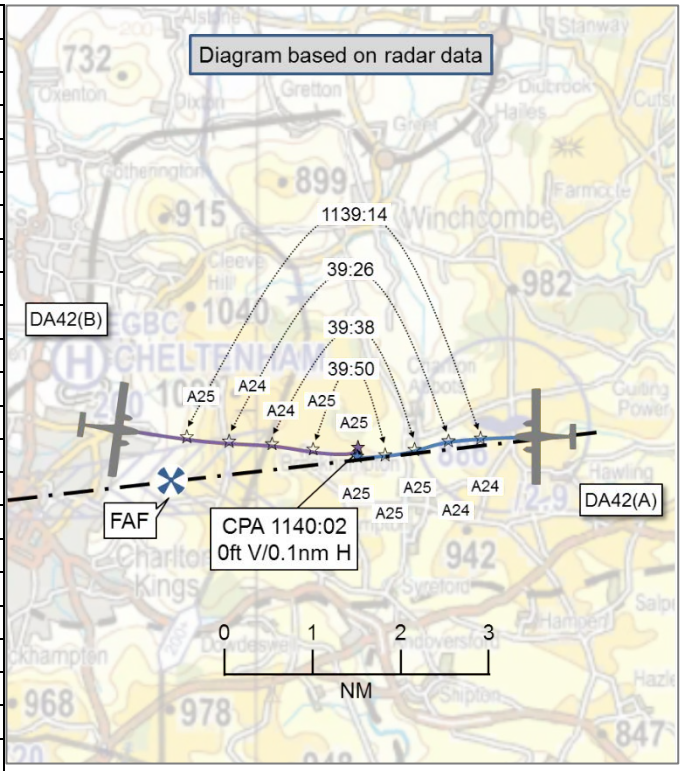
AIRPROX REPORT No 2019127

Date: 25 May 2019 Time: 1140Z Position: 5155N 00158W Location: 7.5NM E Gloucester

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	DA42(A)	DA42(B)
Operator	Civ FW	Civ FW
Airspace	London FIR	London FIR
Class	G	G
Rules	VFR	VFR
Service	Basic	Listening Out
Provider	Gloucester App	Gloucester App[1]
Altitude/FL	2500ft	2500ft
Transponder	A, C, S	A, C, S
Reported		
Colours	White	White, grey
Lighting	Strobe, nav	Strobes, nav
Conditions	VMC	VMC
Visibility	30km	>10km
Altitude/FL	2300ft	2500ft
Altimeter	QNH (1019hPa)	QNH (1018hPa)
Heading	270°	090°
Speed	120kt	130kt
ACAS/TAS	TAS	TAS
Alert	TA	TA
Separation		
Reported	100ft V/100m H	0ft V/0.5NM H
Recorded	0FT V/0.1NM H	



THE DA42(A) PILOT reports being the pilot monitoring (PM). They were cleared and established on the ILS for RW27, flying at the procedure altitude of 2300ft on the QNH and before the FAF. They received a traffic avoidance alert from the TAS, alerting traffic in the 1 o'clock at 2 miles. The pilot flying (PF) continued the approach on the localiser whilst the PM maintained lookout for the traffic. No traffic was seen until a Diamond Twinstar was spotted in the 1 o'clock position about 300ft ahead and 100ft below. As the PM saw the other aircraft it banked hard to the left, presumably to avoid them. Neither pilot in the DA42(A) felt that they needed to alter their flight path.

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

THE DA42(B) PILOT reports that he took off from RW27, climbed to 2,500 ft, levelled off and engaged the autopilot. Shortly after levelling off, he heard ATC speaking to a DA42 inbound to the overhead from the east and he scanned the horizon to look for it. He got a 'yellow traffic alert' on the PFD. He saw the DA42 and turned left to avoid. The pilot noted that, ideally, he would have seen the aircraft slightly earlier but, owing to their reciprocal headings, the closing speed was high. He heard Gloucester ATC communicating with a DA42 inbound to the GST NDB and he was looking for this aircraft when he saw it almost directly ahead. He then executed a turn to avoid it.

