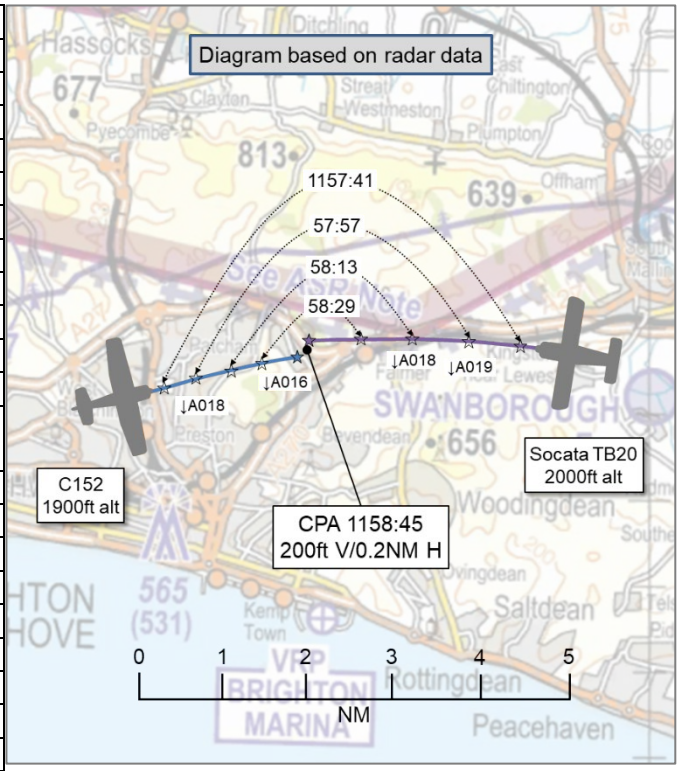
AIRPROX REPORT No 2021073

Date: 06 Jun 2021 Time: 1159Z Position: 5052N 00006W Location: 2.5NM NE of Brighton

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	C152	Socata TB20
Operator	Civ FW	Civ FW
Airspace	London FIR	London FIR
Class	G	G
Rules	VFR	VFR
Service	AGCS	Listening Out
Provider	Shoreham Radio	Shoreham Radio
Altitude/FL	A016	A018
Transponder	A, C, S	A, C, S
Reported		
Colours	White	Blue, white
Lighting	Beacon, anti-colls, nav lights	Tailfin strobe, nav, landing, taxi lights
Conditions	VMC	VMC
Visibility	5-10km	>10km
Altitude/FL	1800ft	1800ft
Altimeter	QNH	QNH (1025hPa)
Heading	060°	270°
Speed	90kt	140kt
ACAS/TAS	TAS	Not fitted
Alert	Information	N/A
Separation		
Reported	0ft V/150m H	0ft V/200m H
Recorded	200ft V/0.2NM H	



THE C152 PILOT reports that the incident occurred as they were completing the return leg of a VFR flight from Shoreham to [an airfield near London]. They had departed from Shoreham RW20 and made a left turn after departure, routing north-easterly and climbing up to a planned altitude of 2000ft on the local QNH. As they passed around 1NM north of Brighton, they levelled out at 1800ft owing to a cloudbase of scattered clouds around 2000ft. They continued flying on a heading of 060° at this altitude on local QNH and at approximately 90kts IAS. Approximately 3NM to the NW of Brighton, they received a collision warning notification on the onboard Garmin device. They are unfamiliar with the specific model of this device, but were aware that it was equipped with a collision avoidance system. From memory, they recall the alert advising them of oncoming traffic, same level and that it was 0.2NM ahead. They looked immediately at the Garmin and recall seeing '0.2NM' on the screen. This immediately caused them to scan directly ahead and, within around 1sec, they spotted the traffic that appeared to be directly in front of them. They could not tell what the aircraft type was at this point, as it appeared the size of a 5p piece in the front window. Around 1sec later, they could clearly tell the aircraft was on a collision course with their own aircraft and flying at the same level. They immediately made a right turn to avoid a collision while maintaining visual separation from the traffic. They turned around 40° to the right before levelling out. As they levelled out, they noticed the aircraft pass directly past them from right-to-left out of the port window. They could tell at this point that the aircraft was a white low-winged twin turboprop aircraft. The lateral separation at this point was around 150m and at the same level. The aircraft did not appear to take any evasive action and continued straight and level throughout. At the time, they were still in contact with Shoreham radio and about to switch to Farnborough LARS East on 123.225MHz. After the incident, they switched to Farnborough and continued en-route to [their destination]. They did not report the incident to Shoreham at the time but they did update the owner of the aircraft they were flying shortly after. They are of the belief that, but for their last-minute evasive action, a collision would have occurred. They did not see the aircraft prior to the GARMIN alert. There

were no other factors relevant to this incident in terms of flight conditions. The area ahead of them was clear of cloud and they were flying in VFR conditions.

