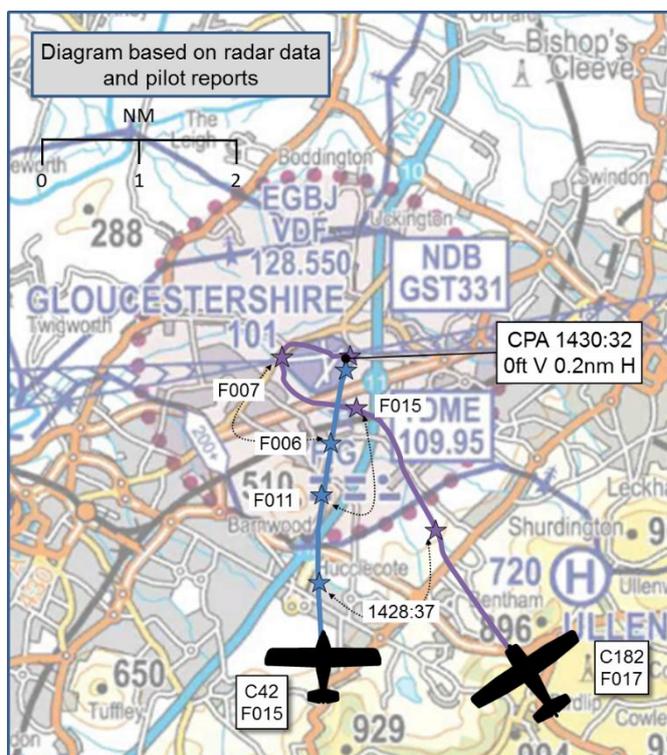


AIRPROX REPORT No 2014172**Date/Time:** 13 Sep 2014 1430Z (Saturday)**Position:** 5153N 00209W
(1nm SE of Gloucestershire Airport)**Airspace:** Gloucestershire ATZ (**Class:** G)**Aircraft 1** **Aircraft 2****Type:** Ikarus C42 Cessna C182**Operator:** Civ Trg Civ Pte**Alt/FL:** 1000ft 2000ft
QFE NK**Conditions:** VMC VMC**Visibility:** >10km NK**Reported Separation:**

0ft V/300m H NK

Recorded Separation:

0ft V/0.2nm H

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

THE C42 PILOT reports flying a white aircraft with no lighting, under VFR in VMC, and squawking transponder Modes 3/A, C and S. He was rejoining the Gloucester¹ circuit, in contact with Gloster Tower, after a training flight. He had first called Gloster Approach at 8nm, and requested a 'direct join', but he was



instructed to carry out a standard overhead join for RW09LH due to the high level of traffic. At 3nm, and 2000ft (QFE), before changing to the Tower frequency, the pilot received Traffic Information on two other aircraft, which were approaching the overhead at similar height and range; one was joining from the north and another was closing from behind his C42, but he could not see either of them. Aware that the overhead would be congested, the C42 pilot contacted Tower and requested a direct join from the south, descending straight-in, for a crosswind join at 1000ft, and emphasised that his request was due to the other traffic. The Tower controller cleared the pilot to join as requested, so he maintained a northerly heading and descended to cross the upwind (RW27) numbers from the deadside. As he levelled the C42 at 1000ft, he spotted a C182 descending rapidly, moving from right to left ahead of him, at a range of approximately 400m; it appeared that the C182 was turning right as if to perform a RW27RH circuit. The C42 pilot notified Gloster Tower, and the controller instructed the C182 to reposition for RW09LH; the C182 pilot acknowledged the call, and then turned right 180°, from a northerly heading on to a reciprocal heading with the C42, and at the same height. The C42 pilot then saw the C182 turn left to head 090°, along the line of the runway, no more than 300m away. The C42 pilot had initiated avoiding action by turning right but, once he became certain that the C182 pilot had turned onto the crosswind leg, he slowed his speed in order to increase separation, and then informed Tower that he would position No.2 to the C182.

He assessed the risk of collision as 'High'.