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

GLOUCESTER ATSU reports that no Airprox was reported on the frequency or on a phone call that was received by the [DA42(A)] pilot later in the day; therefore, no Airprox action was taken.

[1] The DA42(B) pilot had called changing to an en-route frequency but was still listening out on the Gloucester frequency.

Factual Background

The weather at Brize Norton was recorded as follows:

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METAR EGVN 251150Z 31007KT 9999 SCT040 BKN300 20/09 Q1018BLU NOSIG=
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Analysis and Investigation

CAA ATSI

An Airprox was reported when two DA42 aircraft came into proximity with each other 7.5NM east of Gloucester Staverton. The DA42(A) pilot was inbound to Gloucester under VFR and was carrying out a straight-in approach to RW27, in receipt of a Basic Service from Gloucester ATC. The DA42(B) pilot was departing VFR from Gloucester, had taken off from RW27 and was also in receipt of a Basic Service from Gloucester ATC.

Due to staffing shortages the Gloucester controller was providing a combined Aerodrome and Approach (non-radar) Service at the time of the Airprox. The controller was dealing with inbound and outbound traffic, both on the ground and in the air. The R/T was continuous throughout the period leading up to the Airprox. In the interests of brevity only the aircraft directly involved in the Airprox event have been included in this report. Screenshots in this report have been taken from the Area Radar recordings.

At 1133:20, the DA42(B) pilot was at the holding point ready for departure from RW27. The controller asked the pilot if they would like a left or right turn-out after departure and the pilot confirmed a right turn-out. The controller issued a right turn-out to the east RW27, cleared for take-off and included the surface wind. The pilot responded with *"cleared for take-off RW27 with a right turn".*

At 1133:50, the DA42(A) pilot made initial R/T contact with the controller and advised that they were 16 miles to the northeast with information Juliet, QNH 1019. The pilot was asked to standby.

At 1135:30 (Figure 1), the controller turned their attention back to the DA42(A) pilot and asked them to pass their details. The pilot advised that they were a DA42 from [departure] inbound to Gloucester, were currently 15 miles northwest at 3000ft and would like to join long-final for RW27. The controller requested a range from the pilot of an unrelated aircraft that was well ahead of the DA42(A) and then asked the DA42(A) pilot to confirm that they were to the east of the airfield. The pilot confirmed that they were east by 15 miles. A Basic Service was agreed, and the pilot was instructed to make a straight-in approach RW27 and report at 5 miles. The pilot provided a full and accurate readback. The controller then turned their attention to other unrelated aircraft.

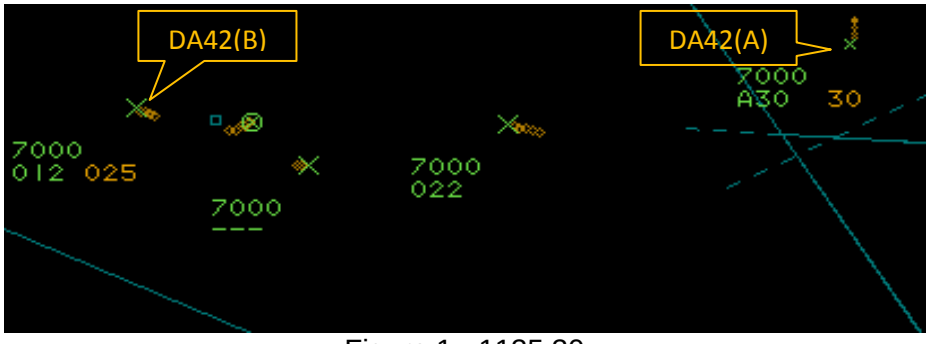

Figure 1 - 1135:30

At 1136:50 (Figure 2), the DA42(B) pilot was advised that it was now a Basic Service and advised to report leaving the frequency. This was readback accurately. The controller then turned their attention to other unrelated aircraft.

