falcon 20 pilot and felt it unfortunate that they had not assimilated the information regarding the activity of Eyres Field glider site. Members noted that this information had been displayed on their Flight Operations' whiteboard but had not been noticed by the crew on the day of the Airprox (**CF3**, **CF4**), and were heartened to hear that the Operating Authority had taken steps to ensure that this information is displayed in a more prominent manner in future (**CF2**). The Board wondered why the pilot had also missed the information on the Bournemouth ATIS regarding the Eyres Field activity, but noted that it had not been possible to independently verify whether or not that information had actually been on the ATIS. Members agreed that the first that the pilot knew of it was when they were informed by the Bournemouth Approach controller on initial contact and that this information had, in fact, been received too late for the pilot of the Falcon 20 to adjust their track and/or altitude to avoid the activity. Furthermore, the Board also felt that the passage of Traffic Information – which had not contained any height information – on the primary radar contact from the controller had also been too late and not sufficiently specific for the Falcon 20 pilot to have taken any action to avoid the contacts (**CF5**). The Board agreed that the Electronic Warning System barrier had been defeated because the TCAS II system fitted to the Falcon 20 could not detect the presence of the PA18, which was not transponder-equipped (**CF6**) but that, in the event, the pilot had sighted both the glider and the PA18 at sufficient distance to have not been in conflict (**CF7**).

Turning to the actions of the PA18 pilot, the Board recalled an incident from October 2019 involving a tug/glider combination and a PA34 [Airprox 2019294]. On that occasion, the Board had issued a Safety Recommendation that '*The BGA reiterates guidance to gliding clubs regarding the significant mitigation to mid-air collision afforded by fitment of SSR transponders to tug aircraft*'. The UKAB had been informed that the BGA had taken this action in September 2020 and so members wished to highlight

[1] SERA.3205 Proximity.
[2] SERA.3210 Right-of-way (c)(1) Approaching head-on.

this guidance to the gliding club involved in this Airprox. Being situated on the extended centreline of an airport, the Board felt that the fitment of a transponder to the tug aircraft had been particularly pertinent to this Airprox (**CF6**) because it would not only have provided additional situational awareness to the controller, but also would have been detected by the TCAS II equipment fitted to the Falcon 20. Furthermore, and whilst members understood the necessity of the tug pilot being on the same frequency as the gliders they were launching, they noted that there had been no means by which the tug pilot could have known about the presence of the Falcon 20 before they sighted it (**CF5**), lending more strength to the argument for compatible electronic conspicuity devices in order to maximise the chances of pilots of similarly-equipped aircraft gaining situational awareness on the presence of the tug and avoiding it accordingly. The Board also noted, however, that the tug pilot had seen the Falcon 20 at an estimated range of 1.5km and had, therefore, not been overly concerned by its proximity (**CF7**).

The Board then discussed the actions of the Bournemouth controller and, while some ATC members felt that there might have been an opportunity to pass Traffic Information slightly earlier than had been the case, the majority view was that the controller had done all that was reasonably possible to inform the Falcon 20 pilot of the presence of the (undetermined) primary radar contact(s). Once again, without the benefit of altitude information that would have been provided by a transponder the controller could only pass generic Traffic Information (**CF1**), but members agreed that this had been sufficient in the event to draw the Falcon 20 pilot's eyes into the correct area to allow them to become visual with both a glider and the tug aircraft.

Finally, in discussing the risk involved in this event, members noted that the PA18 had not been displayed on the NATS radar replay but had been displayed to the Bournemouth controller on their radar. That said, primary-only tracks can be quite unstable and there was a suspicion that the Bournemouth radar was 'coasting' while trying to predict the track of the primary return, thus rendering any measurement of lateral CPA likely to be inaccurate. Therefore members took into account the assessments of the collision risk and estimation of CPA made by both pilots and agreed that there had been no risk of collision. Furthermore, the Board judged that normal safety standards and parameters for flight in Class G airspace had pertained – Risk Category E.

PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK

Contributory Factors:

	2020115		
CF	**Factor**	**Description**	**Amplification**
	Ground Elements		
	• Situational Awareness and Action		
1	Contextual	• Situational Awareness and Sensory Events	The controller had only generic, late or no Situational Awareness
	Flight Elements		
	• Tactical Planning and Execution		
2	Organisational	• Flight Planning Information Sources	Inadequate planning material
3	Human Factors	• Pre-flight briefing and flight preparation	
4	Human Factors	• Flight Planning and Preparation	
	• Situational Awareness of the Conflicting Aircraft and Action		
5	Contextual	• Situational Awareness and Sensory Events	Pilot had no, late or only generic, Situational Awareness
	• Electronic Warning System Operation and Compliance		
6	Technical	• ACAS/TCAS System Failure	Incompatible CWS equipment
	• See and Avoid		
7	Human Factors	• Monitoring of Other Aircraft	Sighting report

Degree of Risk: E

Safety Barrier Assessment[3]

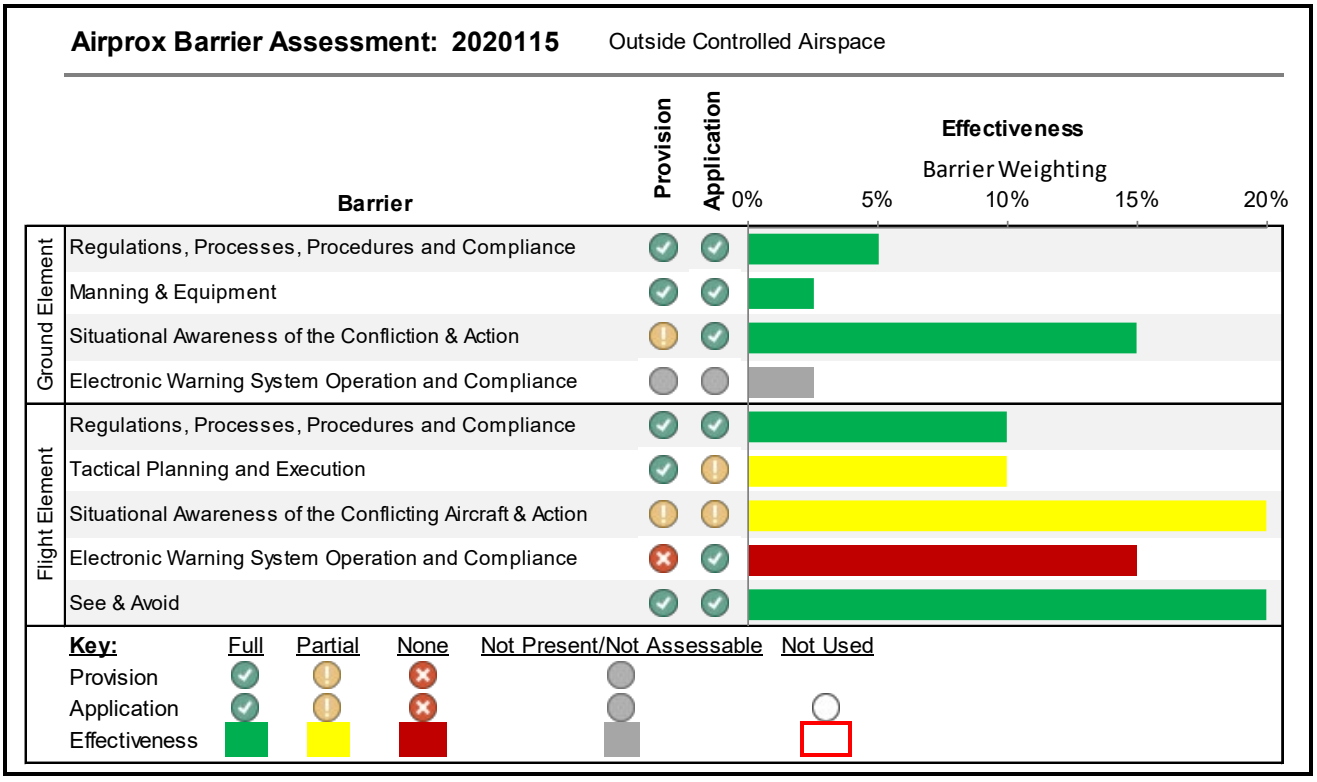
In assessing the effectiveness of the safety barriers associated with this incident, the Board concluded that the key factors had been that:

Flight Elements:

Tactical Planning and Execution was assessed as **partially effective** because the Falcon 20 pilot had not assimilated the glider site activity from either their operation's planning boards or the Bournemouth ATIS.

Situational Awareness of the Conflicting Aircraft and Action were assessed as **partially effective** because the Traffic Information issued to the Falcon 20 pilot had not contained any height information (as none was available to the controller).

Electronic Warning System Operation and Compliance were assessed as **ineffective** because the TCAS equipment fitted to the Falcon 20 was incapable of detecting the presence of the non-transponding PA18.



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