THE C182 PILOT reports flying with Transponder Modes 3/A, C and S selected, under VFR in VMC, at 100kt, for an overhead join at Gloucestershire Airport. He was in contact with Gloster Tower,

¹ Gloucestershire Airport has the ATC callsign, and is referred to as 'Gloster'.

turning and descending from 2000ft, and whilst he heard other aircraft on the frequency, he 'had no visual contact' with the C42.

He did not assess the risk of collision.

THE GLOSTER TOWER CONTROLLER reports that the C182 and the C42 pilots were both cleared for overhead joins, and were instructed to report descending on the dead-side. All aircraft had been passed generic and specific Traffic Information by the Approach controller, and the Tower controller repeated it. Whilst the C42 was on the dead-side, its pilot reported that the C182 appeared to be descending the wrong way round, possibly right-hand. The C182 pilot acknowledged his error and the Tower controller instructed him to reposition onto the dead-side, and passed him Traffic Information that the C42 was on the dead-side. The controller saw the C182 tracking east-bound, and it appeared to be approximately along the runway centreline. It then made a right-turn onto the dead-side and, shortly after this, the C42 pilot commented that the C182 pilot had turned in front of him and would now be No.1 for the runway. The Tower controller could not see the occurrence because it happened above the tower.

Factual Background

The weather at Gloucestershire Airport at 1420 was recorded as:

METAR EGBJ 131420Z 03005KT 9999 SCT032 20/12 Q1026

Analysis and Investigation

CAA ATSI

The CAA ATSI had access to Gloster RTF and area radar recording together with written reports from the Aerodrome controller and both pilots. Gloster ATSU were providing a split Aerodrome and Approach control service without the aid of surveillance equipment. The two controllers were operating side by side from the VCR. The UK AIP AD 2.EGBJ-10 (14 Nov 2013) states:

- (a) Fixed-wing circuit height 1000 ft QFE. Rotary circuit height not above 750 ft QFE. Runway 04, 09 and 18 LH circuit, Runway 22, 27 and 36 RH circuit. Direction may be varied by ATC.

Both pilots had previously been in receipt of a Basic Service from Gloster Approach. At 1423:30 the C42 pilot reported at 8nm south and requested a direct join. The Approach controller advised that the Tower was busy and instructed "(C42)c/s make a standard overhead join runway zero nine left hand the QFE one zero two four and report at three miles". The C42 pilot replied "Roger standard overhead join er zero nine one zero two four the QFE report three miles (C42)c/s". At 1424:20 the C182 pilot contacted Gloster Approach reporting inbound at 2500ft, approaching the Cotswold Ridge. The Approach controller responded "(C182)c/s Basic Service QNH one zero two six report three miles for a standard overhead join runway zero nine left-hand QFE if you need it one zero two four". The C182 pilot acknowledged "QFE one zero two four report three miles for a standard overhead join for a left-hand zero nine (C182)c/s". The Approach controller advised the C182 pilot that his transmission was readability 2.

At 1427:00 the Approach controller passed traffic information to the two aircraft:

Approach	"(C182) c/s traffic overhead from the southwest is a C forty-two believed to be in your left eleven o'clock range of one mile"
C182	"(C182) c/s standby".
Approach	"(C42) c/s traffic inbound from the southeast Cessna one eight two two thousand feet towards the overhead"
C42	"Er roger that (C42) c/s"

At 1427:37 the C42 was 3.6nm south of Gloster, and the C182 was 4.6nm southeast of Gloster. The Approach controller passed Traffic Information on another aircraft to both the C42 and C182 pilots before transferring them to the Tower frequency

At 1428:00 the following RTF exchange occurred:

C182	<i>"Tower (C182) c/s</i>
Tower	<i>"(C182) c/s Gloster Tower report descending on the dead-side traffic descending ahead is an Ikarus (the C42)"</i>
C182	<i>"Report descending dead-side er copy your traffic descending ahead"</i>
C42	<i>"Er Gloster Tower (C42) c/s with you"</i>
Tower	<i>"(C42) c/s Gloster Tower report descending on the dead-side"</i>
C42	<i>"Er report descending dead-side (C42) c/s er will it help with the flow if I er we descend direct dead-side to go crosswind"</i>
Tower	<i>"(C42) c/s affirm"</i>

At 1429:00 radar showed the C42's position 2nm south of Gloster at FL013, with groundspeed (G/S) of 069kts. The C182 was 1.4nm southeast of Gloster at FL017 with ground-speed of 123kts – Figure 1.