Figure 2 - 1136:50

At 1139:30 (Figure 3), the DA42(B) pilot advised the controller that they were changing to the Oxford frequency and the controller replied free call Oxford.

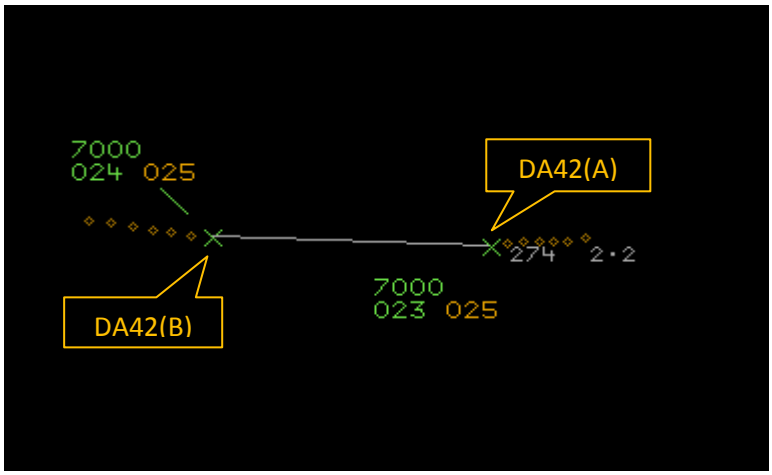

Figure 3 - 1139:30

CPA occurred at 1140:02 (Figure 4), with the aircraft separated by 0.1NM laterally and 0ft vertically.

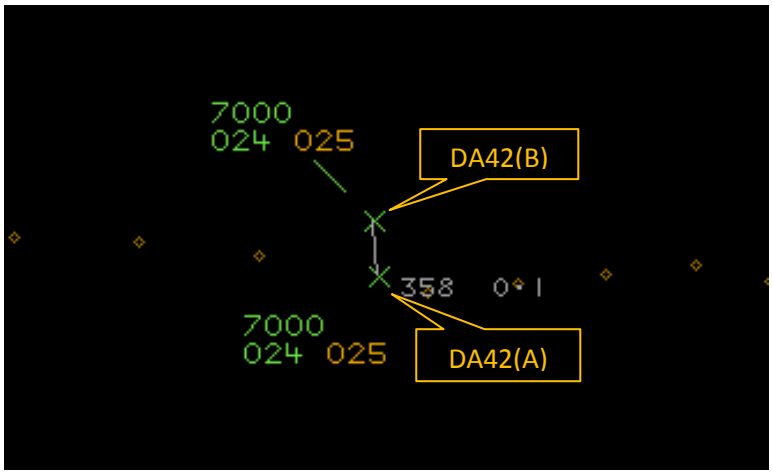

Figure 4 - 1140:02 CPA

CAP 493 extracts:

> *'Within Class G Airspace, under a Basic Service, pilots remain responsible for their own collision avoidance. The provider of Basic Service is not required to monitor the flight and pilots should not expect any form of traffic information from a controller. However, if a controller notices that a definite risk of collision exists, a warning shall be issued to the pilot. ((EU) 923/2012 SERA.9001 and SERA.9005(b)(2)).'*

The controller was very busy providing a combined Aerodrome and Approach (non-radar) Service and was not able to be able to monitor the flight. It might be argued that the controller could have

passed generic Traffic Information to both pilots after the initial R/T exchange with the inbound DA42 pilot. However, the controller would not have been aware that the departing DA42 pilot had planned to cross through the final approach area, and the pilot of the departing DA42 has confirmed in their report that they were aware of the inbound DA42 and were looking out for it.

UKAB Secretariat

The DA42 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].

