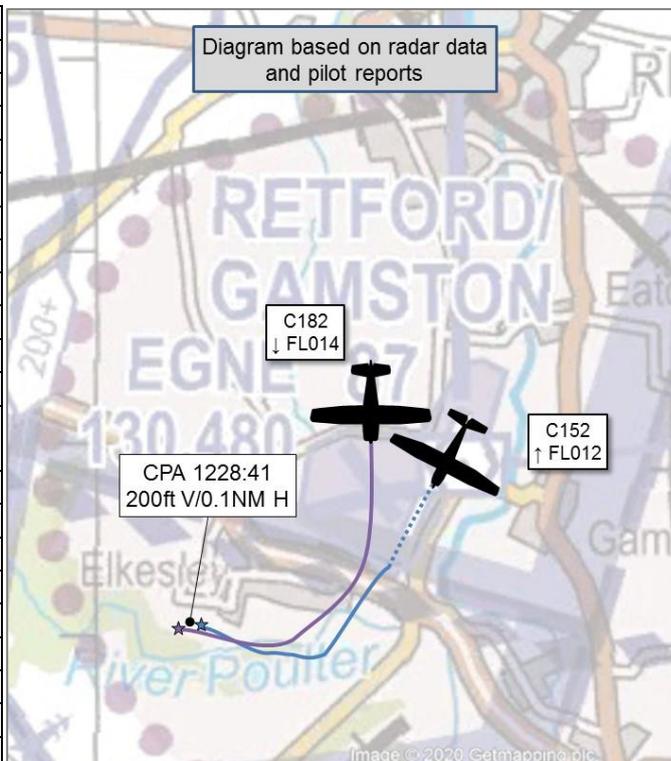


**AIRPROX REPORT No 2019312**

Date: 09 Nov 2019 Time: 1228Z Position: 5316N 00057W Location: Retford/Gamston ATZ

**PART A: SUMMARY OF INFORMATION REPORTED TO UKAB**

Recorded	Aircraft 1	Aircraft 2
Aircraft	C152	C182
Operator	Civ FW	Civ FW
Airspace	Gamston ATZ	Gamston ATZ
Class	G	G
Rules	VFR	VFR
Service	AGCS	AGCS
Provider	Gamston	Gamston
Altitude/FL	FL012	FL014
Transponder	A, C	A, C, S
<b>Reported</b>		
Colours	White	White, Red, Blue
Lighting	Nav	Strobe, Landing, Beacon
Conditions	VMC	VMC
Visibility	>10km	7km
Altitude/FL	700ft	1100ft
Altimeter	QFE (1008hPa)	QNH
Heading	270°	300°
Speed	70kt	105kt
ACAS/TAS	Not fitted	TAS
Alert	N/A	None
<b>Separation</b>		
Reported	50ft V/0NM H	Not seen
Recorded	200ft V/0.1NM H	



**THE C152 PILOT** reports that he was downwind for a touch-and-go, at the point of turning base. The C182 pilot’s initial call to Gamston Radio announced that they were positioning on a 3-mile final for RW21 in a very busy circuit. The C152 pilot announced that he was turning onto base leg, to provide the C182 pilot with some situational awareness regarding traffic in the circuit. The C182 pilot then announced that they were carrying out a righthand orbit (towards the live side of the circuit) and continued to follow the circuit the wrong way. The C182 pilot then left the ATZ to re-join for another approach. The next time he saw the C182 was when he was on crosswind in a climb when the C182 flew over the top of him at 50ft, which he announced on the radio. The C182 pilot then left the circuit again to return to their home airfield.

The pilot assessed the risk of collision as ‘Medium’.

**THE C182 PILOT** reports that they approached Gamston from the north. At 3 miles, Gamston radio informed them that one aircraft was downwind, and one was joining overhead descending deadside. They were at circuit height and unable to position to join directly behind the aircraft on the downwind leg. They elected to do a right-hand orbit away from the downwind aircraft, visible and also on TAS, and then to overfly the runway at 1000ft and join downwind. They considered that the time taken to orbit should ensure that the aircraft descending deadside would be "ahead" of them and would reach downwind before they reached the upwind end of the runway. Keeping a good lookout, and hearing no calls from the deadside descending aircraft, they crossed the upwind end of the runway at 1100-1200ft and, shortly after, turned to a heading of 300°. When approaching the downwind turn position, and looking out in both directions left and right, they transmitted "[C182 C/S] turning downwind". The Gamston radio operator immediately asked if they were visual with the other aircraft downwind. They weren’t and decided that the safest course of action was to depart the circuit straight ahead, giving them the best chance of seeing and avoiding the other aircraft. As they were departing the circuit, still