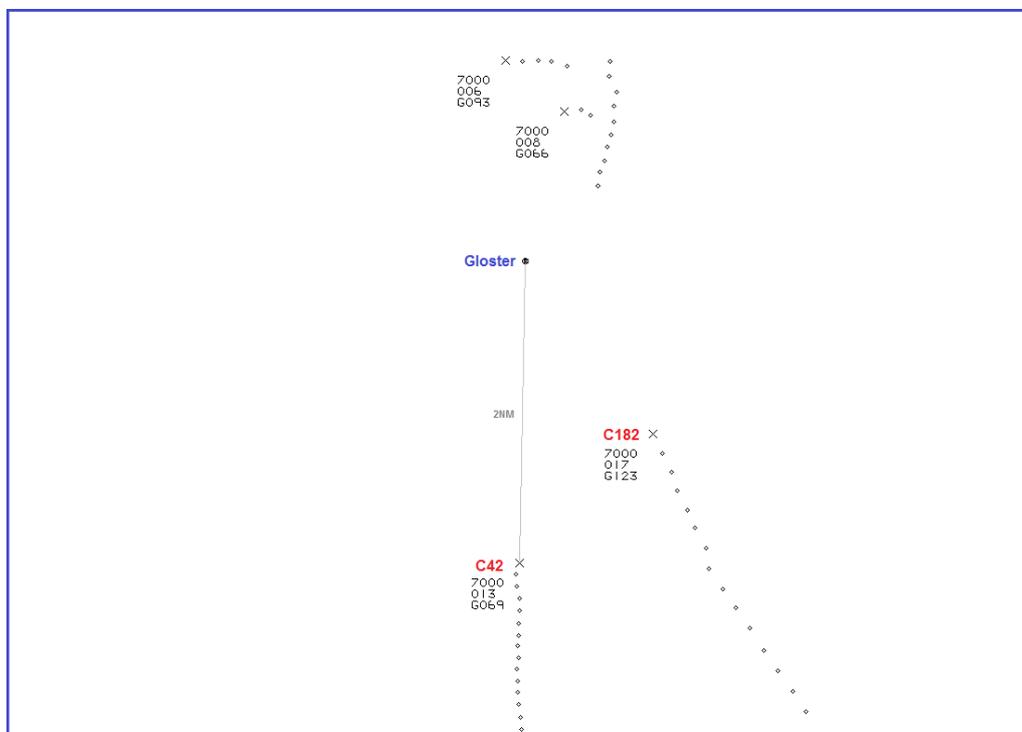


Figure 1 – Swanwick MRT at 1429:00

At 1429:26 the C182 is shown commencing a left turn 0.6nm south of the airfield and the following RTF exchange occurs:

C42	<i>"(C42) c/s descending deadside"</i>
Tower	<i>"(C42) report downwind"</i>
C42	<i>"Er report downwind and er visual with a Cessna at this time er crossing right to left"</i>
Tower	<i>"Roger (C42) c/s"</i>

At 1429:42 the C182 was shown to have made a left turn followed by a right turn – Figure 2.

C42	<i>"Er (C42) c/s that descending Cessna appears to be in a right-hand turn er is he going the wrong way round the circuit"</i>
C182	<i>"Roger apologies (C182) c/s"</i>
Tower	<i>"(C182) c/s roger if you reposition to the dead-side traffic descending at the moment is an Ikarus (C42)"</i>

C182 "Roger (C182)"

