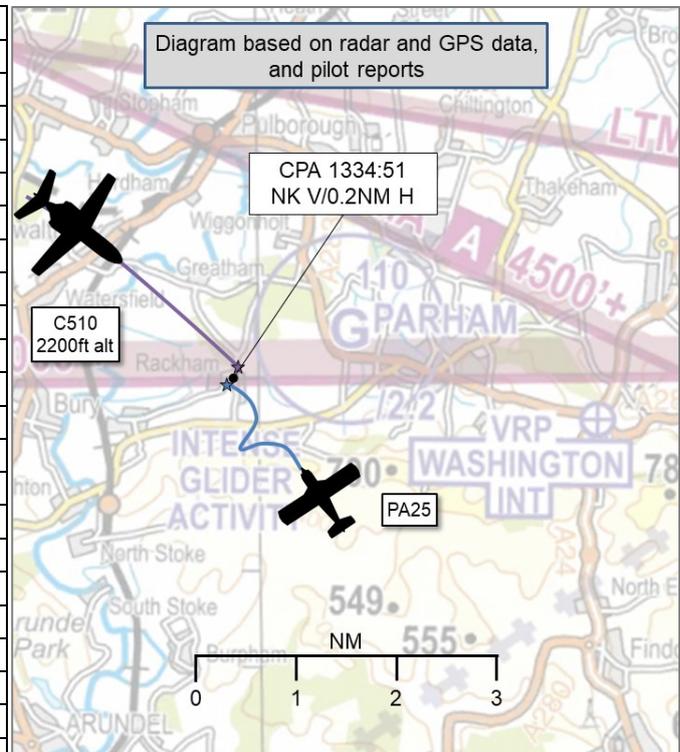


AIRPROX REPORT No 2020107

Date: 02 Sep 2020 Time: 1334Z Position: 5055N 00030W Location: Rackham

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	PA25	C510
Operator	Civ FW	Civ Comm
Airspace	London FIR	London FIR
Class	G	G
Rules	VFR	IFR
Service	Listening Out	Procedural
Provider	Parham	Shoreham
Altitude/FL	2200ft	NK
Transponder	Not fitted	A, C, S
Reported		
Colours	White, Orange	Not reported
Lighting	Landing, Strobe	Not reported
Conditions	VMC	VMC
Visibility	Not reported	10km
Altitude/FL	2000ft	2300ft
Altimeter	QFE	QNH
Heading	300°	090°
Speed	100kt	140kt
ACAS/TAS	PowerFLARM	TCAS I
Alert	Information	TA ¹
Separation		
Reported	100ft V/0.2NM H	100ft V/1NM H
Recorded	NK V/0.2NM H	



THE PA25 PILOT reports that as a duty tug pilot they had flown 8 tows already that day. They had just towed a glider to 2500ft to the south of the airfield. After the glider released, they turned onto about 300° heading for their descent towards a route around one of the local noise sensitive areas, which would then put them onto a right-base leg to for landing RW22. They were 300ft to 400ft into the descent and didn't see the conflicting business jet until fairly late on, about 0.3NM away, and at the time that PowerFLARM started to give a warning. They saw that they would pass behind. Immediately after they saw the business jet start a turn away northeast which put them in the immediate area of at least two gliders which they flew below. During the continued descent the PA25 pilot spoke to Farnborough, then Shoreham ATC units to find out who was working the business jet. They spent a moment or two longer during the latter part of their approach to buy time to contact the ATS units and slowed the aircraft to a little above approach speed to do this whilst making two gentle orbits, away from the circuit and any likely gliders. They then continued into an uneventful landing. After any incident it is a good idea to remove oneself from flying. They asked the other duty tug pilot to fly in their stead. They spoke to Shoreham ATC a little while later who confirmed that the aircraft was locally based. Shoreham suggested a NOTAM would be a sensible thing to promulgate. The PA25 pilot would prefer Shoreham ATIS having a note on it to say that there are gliders flying up to the cloud base. On some busy days it's hard to plan the descent as there are so many gliders.

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

THE C510 PILOT reports that they had conducted a Threat Error Mitigation (TEM) assessment of the busy uncontrolled airspace surrounding Shoreham and agreed that keeping at the minimum safe airspeed, 140kt, was appropriate. They agreed to also keep a good outside visual scan going in uncontrolled airspace. In future their TEM briefing will include strategies to avoid Parham altogether, potentially by joining any approach via Shoreham overhead and then routing to ADURI to the East of

¹ The C510 TCAS I TA indication was not the PA25, who was not transponding.