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

THE SOCATA TB20 PILOT reports being in contact with Shoreham radio (downgraded from full ATC on that date as NOTAM'd) because they were returning to land at Shoreham following a short (approximately 1hr) local flight to the east of Shoreham. There was a bank of low cloud over the English Channel extending north as far as the south coastline. This probably resulted in VFR traffic departing and approaching Shoreham being funnelled into a narrower corridor than usual over Brighton. They were following the usual approach along the route of the A27 in preparation for a left-base join for RW20, the runway in use at Shoreham. No avoiding action was taken. When they first sighted the other aircraft it was in their 10 o'clock position, about 400m away, at a similar altitude, and heading in an easterly direction. Provided that it maintained this heading, their assessment was that there was no conflict and no risk of collision. They did not consider this to be a significant Airprox event as they were visual with the other aircraft in good time to take avoiding action had they deemed it necessary.

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

THE SHOREHAM AIR/GROUND OPERATOR did not submit a report.

Factual Background

The weather at Shoreham Airport was recorded as follows:

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METAR EGKA 061150Z 21011KT 9999 4900S FEW001 SCT012 18/15 Q1025=
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Analysis and Investigation

Shoreham ATS

The alleged Airprox occurred during a period of Air/Ground provision, and not during an ATC service. Audio recordings have been reviewed.

1150:30 [The C152 pilot] reported ready at K1 RW20. The Air/Ground operator asked [the C152 pilot] to use their full callsign as there was a similar callsign on frequency.

1151:13 [The C152 pilot] was given wind information by the Air/Ground operator (presumably [the C152] then takes off as the log shows the aircraft airborne at 1152).

No further transmissions from [The C152 pilot] or anything of relevance from other traffic.

1159:11 [The C152 pilot] reported "*1 mile north of Brighton, switching to Farnborough LARS East 123.225*".

No further transmissions of relevance.

No report of an Airprox was made on the RT whilst [the C152 pilot] was on frequency, or by any other aircraft. The initial investigation suggests there was no Radio Operator or ANSP implication. It is not possible to determine whether the other aircraft reported as "low wing 2 engines, twin turbo props" was on frequency or not. The investigation concluded that there appears to be no ANSP implication.

UKAB Secretariat

The C152 and Socata TB20 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]

Summary

An Airprox was reported when a C152 and a Socata TB20 flew into proximity 2.5NM NE of Brighton at 1159Z on Sunday 6th June 2021. Both pilots were operating under VFR in VMC, the C152 pilot in receipt of an Air Ground Communications Service from Shoreham Radio and the Socata TB20 pilot listening out on the Shoreham Radio frequency.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of reports from both pilots and radar photographs/video recordings. 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 discussed the actions of the C152 pilot and noted that they had been in receipt of an Air Ground Communications Service (AGCS) from Shoreham Radio at the time of the Airprox. Members noted that pilots cannot expect any form of Traffic Information under an AGCS and so agreed that the C152 pilot had been relying on their Garmin TAS and their lookout to detect other aircraft. The Board then discussed the efficacy of the Situational Awareness Barrier and the pilot's reported unfamiliarity with the Garmin equipment fitted to the C152; it was unclear to the Board if the Garmin TAS had detected the TB20 at greater range but the C152 pilot had not selected the correct settings, or if the first detection of the TB20 by the Garmin TAS had been at close range. Although unable to establish whether or not the C152 pilot's use of the Garmin TAS had been optimised, the Board wished to remind all pilots of the importance of understanding how to use the equipment fitted to any particular aircraft to its best effect. The Board agreed that the C152 pilot had received late situational awareness of the presence of the TB20 from their Garmin TAS (**CF1**) but, nevertheless, the equipment had provided the pilot with a warning of the presence of the other aircraft (**CF2**). The Board also agreed that this late TAS warning had cued the C152 pilot's lookout into the correct area and that they had sighted the TB20 – albeit late (**CF3**) – with sufficient time to be able to take action to increase separation.

The Board then considered the actions of the Socata TB20 pilot and noted that they had also been on the Shoreham Radio frequency but that this had not helped their situational awareness because they had not heard the C152 pilot on the frequency. Members also noted that the TB20 pilot had not had any additional electronic conspicuity equipment capable of detecting the C152 on board their aircraft, and so agreed that the TB20 pilot had not had any situational awareness of the presence of the C152 (**CF1**). The Board noted that the TB20 pilot had reported sighting the C152 in their 10 o'clock at a range of approximately 400m and had been comfortable with the separation. However, the Board's view was that the TB20 pilot's sighting had been after the C152 pilot had taken action to increase separation and that, when they had seen the C152, the opportunity for the TB20 pilot to materially affect the separation had already passed (**CF4**).

Finally, the Board considered the risk involved in this Airprox. Members noted that both pilots reported a vertical separation of 0ft but that the NATS radar recording displayed a height difference of 200ft. The Board understands that there are tolerances within not only the radar equipment but also transponder equipment, and so concluded that, although the radar displayed a height difference of 200ft at CPA, in reality it is feasible that it could have been closer to the figures reported independently by both pilots. That said, the Board also noted that the recorded lateral radar separation had been 0.2NM (~370m), and that both pilots had estimated a lateral separation of 150m or more. Consequently, members

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

agreed that, although safety had been reduced, there had been no risk of collision in this Airprox and a Risk Category C was assigned to this event.

PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK

Contributory Factors:

	2021073			
CF	**Factor**	**Description**	**ECCAIRS Amplification**	**UKAB Amplification**
	Flight Elements			
	• Situational Awareness of the Conflicting Aircraft and Action			
1	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
	• Electronic Warning System Operation and Compliance			
2	Contextual	• Other warning system operation	An event involving a genuine warning from an airborne system other than TCAS.	
	• See and Avoid			
3	Human Factors	• Identification/Recognition	Events involving flight crew not fully identifying or recognising the reality of a situation	Late sighting by one or both pilots
4	Human Factors	• Monitoring of Other Aircraft	Events involving flight crew not fully monitoring another aircraft	Non-sighting or effectively a non-sighting by one or both pilots

Degree of Risk: C

Safety Barrier Assessment[3]

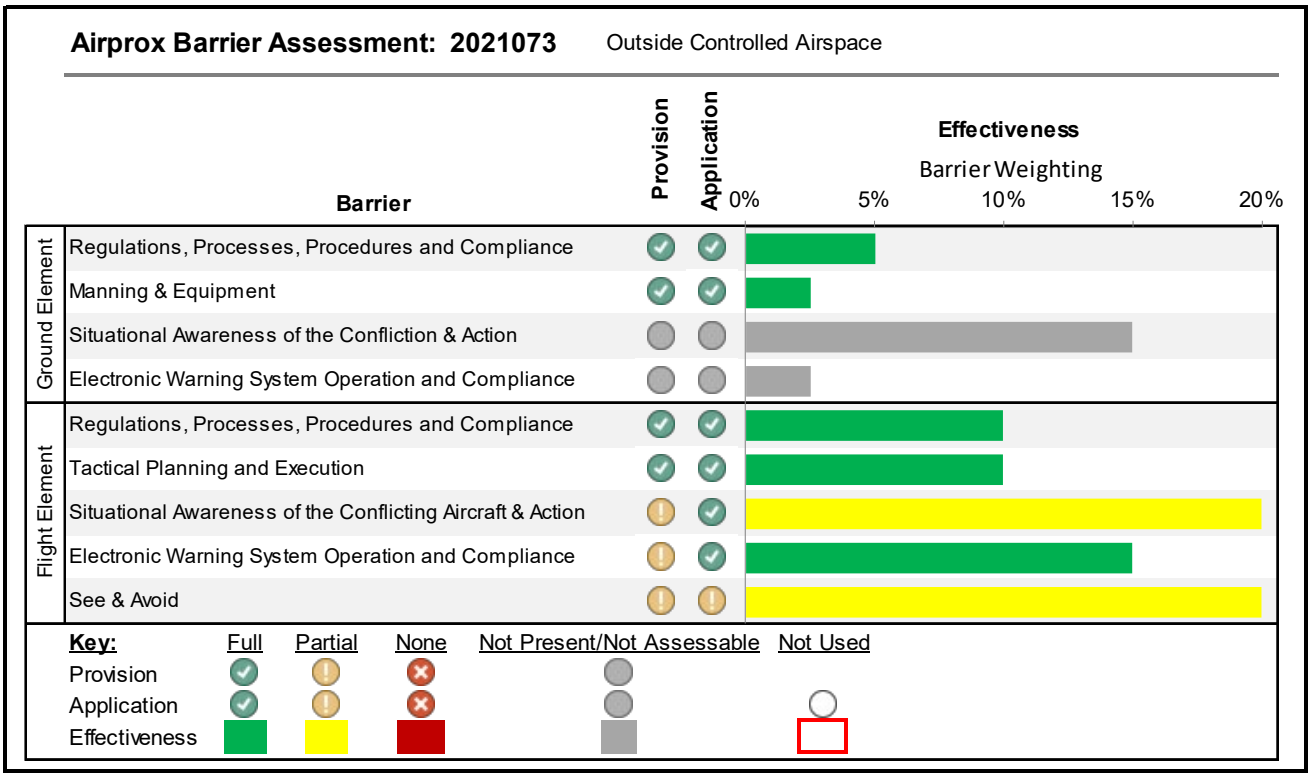
In assessing the effectiveness of the safety barriers associated with this incident, the Board concluded that the key factors had been that:

Flight Elements:

Situational Awareness of the Conflicting Aircraft and Action were assessed as **partially effective** because the Socata TB20 pilot had no prior warning of the presence of the C152 and the C152 pilot only received a warning of the TB20's presence at close range (0.2NM).

See and Avoid were assessed as **partially effective** because the C152 pilot did not sight the Socata TB20 until it was at a range of approximately 0.2NM, and the Socata TB20 pilot did not sight the C152 until it was already in their 10 o'clock.

[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: 2021073
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