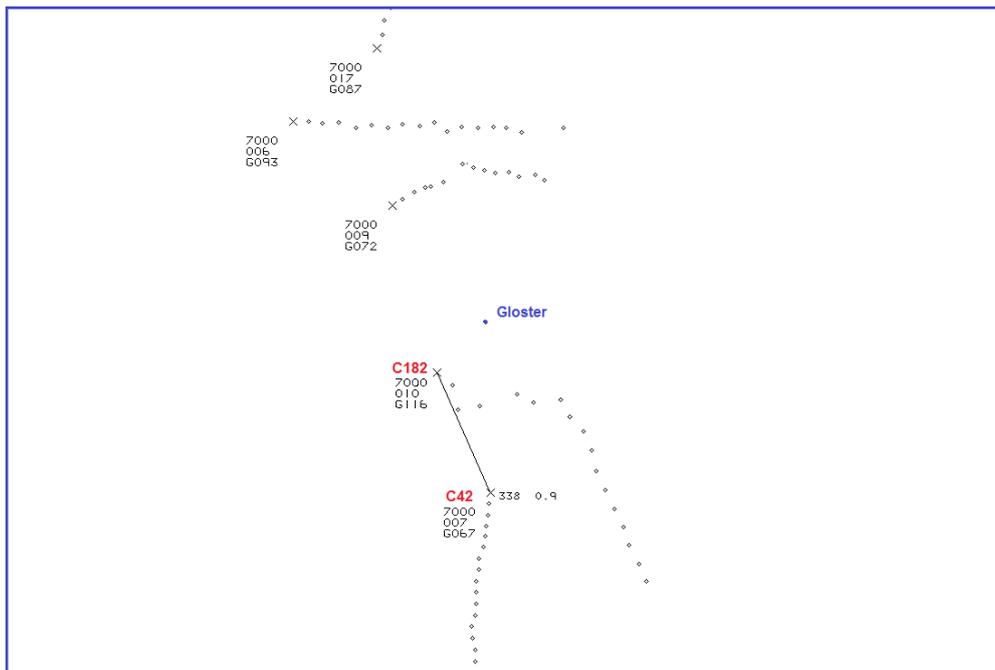


Figure 2 – Swanwick MRT at 1429:42

At 1430:14 the C182 had turned through 180 degrees and was overhead the airfield on a reciprocal track to the C42. Both aircraft were indicating FL003 (height 600ft on QNH 1024hPa) at a range of 0.6nm – Figure 3.

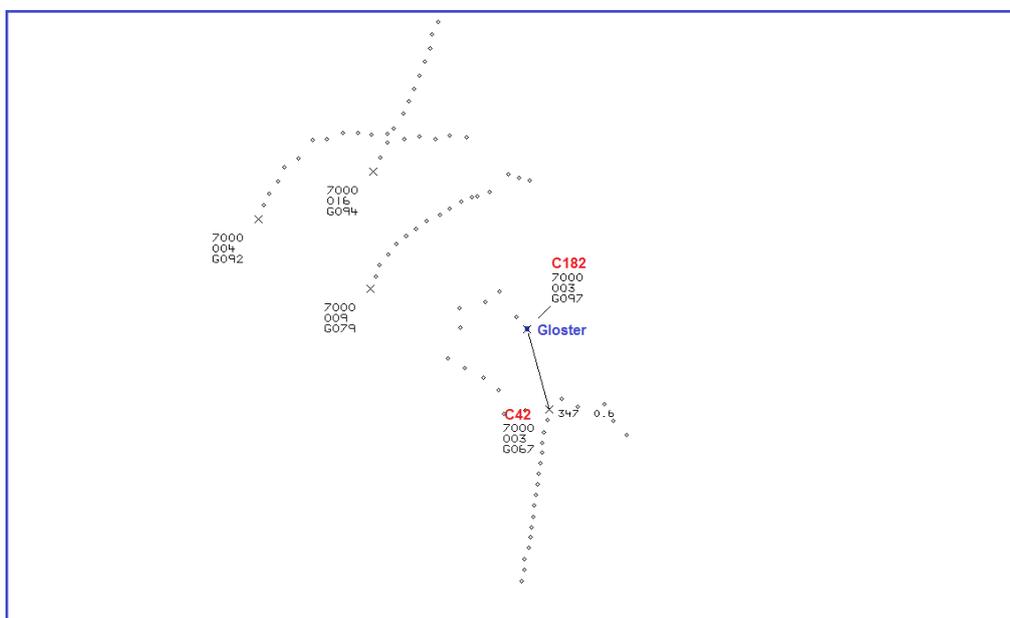


Figure 3 – Swanwick MRT at 1430:14

The next sweep of the radar (1430:18) showed the horizontal distance as 0.4nm with the C182 100ft below the C42 – Figure 4.