Shoreham. They were released out of controlled airspace by London Control on track for Shoreham from the west at about 10NM from SHM. Descent was made to establish on a long final with the restriction of remaining clear of controlled airspace at 2500ft upwards in the vicinity of finals. The standard Instrument Approach profile commences at 2200ft via waypoint BITLI. When approaching from the west, the track to BITLI, and therefore final at Shoreham, routes close to Parham. However controlled airspace in the vicinity of BITLI commences at 2500ft. therefore there is very little vertical space to avoid conflict with Parham. TCAS contact was made with traffic in the vicinity of Parham airfield at their level and 3NM away. They felt at this stage that a significant track deviation to avoid would have been less safe, without visual contact, than maintaining track and keeping lateral separation on TCAS.

The pilot did not provide an assessment of the risk of collision.

THE SHOREHAM CONTROLLER reports that the PA25 pilot made a complaint on frequency that a Jet had overflown Parham gliding site and under flown several gliders, the PA25 pilot wanted to ensure the jet pilot knew. The C510 was IFR self-positioning for an RNAV RW20 instrument approach and had reported passing BITLI at 2200ft. The controller acknowledged the complaint and advised the PA25 pilot that as the business jet was indeed on final approach, he would have heard the details. This seemed to satisfy the PA25 pilot who left the frequency. The C510 pilot made no comment during or after the exchange when they were taxiing to parking. The controller was aware that the C510 pilot had TCAS indications because the Traffic Information passed on initial contract had been acknowledged with "Got him on TCAS".

Factual Background

The weather at Shoreham was recorded as follows:

METAR EGKA 021320Z 19011KT 9999 FEW023 18/13 Q1019

Analysis and Investigation

Shoreham Investigation

The unit was first notified of the alleged Airprox by email on 7th September by the UK Airprox Board.

Shoreham provides a mixture of Approach Procedural, Aerodrome and Air/Ground services during its published hours of operation. At the time of the report, a combined Approach Procedural & Aerodrome service was being provided by a single ATCO, using the callsign Shoreham Approach.

Shoreham is not equipped with Radar or an equivalent surveillance-based system.

The aerodrome and its published instrument approach procedures lie entirely within Class G airspace.

Parham Gliding Site lies in Class G airspace and is depicted on the Shoreham RNAV Approach Runway 20 chart. The CAA 1:500K chart depicts the gliding site with a 2200ft AMSL upper limit.

Parham (also called the Southdown Gliding Club) details its own "arrivals by air" instructions on its own website at <https://www.southdowngliding.co.uk/images/downloads/Arrivalsbyair2019.pdf>

On page two of this document it states:

"Threats: The airfield should not be overflown below 2000ft AGL due to winch cables." This equates to 2110ft AMSL based on the latest elevation data for Parham.

The C510 reported descending to 2200ft and then level at 2200ft on the Shoreham QNH of 1019hPa. This would have still put it above the 2000ft AGL (2110ft AMSL) overflight limit that is defined in the Southdown Gliding Club document [UKAB note: Parham is 110ftAGL. The Parham website instructions state that aircraft should not overfly the site below 2000ft AGL (2110ft AMSL). The 1:500K aeronautical chart displays a maximum winch launch height of 2200ft AMSL. On the Shoreham instrument approach chart the aircraft arrival is not below 2200ft AMSL until ADURI (Figure 1) which is beneath the LTMA which, in that area, has a base of 2500ft AMSL (London QNH)].



Figure 1: Shoreham Instrument Approach RW20

The PA25 pilot alleged on the radio that the C510 was “well below a number of our gliders”.

This implies that if the C510 pilot was maintaining 2200ft, then gliders were operating above this altitude, above that of the upper limit marked on the chart, and above the overflight height stated in their own documentation.

While the C510 pilot may have flown close to or over the lateral confines of the gliding site, it apparently remained above the notified vertical dimensions of it.

Having reviewed all the above and discussed the incident with the ATCO concerned, I don't believe there was any ATC implication and that it appears that the alleged Airprox took place entirely within Class G airspace where both users share a responsibility to avoid each other.

UKAB Secretariat

The PA25 and C510 pilots shared an equal responsibility for collision avoidance and not to operate in such proximity to other aircraft as to create a collision hazard.² If the incident geometry is considered as head-on or nearly so then both pilots were required to turn to the right.³

Comments

BGA

We are heartened to read that following this incident the C510 operator is taking active steps to avoid Parham in future. However, we are concerned that the Shoreham Investigation demonstrates a lack of understanding of gliding operations. In particular, Shoreham should be aware that gliders will operate up to the base of controlled airspace and that the 2200ft figure refers only to the maximum winch launch height.

Additionally an article titled ‘Gliding Activity Explained’ was published in Air Clues Issue 19 that was based on Aeronautical Information Circular (AIC) Yellow 083/2011 is recommended reading for any pilot operating in class G airspace.

Summary

² SERA.3205 Proximity.

³ SERA.3210 Right-of-way (c)(1) Approaching head-on.

An Airprox was reported when a PA25 and a C510 flew into proximity at Rackham at 1334Z on Wednesday 2nd September 2020. The PA25 pilot was operating VFR in VMC and not in receipt of a service. The C510 pilot was operating under IFR in VMC and in receipt of a Procedural Service from Shoreham.