Gloucester ATC Investigation

At the time of the alleged Airprox the operational ATCO was working TWR/APP combined on frequency 128.555 (due short staffing levels) with a moderate amount of traffic on frequency. The ATM was serviceable and available for [ATM] use however the radar is not approved for anything else at this stage therefore using it for anything other than this purpose was not permitted. [The DA42(A) pilot] called at 1134 advising that he was 15 miles northwest requesting a visual approach RW27. The ATCO questioned his position which was corrected as 15 miles east of the field requesting a visual approach. The ATCO cleared the pilot for a straight-in approach to RW27, placed him under a Basic Service and instructed him to report at 5 miles.

At 1134 [DA42(B)] was cleared for take-off RW27 with a right turn to the east. The pilot was subsequently placed under a Basic Service and then reported leaving the frequency at 1139. At 1140 the pilot of [DA42(A)] made a comment on the R/T to the effect: "Some idiot in a DA42 has just flown right up the instrument approach track at 6 miles, same level, he deserves a medal". This was acknowledged by the ATCO and no further discussion took place.

Both aircraft were flying in Class G airspace, under a Basic Service, VFR; it was their responsibility for collision avoidance and they should not expect traffic information. The ATCO may not have been monitoring the radar at the time and it is only approved for ATM use. [DA42(A) pilot] hadn't yet reported 5 miles. The ATCO was also busy at the time working TWR/APP combined due staff shortages. The [DA42(A)] pilot subsequently advised via telephone that he was conducting an ILS approach for which he had not been cleared to do so.

It is this investigators opinion that there were no ATCO contributory factors involved in the Airprox and therefore no action is required to be taken at the unit. It is acknowledged that Traffic Information on something believed to be departing to the east (exact tracks are unknown with VFR traffic) with something inbound from the east may have aided both pilots' situational awareness; however, taking into account all of the above, the investigation did not believe the ATCO would have had the capacity or suitable equipment to assess whether a definite risk of collision existed and therefore wouldn't have been under any obligation to do so.

Summary

An Airprox was reported when two DA42s flew into proximity 7.5NM to the east of Gloucester Airport at 1140 UTC on Saturday 25th May 2019. Both pilots were operating under VFR in VMC, the DA42(A) pilot in receipt of a Basic Service from Gloucester Approach and the DA42(B) pilot not in receipt of a FIS but listening out on the Gloucester Approach frequency.

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

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of reports from both pilots, radar photographs/video recordings, a report from the Gloucester ATSU 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.

Members discussed the degree to which Gloucester ATC were a factor in the Airprox and noted that the controller was bandboxed on combined Aerodrome and non-radar Approach services (**CF1**). Additionally, the Board noted that the radar was only approved for ATM purposes (**CF2**) and could not be used for 'controlling purposes'. Members were advised by CAA ATSI that the Gloucester controller was operating under a high workload and wondered to what degree the controller could provide appropriate Traffic Information. The Board surmised that the controller's workload (**CF6**) had contributed at least in part to him not detecting the confliction (**CF4**), albeit that he was not required to monitor the aircraft (**CF3**) (the DA42(A) pilot in receipt of a Basic Service and the DA42(B) pilot listening out on the Gloucester Approach frequency having notified the controller that he was changing frequency to Oxford). Nevertheless, controller members felt that appropriate Traffic Information would have been appropriate (**CF5**) given that the DA42(B) was departing to the east and the DA42(A) was arriving from the east. Some members felt that the availability of the radar was not an important issue and that, even when available, the system currently available at Gloucester was such that it did not provide a particularly clear surveillance picture. It was acknowledged that airfields did not require a radar in order to operate but, given the variety and intensity of operations at Gloucester, it was felt that if one were to be available, the more complete provision of service would be to the advantage of all users.