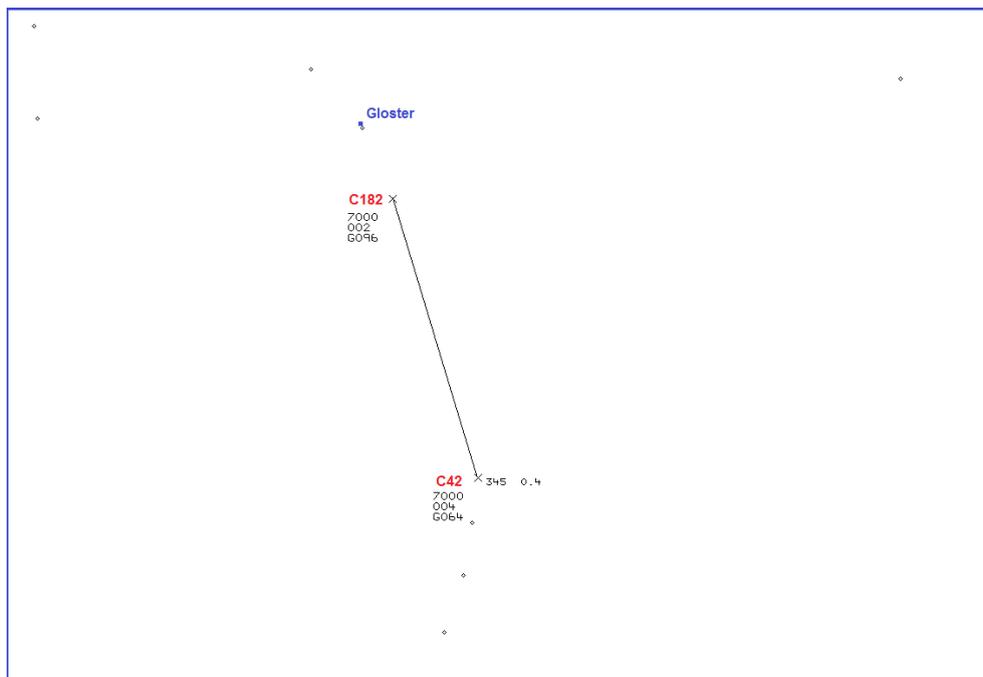


Figure 4 – Swanwick MRT at 1430:18

At 1430:26 (CPA) the C42 pilot reported “(C42)c/s the Cessna appears to be turning er directly in front of us into the circuit so he looks like he’s number one now”. This was acknowledged by the Tower controller. The C182 is shown tracking northeast, in the C42’s 12 o’clock, at range of 0.2nm and 100ft below – Figure 5.