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 began by looking at the actions of the Shoreham controller. Shoreham is a Procedural Control unit and as such the controller did not have access to a radar screen, because of this the controller did not have specific information regarding the position of aircraft at Parham (**CF1**), meaning they could only pass generic Traffic Information on Parham's activity. Whilst the controller was aware of the activity at Parham it was apparent, from the Shoreham investigation, that there is some misunderstanding regarding local gliding operations. It seems apparent that the Shoreham understanding is that aircraft should transit not below 2110ft AMSL as gliders will only operate up to that level. In fact the 2200ft AMSL which is displayed on the aeronautical charts is (by convention) simply an indication of the upper altitude for winch launches, with gliders routinely operating above the altitude displayed on the charts. In addition and for Parham specifically, gliders will frequently be found operating to the south of the field to keep clear of the London TMA. Members agreed that Shoreham ATC should revisit their procedures to ensure they do not allow aircraft to descend too low when overflying the winch launch area at Parham or remain in controlled airspace for longer, to be released closer to BITLI or ADURI and past the Parham local area. Regardless, the C510 pilots track was outside this area and it was not germane to the Airprox. There was a suggestion that Shoreham include the active status of Parham on their ATIS and the winch launch altitude on their instrument approach plates as members believed this would assist pilots operating with Shoreham.

The Board then turned to the actions of the PA25 pilot. Due to the nature of the operation at Shoreham members agreed that it would not be unusual to see business-jet aircraft in that area (**CF2**). The PA25 was fitted with PowerFLARM which alerted the pilot to the presence of the C510 (**CF4**), at about the same time that they became visual with the C510 (**CF5**). But the C510's TCAS I could not detect the non-transponding PA25 (**CF3**), because of that members agreed that it would be prudent for the PA25 to be fitted with a transponder. Previously the Board had recommended that the BGA remind gliding clubs of the importance of having a serviceable transponder fitted to the tug aircraft to alert other airspace users of their presence.⁴ The Board were heartened that Parham gliding club had said they would re-engage with Shoreham ATC to ensure a greater integration of their activities with aircraft inbound and outbound at Shoreham.

Turning to the actions of the C510 pilot, the Board commended them for their proactive pre-flight planning, ensuring that they had allowed, as far as practical, for the gliding activity at Parham (**CF2**). They had flown to the south of the area and, since this incident, were now looking at an alternative routing to avoid Parham altogether. The TCAS indication that the C510 pilot received was not from the PA25 as TCAS.I is not compatible with PowerFLARM (**CF3**). However, when the C510 pilot saw the PA25, they had fortuitously turned to avoid this TCAS indication which then resulted in a late sighting

⁴ Airprox 2019294 - The BGA has subsequently reminded their clubs that transponders in tug aircraft may help to reduce MAC risk under certain circumstances. In addition, they worked with a major club to establish a towing transponder code, which is now in use and was promulgated to clubs earlier this year.

of the PA25 by the C510 pilot (**CF5**). That and the PA25 pilot's turn to avoid had resulted in the aircraft being separated by 0.2NM horizontally.

Turning to the risk Board members agreed that, although the vertical separation was unknown, both pilots had reported a vertical separation of 100ft. The aircraft were separated horizontally by 0.2NM. The PA25 pilot saw the C510 at 0.3NM and received a PowerFLARM information alert at about the same time, this was sufficient for the PA25 pilot to initiate a turn away and increase the separation. The PA25 pilot was concerned because of the C510's flight profile and proximity to Parham gliders (**CF6**). The glider member believed it was a Risk Category C, but the other Board members agreed that there was no risk of collision and normal safety standards had applied, a Risk Category E.

PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK

Contributory Factors:

2020107			
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			
• Situational Awareness of the Conflicting Aircraft and Action			
2	Contextual	• Situational Awareness and Sensory Events	Pilot had no, late or only generic, Situational Awareness
• Electronic Warning System Operation and Compliance			
3	Technical	• ACAS/TCAS System Failure	Incompatible CWS equipment
4	Contextual	• Other warning system operation	Warning from a system other than TCAS
• See and Avoid			
5	Human Factors	• Monitoring of Other Aircraft	Late-sighting by one or both pilots
6	Human Factors	• Perception of Visual Information	Pilot was concerned by the proximity of the other aircraft

Degree of Risk: E.

Safety Barrier Assessment⁵

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

Flight Elements:

Situational Awareness of the Conflicting Aircraft and Action were assessed as **ineffective** because the C510 pilot had generic information that Parham was active. The PA25 pilot had no information about the C510.

Electronic Warning System Operation and Compliance were assessed as **partially effective** because the PA25 pilot received a PowerFLARM indication for the C510. The PA25 was not SSR equipped and therefore the C510's TCAS I could not detect the PA25.

⁵ 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: 2020107 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	■	■	■	■	□			