Turning to the pilots, the Board agreed that the DA42(B) pilot would have been better placed by planning their departure to remain clear of the inbound instrument approach lane (**CF7**). In the event, both pilots received TAS information and warnings (**CF9**) but it appeared to the Board that neither acted on them in a timely manner other than to simply refocus their lookout (**CF8**,**CF10**). A CAT member noted that commercial operations required a standard response to TCAS warnings and wondered whether the DA42 operating companies had similar SOPs in response to TAS warnings. In this respect, members commented that the DA42(A) pilot received TAS information at a reported '2 miles' but did not manoeuvre at all, with the PM eventually seeing the DA42(B) in very close proximity (**CF11**). Some members wondered whether the DA42(A) pilots had been task focused on achieving the approach to the detriment of collision avoidance, and they also commented that the PF had reported that 'Neither pilot in the DA42(A) felt that they needed to alter their flight path' but had nonetheless assessed the risk of collision as 'High'. Similarly, the Board felt that the DA42(B) pilot had received sufficient information from TAS and information gleaned from R/T to deconflict more effectively from the traffic in the approach lane, at least in the vertical if they felt they could not deviate laterally. In this respect, some members wondered if perhaps the DA42(B) pilot had not fully assimilated their proximity to the approach path as they established their track after turn-out.

The Board discussed the risk with many members of the opinion that the late sightings and resultant separation of less than 200m head-on indicated that there had been an actual risk of collision and that safety had been much reduced below the norm. Others noted that the DA42(A) pilot had said there was no need to alter their flight path and that the DA42(B) pilot had reported that there was no risk of collision. After further debate as to the geometry and final separation, the decision was taken to take a vote at which the majority of members agreed that safety had not been assured and that the lack of timely action by either pilot had resulted in aircraft proximity such that the safety of the aircraft may have been compromised.

PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK

Contributory Factors:

	2019127		
CF	**Factor**	**Description**	**Amplification**
	Ground Elements		
	• Manning and Equipment		
1	Organisational	• ATM Staffing and Scheduling	Sub-Optimal establishment or scheduling of staff
2	Organisational	• Aerodrome and ATM Equipment	Inadequate or unavailable equipment
	• Situational Awareness and Action		
3	Contextual	• Situational Awareness and Sensory Events	Not required to monitor the aircraft under the agreed service
4	Human Factors	• Conflict Detection - Not Detected	
5	Human Factors	• Traffic Management Information Provision	Not provided, inaccurate, inadequate, or late
6	Human Factors	• Distraction - Job Related	
	Flight Elements		
	• Tactical Planning and Execution		
7	Human Factors	• No Decision/Plan	Inadequate planning
	• Situational Awareness of the Conflicting Aircraft and Action		
8	Human Factors	• Lack of Action	Pilot flew into conflict despite Situational Awareness
	• Electronic Warning System Operation and Compliance		
9	Contextual	• ACAS/TCAS TA	TCAS TA / CWS indication
10	Human Factors	• Interpretation of Automation or Flight Deck Information	CWS misinterpreted or not optimally actioned
	• See and Avoid		
11	Human Factors	• Monitoring of Other Aircraft	Late-sighting by one or both pilots

Degree of Risk: B.

Recommendation: Nil.

Safety Barrier Assessment[4]

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

Ground Elements:

Manning and Equipment were assessed as **partially effective** due to staffing shortages at Gloucester.

Situational Awareness of the Confliction and Action were assessed as **ineffective** because the controller did not detect the confliction.

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

Flight Elements:

Tactical Planning and Execution was assessed as **partially effective** because the DA42(B) pilot departed on a track that took him into lateral and vertical confliction with traffic on the ILS approach path.

Situational Awareness of the Conflicting Aircraft and Action were assessed as **ineffective** because both pilots received TAS information at range but elected not to change their flight paths in a timely manner.

Electronic Warning System Operation and Compliance were assessed as **ineffective** because both pilots received Traffic Information from their TAS but continued closing to a CPA of 0.1NM at the same level.

See and Avoid were assessed as **partially effective** because neither pilot saw the other aircraft until at a late stage, and only one pilot took avoiding action.