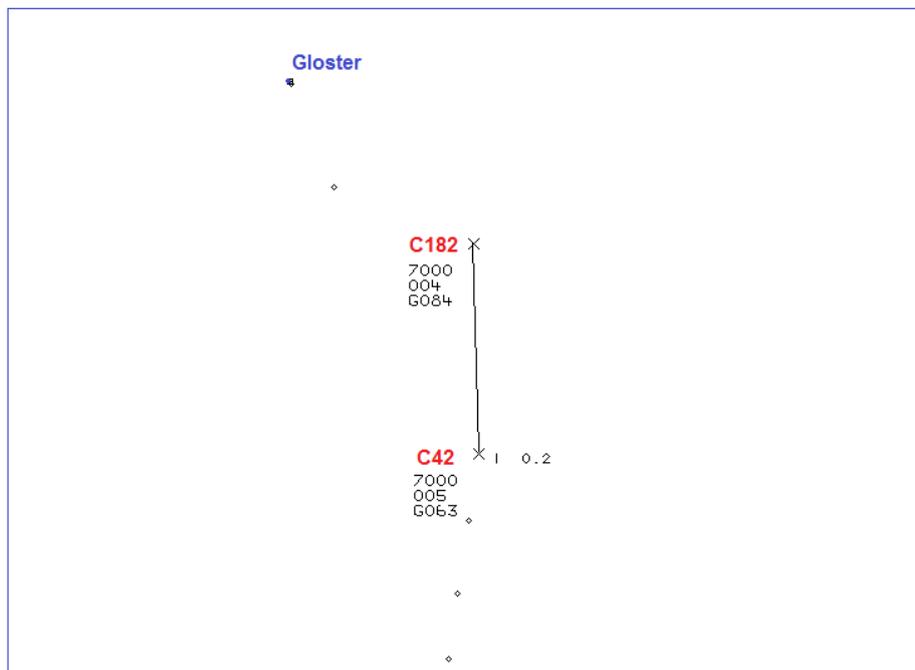


Figure 5 – Swanwick MRT at 1430:26

At 1430:34 The C182 continued the turn north - Figure 6.

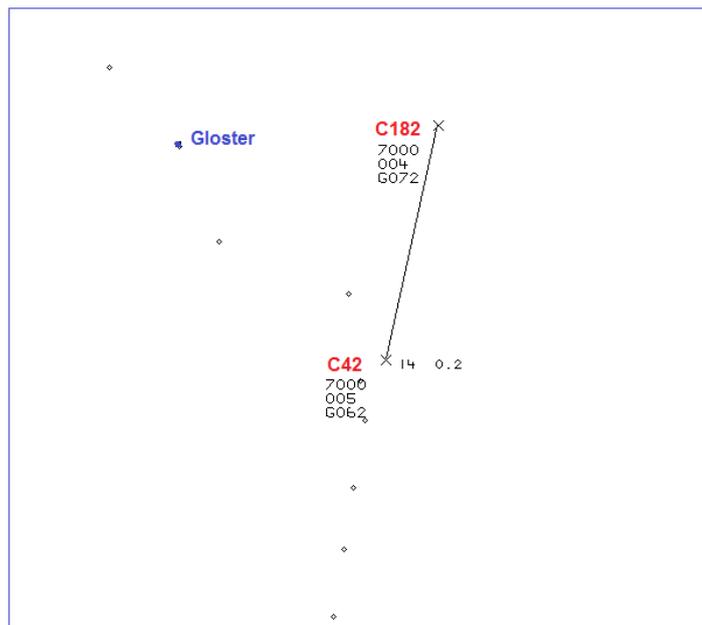


Figure 6 – Swanwick MRT at 1430:34

The C42 then faded from radar and the C182 continued to position crosswind and then downwind ahead of the C42, and the two aircraft continued to land without further incident.

Both aircraft were within the ATZ and in receipt of an Aerodrome Control Service. CAP493 - The Manual of Air Traffic Services (MATS) Part 1, Section 2, Chapter 1, Paragraph 1.4 states:

‘Aerodrome Control shall issue information and instructions to aircraft under its control to achieve a safe, orderly and expeditious flow of air traffic with the objective of: Preventing collisions between: aircraft flying in, and in the vicinity of, the ATZ...

...Note: Aerodrome Control is not solely responsible for the prevention of collisions. Pilots and ... must also fulfil their own responsibilities in accordance with Rules of the Air.’

Paragraph 1.23 states:

‘Traffic information and instructions shall be passed to aircraft on any occasion that a controller considers it necessary in the interests of safety, or when requested by a pilot. In particular, Aerodrome Control shall provide:

generic traffic information to enable VFR pilots to safely integrate their flight with other aircraft; specific traffic information appropriate to the stage of flight and risk of collision; timely instructions as necessary to prevent collisions and to enable safe, orderly and expeditious flight within and in the vicinity of the ATZ.’

Both aircraft had previously been instructed by the Approach controller to position for a standard overhead join RW09LH. [It was noted that the C42 pilot did not read-back ‘left-hand’ but this was not a factor in the Airprox.] The C182 pilot gave a correct full read-back. Both pilots had been passed appropriate Traffic Information by the Approach controller prior to being transferred to the Tower.

