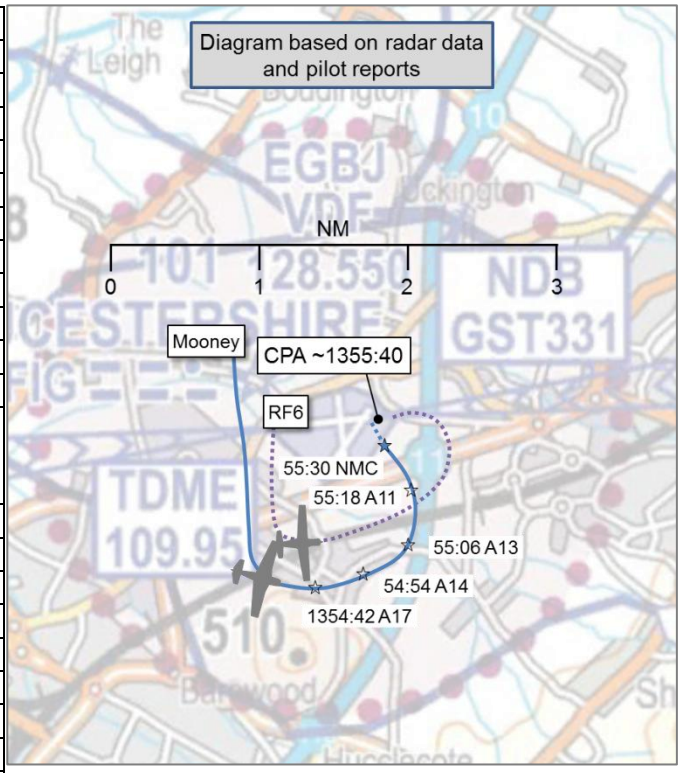
AIRPROX REPORT No 2015103

Date: 3 Jul 2015 Time: 1355Z Position: 5154N 00210W Location: Gloucester Aerodrome

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	Mooney M20	Fournier RF6
Operator	Civ Pte	Civ Trg
Airspace	Gloster ATZ	Gloster ATZ
Class	G	G
Rules	VFR	VFR
Service	Aerodrome	Aerodrome
Provider	Gloster TWR	Gloster TWR
Altitude/FL		
Transponder	A, C, S	Not fitted
Reported		
Colours	White/red	Yellow
Lighting	Red beacon, wing and tail strobes	NK
Conditions	VMC	VMC
Visibility	>10km	>10km
Altitude/FL	1000ft	1500ft
Altimeter	QFE (1021hPa)	QNH (1022hPa)
Heading	355°	180°
Speed	100kt	75kt
ACAS/TAS	Not fitted	Not fitted
Separation		
Reported	20ft V/<50m H	0ft V/100m H
Recorded	NK	



THE MOONEY PILOT reports conducting a 'Standard Overhead Join' [to RW09 left-hand] having arrived from the north. He was following a C172, which he saw on deadside as it was turning crosswind. As the Mooney pilot commenced his descent on the deadside [heading south], he saw a yellow aircraft pass below him [heading east] at about circuit height and in an 'unusual position'. As the Mooney pilot turned on to crosswind he was aware of the yellow aircraft to his right, and in front. As he passed overhead the RW27 threshold, the yellow aircraft turned left across his path without warning, again in an unusual circuit position. He believed the yellow aircraft also turned in front of the preceding C172, causing it to extend downwind. He stated that the pilot of the yellow aircraft 'violated all rules for joining' and was communicating poorly with ATC.

He assessed the risk of collision as 'Medium'.

THE RF6 PILOT reports that he was returning to Gloucester on completion of a local navigation exercise with a PPL student. He had been cleared for a 'Standard Overhead Join' to RW09 left, to call descending deadside. Approaching from the south, he instructed the student to fly to the overhead at 2100ft on QNH and turn left to position the aircraft to descend on the deadside, which required a 180° turn. The radio was 'very busy', and he was unable to call the Tower at this point. When still overhead and now flying south, he saw a Mooney aircraft approximately 100m to his right at the same height and heading. He had by now started a descending left-hand turn, initially being able to keep the other aircraft in sight. At this point the Mooney pilot called "descending deadside" and was 'given number 3'. The RF6 pilot was then able to make his descending deadside call and was 'given number 5'. The Mooney was directly behind him and he recognised that there would be a potential confliction on the crosswind leg so he called "turning behind the Mooney" and did so, clearly seeing the Mooney on his left in the turn. At the same time, he heard the Tower instructing him to turn behind the Mooney. It was at this point that the Mooney pilot reported a yellow aircraft crossing

ahead and filed an Airprox Report. The RF6 pilot stated that, except for when the Mooney was directly behind him for approximately 30sec, he had it in sight on the deadside and subsequent circuit.