on a heading of 300°, they heard a radio call to say that an aircraft had overflowed the downwind aircraft about 50ft above. They did not see the aircraft at any time and their TAS did not give an aural traffic warning. They continued to depart the circuit and considered their options. They decided to return to their home airfield as the incident had been unsettling and they did not think that any good could be achieved by landing and discussing the incident with the other pilot. They could not quantify the risk as they did not see the other aircraft and did not know what the vertical separation was. Neither of the C182 pilots heard any calls from the aircraft deadside descending until they had already decided to depart the circuit due to uncertainty about its position. As Gamston radio were aware that the aircraft was downwind, they may have missed the call. The other C182 pilot agreed that the TAS did not give a traffic proximity aural warning for the traffic they encountered near the downwind position. The other C182 pilot thought that the TAS showed an aircraft 500ft below before the pilot announced their turn downwind. The view from the right seat is not ideal for viewing the TAS which displays in front of P1. The other C182 pilot stated that he did not mention this to the handling pilot as he thought it would distract them.

**THE AIR/GROUND OPERATOR** reports that the circuit was rather busy with 2 aircraft in the circuit, 2 or 3 aircraft preparing to take off and 2 more preparing to join to land. At about 1230 the C182 pilot called saying "Gamston, [C182 C/S] we are positioned on 4 miles final to runway 21". She replied requesting their details, mentioning that they had not filed a PPR request. The C182 pilot said "[C182 C/S] is inbound to you from [base airfield], currently positioned to the north on about 4 miles final for runway 21". She replied passing airfield details and the circuit state, suggesting the C182 pilot make a standard overhead join. She heard no reply from the C182 pilot for about 10-15 mins. Suddenly she noticed that an aircraft came from the north of the airfield close to circuit height, the aircraft went behind another aircraft on right base, cut past a second aircraft [the C152] which was late downwind and continued flying against the circuit flow on downwind leg. The C152 pilot had to carry out a left-hand orbit for separation, instead of turning base. She then transmitted requesting the aircraft which was going against the downwind circuit direction to identify themselves. She also notified the C152 pilot of the aircraft, the C152 pilot confirmed that they were visual with the aircraft and that they had started to do a left-hand orbit for separation. She again called the C182 pilot asking them to confirm if they were flying against the traffic direction and what their intentions were, at this point there were 2 other aircraft positioned downwind in the circuit. The C182 pilot replied that they would make an overhead join, then they turned sharply to their right to vacate the circuit towards the west side of the airfield. At that point there were 2 aircraft downwind, midpoint downwind and one just taken off, ready to turn downwind with the intention to climb in the overhead; all pilots had made the correct position report calls. She heard nothing from the C182 pilot for another 10-15 minutes, then she noticed an aircraft joining from the west of the airfield a few hundred feet above the circuit height, appearing to be in the climb. Shortly afterwards the C182 pilot called in the overhead descending dead-side. She watched them continuing to climb above the tower and heading towards the southeast. The C182 eventually started to descend, turning towards the southeast for another mile or two before positioning well to the south, above the area where climbing aircraft would turn crosswind. The C182 pilot then reported crosswind. At that point the C152 was climbing out after a touch-and-go and turned downwind at the usual turning point. She then said to the C182 pilot "are you visual with the aircraft which just turned downwind and is right beneath you?" The C182 pilot replied 'negative'. The C152 pilot said to the C182 pilot 'we are visual with you, you just flew 50ft above us, we are doing an orbit to the west for separation'. The C182 pilot did not reply. She then saw the C182 start to climb again, above the circuit level, and it departed in a westerly direction without any other calls. After another 10-15 minutes, their last call was that they were returning to base and changing frequency on route.