As the two aircraft approached the airfield, the C182 was slightly ahead of the C42. However, on initial contact, the Tower controller instructed the C182 pilot to report dead-side, reporting that the C42 was descending ahead. Although this was incorrect (the C42 was behind) it was not considered to be a factor in the Airprox.

When the C42 pilot contacted the Tower, the controller agreed to allow the C42 to route direct to join crosswind, descending on the dead side. The C42 pilot then sighted the C182 descending ahead. The C182 pilot had acknowledged the instruction to join overhead for the left-hand traffic pattern on RW09. It was considered likely that the C182 pilot became disorientated as he descended early on the deadside, and failed to follow the overhead joining procedure for a left-hand pattern on RW09; this resulted in the C182 pilot descending into conflict with the C42, which was joining crosswind.

UKAB Secretariat

The pilots were flying in the vicinity of a published aerodrome and were required to conform to the pattern of traffic formed by other aircraft intending to land at that aerodrome or keep clear of the airspace in which the pattern was formed.² The Gloster Tower controller had communicated the order of priority for landing, and so the pilots were required to approach to land in that order.³ Nonetheless, both pilots had the responsibility for avoiding collisions and for ensuring that they do not fly in such proximity to other aircraft as to create a danger of collision.⁴

Summary

An Airprox was reported overhead Gloucestershire Airport, within the Class G airspace of the Gloster ATZ⁵, between an Ikarus C42 and a Cessna C182. Both aircraft were being flown under VFR, on flights inbound to Gloster, and their pilots were in receipt of Aerodrome Control Services from Gloster Tower on the same frequency and had been passed Traffic Information on each other and an order of landing.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available included reports from the pilots of both aircraft, transcripts of the relevant RT frequencies, radar photographs/video recordings, reports from the air traffic controller involved and reports from the appropriate ATC and operating authorities.

The Board first considered the actions of the Tower controller. Normally, a controller would allocate the order of recovery as aircraft report at the overhead but in this case, the circuit was busy, and members agreed that the controller had displayed considerable flexibility by recognising that the C42 pilot was trying to help expedite the circuit flow by joining cross-wind, and had integrated his request in to the busy circuit. Some members wondered if the controller might have noted that the C182 would have been considerably faster than the C42 and therefore sequenced it ahead; however, it was noted that the C42 pilot made contact well before the C182 pilot and so this was probably not achievable in this case. All-in-all, the Board thought that the controller had done well to manage the C182 pilots incorrect join and provide a practical suggestion to resolve the situation, despite being unable to see the conflict.

The Board then discussed the actions of the C182 pilot and quickly determined that he had clearly made a mistake and joined for the incorrect runway; it was not clear why this was, but there could have been some expectation bias or reversionary behaviour if he had predominantly joined for RW27 in the past. Nevertheless, regardless of the Human Factors issues involved, the Board opined that, in the busy traffic pattern, once he had realised his mistake the C182 pilot would have been better served by returning to the overhead and correcting his positioning at that level rather than manoeuvring at circuit height having been told that the C42 was joining crosswind. The Board agreed that the cause of the Airprox had been that the C182 pilot had flown into conflict with the C42 during these manoeuvres after having mistakenly joined for the wrong runway.

² Rules of the Air 2007, Rule 12, Flight in the vicinity of an aerodrome, and Regulatory Article 2307(1) Para 16

³ Rules of the Air 2007, Rule 13, Order of Landing

⁴ Rules of the Air 2007, Rule 8, Avoiding Aerial Collisions

⁵ Aerodrome Traffic Zone

Turning to the actions of the C42 pilot, members noted that he had seen the C182 early and commended him for his situational awareness in managing the situation as the conflict progressed. Noting that he had acted early enough to adjust his speed and track to account for the C182 pilot's mistake, members agreed that the C42 pilot's actions had been timely and effective, and they decided that the Degree of Risk was therefore Category C.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: The C182 pilot flew into conflict with the C42 having mistakenly joined for the reciprocal runway.

Degree of Risk: C.

ERC Score⁶: 4.

⁶ Although the Event Risk Classification (ERC) trial had been formally terminated for future development at the time of the Board, for data continuity and consistency purposes, Director UKAB and the UKAB Secretariat provided a shadow assessment of ERC.