### **Factual Background**

The weather at Doncaster/Sheffield was recorded as follows:

METAR EGCN 091220Z VRB03KT 8000 NSC 05/04 Q1006

## Analysis and Investigation

### UKAB Secretariat

The C152 and C182 pilots shared an equal responsibility for collision avoidance and not to operate in such proximity to other aircraft as to create a collision hazard.<sup>1</sup> 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, and except for balloons, make all turns to the left, when approaching for a landing and after taking off, unless otherwise indicated, or instructed by ATC.<sup>2</sup>

The runway circuit direction at Retford/Gamston is notified in the Pooleys Guide as left-hand on RW03 & RW 32 and right-hand on RW14 & RW21. This information is not included in the Retford/Gamston UK AIP entry.

The following radar pictures are taken from NATS Ltd area replay and display aircraft altitude. The airfield elevation at Gamston is 87ft. At 1227:39 the C182 (Squawk 7000) joined through the overhead from the north. The C152 (Squawk 7010) has commenced its climb-out after a touch-and-go (Figure 1).

At 1228:24 both aircraft turned right onto the crosswind position (Figure 2).

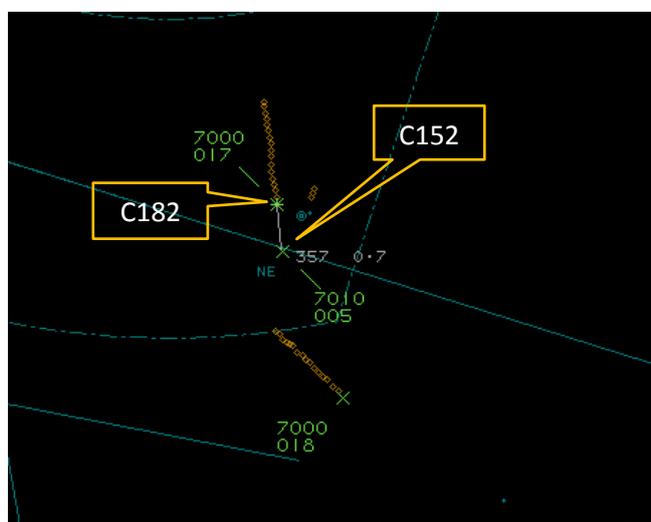


Figure 1

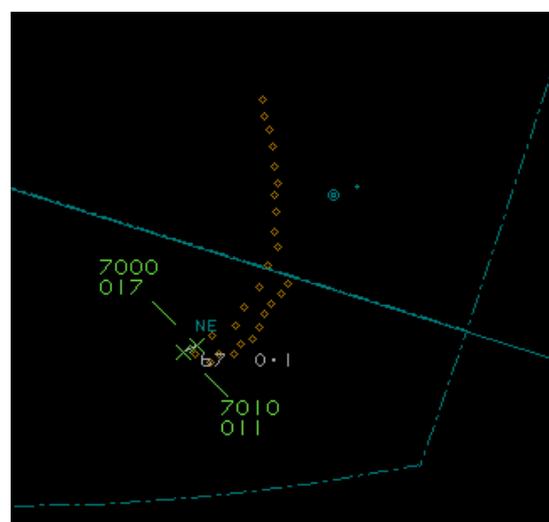


Figure 2

At 1228:32 the C182 descends into the visual circuit. The C152 has climbed to circuit altitude (Figure 3).

At 1228:41, CPA occurs (Figure 4). The aircraft are separated by 0.1NM laterally and 200ft vertically.

<sup>1</sup> SERA.3205 Proximity.

<sup>2</sup> SERA.3225 Operation on and in the Vicinity of an Aerodrome.

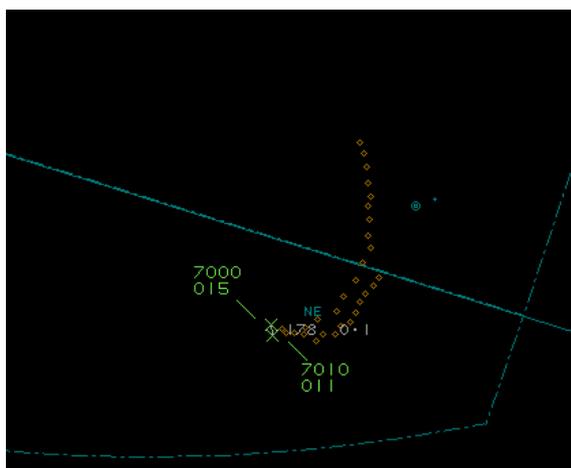


Figure 3

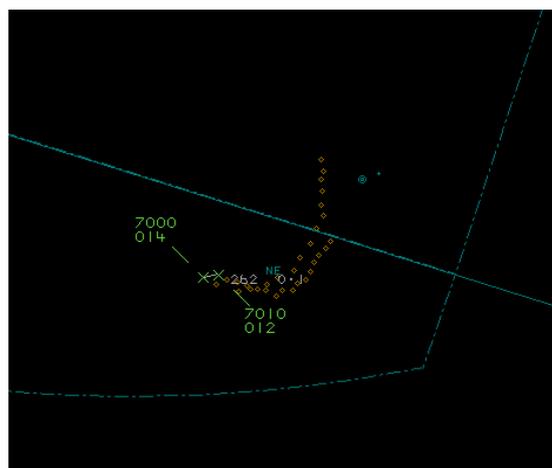


Figure 4

At 1228:52, aircraft separation increased as the C182 pilot opted to leave the circuit (Figure 5).

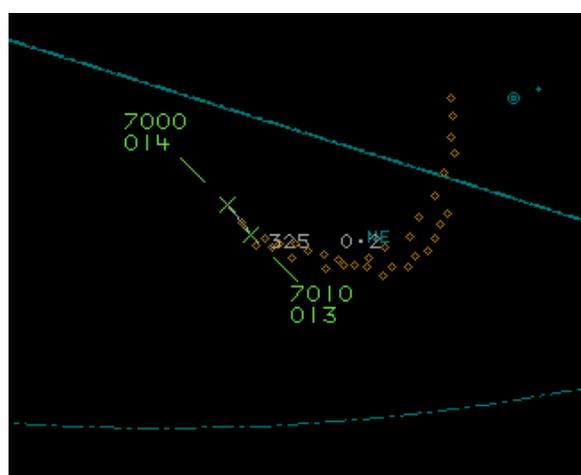


Figure 5

## Summary

An Airprox was reported when a C152 and a C182 flew into proximity in the Gamston visual circuit at 1228hrs on Saturday 9<sup>th</sup> November 2019. Both pilots were operating under VFR in VMC and in receipt of an Air/Ground Service from Gamston Radio.

## **PART B: SUMMARY OF THE BOARD'S DISCUSSIONS**

Information available consisted of reports from both pilots, radar photographs/video recordings and reports from the air traffic controller 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.

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. Although not all Board members were present for the entirety of the meeting and, as a result, the usual wide-ranging discussions involving all Board members were more limited, sufficient engagement was achieved to enable a formal assessment to be agreed along with the following associated comments.

The Board began by looking at the actions of the C152 pilot. He had seen the C182 after it first joined the overhead and when it appeared to be flying against the flow of traffic in the visual circuit. This had prompted the C152 pilot to orbit to ensure he was separated from the conflict. When the C152 pilot

completed his visual circuit and was climbing out from his touch-and-go he did not see the C182 until it had passed overhead at CPA (**CF10**) due to the high-wing configuration of the C152 (**CF9**). When he transmitted that the C182 had overflowed him by 50ft the radar replay displayed 200ft separation. Board members noted that there is a known lag in the radar altitude display, but that this would not account for the 150ft difference between perception and recording. They agreed that the difference in perceived and recorded separation could have been due to the C152 climbing out coupled with the C152 pilot's startle response.

Turning to the actions of the C182 pilot and pilot passenger, members felt that, due to the geometry of their overhead join, they did not conform with the circuit direction at Gamston. Members opined that the C182 pilot may have been operating under the misunderstanding that the circuit was left-hand and therefore that they had not adequately planned their flight before departure (**CF2**). Members wondered whether this was as a result of the lack of guidance in the Gamston entry in the UK AIP. Board members hoped that Gamston would update the UK AIP entry to ensure the UK AIP and Pooleys entries were the same regarding runway circuit directions. When the C182 pilot contacted Gamston radio they were passed the airfield details including the duty runway and circuit direction. Unfortunately, this did not prevent the C182 pilot reportedly flying downwind in the wrong direction. The C182 pilot sensibly opted to leave the circuit to re-join. However, when the C182 pilot re-joined through the overhead they did so below the recommended height, turned early from the overhead, descended into the visual circuit climb-out lane, rather than on to the deadside (**CF3**), and conflicted with the C152 which was climbing out. This resulted in them both turning crosswind at the same time and the, slightly faster, C182 passed overhead the C152, which was still climbing to circuit height (**CF4**). Although the passenger in the C182 thought they saw a TAS indication it appeared to be later than expected (**CF8**) and they chose not to inform the C182 pilot because they thought it would distract them. Members felt that this was ill-conceived, that the information could have improved the C182 pilot's awareness of the proximity of the C152 and might have avoided the subsequent close proximity. When the C182 pilot was informed they had overflowed the C152 they chose to leave the circuit and return to their home base. Members wondered why the C182 pilot had not made relevant position calls (**CF5**), which would have improved the SA of other pilots and have allowed for additional information from the air/ground operator regarding the position of other aircraft in the visual circuit.

The Board next turned to the actions of the Gamston Air/Ground Operator. Members agreed that they had passed relevant information to alert other users of the proximity to the C182 to try to increase their situational awareness.

Lastly, the Board turned to the risk. They agreed that the C182 pilot had appeared to arrive in some disarray and that their responsibility to integrate with the pattern of traffic at Gamston had not been discharged satisfactorily (**CF1**, **CF7**). Indeed, some members felt that this Airprox served as an object lesson in how not to conduct a flight to another airfield. Neither pilot was previously aware of the relative position of the other aircraft (**CF6**) nor saw the other aircraft in time to affect separation (**CF10**) so the Board discussed the likely separation at CPA. Members were unanimous in their agreement that this was a risk bearing Airprox and considered that if the separation at CPA had been 50ft then collision had only been avoided by providence. However, the radar replay indicated that separation had been a little greater at CPA, so the Board settled on risk category B, safety not assured.

**PART C: ASSESSMENT OF CONTRIBUTORY FACTOR(S) AND RISK**Contributory Factor(s):

	2019312		
CF	Factor	Description	Amplification
	<b>Flight Elements</b>		
	<b>• Regulations, Processes, Procedures and Compliance</b>		
1	Human Factors	• Flight Crew ATM Procedure Deviation	Regulations/procedures not complied with
	<b>• Tactical Planning and Execution</b>		
2	Human Factors	• No Decision/Plan	Inadequate planning
3	Human Factors	• Action Performed Incorrectly	Incorrect or ineffective execution
4	Human Factors	• Aircraft Navigation	Did not avoid/conform with the pattern of traffic already formed
5	Human Factors	• Accuracy of Communication	Ineffective communication of intentions
	<b>• Situational Awareness of the Conflicting Aircraft and Action</b>		
6	Contextual	• Situational Awareness and Sensory Events	Generic, late, no or incorrect Situational Awareness
7	Human Factors	• Monitoring of Other Aircraft	Pilot did not sufficiently integrate with the other aircraft
	<b>• Electronic Warning System Operation and Compliance</b>		
8	Technical	• ACAS/TCAS System Failure	CWS did not alert as expected
	<b>• See and Avoid</b>		
9	Contextual	• Poor Visibility Encounter	One or both aircraft were obscured from the other
10	Human Factors	• Monitoring of Other Aircraft	Non-sighting or effectively a non-sighting by one or both pilots

Degree of Risk: B.

Safety Barrier Assessment<sup>3</sup>

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

**Flight Elements:**

**Regulations, Processes, Procedures and Compliance** were assessed as **ineffective** because the C182 pilot did not comply with the provisions of SERA.3225 when joining the visual circuit.

**Tactical Planning and Execution** was assessed as **ineffective** because the C182 pilot did not adapt their plan to conform with the pattern of traffic already in the visual circuit.

**Situational Awareness of the Conflicting Aircraft and Action** were assessed as **ineffective** because the C182 pilot did not integrate with the aircraft in the visual circuit.

**Electronic Warning System Operation and Compliance** were assessed as **ineffective** because The C182's TAS did not alert as expected.

<sup>3</sup> The UK Airprox Board scheme for assessing the Availability, Functionality and Effectiveness of safety barriers can be found on the [UKAB Website](#).

**See and Avoid** were assessed as **ineffective** because neither pilot saw the other aircraft in time to increase separation.