He assessed the risk of collision as 'Low'.

THE GLOSTER AERODROME CONTROLLER reports a Mooney was carrying out a standard overhead join for RW09 LH when the pilot reported that a yellow aircraft had passed straight in front of him. This aircraft was identified as an RF6, who had also been given a standard overhead join for RWY09 LH. The Mooney pilot advised that he would be filing an Airprox. The Aerodrome Controller acknowledged this and advised him that details would be obtained once he had landed.

Factual Background

The weather at Gloucester was recorded as follows:

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METAR EGBJ 1350Z 09008KT 9999 FEW040 25/10 Q1022=
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Analysis and Investigation

CAA ATSI

It was not possible to identify the RF6 using the radar recording as primary radar cover using the Swanwick MRT is poor at Gloucester at low level, and the RF6 was not transponder equipped. The Mooney pilot however was transponder equipped, and was visual on radar throughout the period leading up to the Airprox, although it faded soon afterwards.

The Mooney pilot was approaching Gloucestershire Airport from the north and was instructed to report descending on the deadside. When the Mooney pilot reported descending (at 1353:50), Traffic Information was passed about a C172 also descending deadside. The C172 pilot had previously reported descending on the deadside and was ahead of the Mooney. The Mooney pilot confirmed visual with the C172 and was instructed to follow.

The RF6 pilot had also been cleared for an overhead join by Gloster Tower and told to report descending on the deadside. The RF6 had approached from the south which, for RW09, entailed a 180° turn overhead. Gloster Tower was very busy with little quiet time on the radio and consequently the RF6 pilot delayed reporting his descent.

At 1354:30, the RF6 pilot reported descending deadside and was also provided with Traffic Information on both the C172 and Mooney. At 1354:42, the RF6 pilot reported having the Mooney in sight, although remarked that it was a little close, and reported he intended to descend and extend downwind. The controller told the RF6 pilot that he was number 5 in the sequence and instructed him to follow the Mooney. The RF6 pilot replied that he would orbit and position behind the Mooney. At 1355:18, the Mooney pilot reported that a yellow aircraft (the RF6) had crossed straight in front of their flight path.

By monitoring the progress of the Mooney and correlating this with the RT recording, it was possible to establish that the Airprox occurred just as the Mooney pilot approached overhead the threshold of RW27, heading north for crosswind RW09 left-hand. The controller would not have been able to see the RF6 turn overhead (as this is not possible from the VCR due to the ceiling), so was reliant on timely and accurate position reports by pilots in order to discharge their responsibility for providing Traffic Information, in accordance with providing an Aerodrome Control Service.

As both aircraft were being operated in class G airspace, the pilots remained responsible for their own collision avoidance.

UKAB Secretariat

The Mooney and RF6 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]. 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[2]. If an air traffic control unit has communicated to any aircraft an order of priority for landing, the aircraft must approach to land in that order[3].

Gloucester Aerodrome Occurrence Investigation

[The RF6 and Mooney pilots] were both working approach, and had requested to join the traffic circuit to land. The APP ATCO had recently transferred a number of aircraft to Tower control. [The RF6 pilot] was instructed to make a standard overhead join and was approaching the overhead from the south. [The Mooney pilot] was also instructed to make a standard overhead join. At approximately 13:50:22 the APP ATCO had instructed [the RF6 pilot] to contact the Tower frequency, and was given traffic information on a DR40 and C172 joining ahead. This instruction was not read back by the pilot. The APP ATCO did not challenge the lack of read-back, and made an assumption that the pilot had either not heard the instruction or had transferred to Tower. Either way the APP ATCO retained the FPS strip but stated in an interview that he had moved it from the 'active' central FPS bay to the left hand 'inactive' bay. At approximately 13:54 the APP ATCO had instructed the pilot of [the RF6] to hold off to the south of the ATZ. This instruction was not read back by the pilot either. The ATCO did not challenge the lack of read back. Unit incident investigators have interviewed both the ATCO and the pilot of [the RF6]. The pilot was unable to recall hearing these instructions, stating that the RT was extremely busy. At approximately 13:54 [the Mooney pilot] was instructed by APP to hold off to the N of the ATZ and commenced an orbit. On rolling out of the orbit, the aircraft was instructed to contact Tower. The APP ATCO offered no specific traffic information on any other aircraft joining ahead in the sequence.

The Tower ATCO stated in an interview that the APP ATCO had to be asked for the FPS for [the RF6] as the aircraft called. The Tower ATCO had assumed the sequence was that [the Mooney] was ahead of [the RF6] (due to the late transfer to Tower). Because the deadside for RW09 is not visible due to the physical characteristics of the tower, the Tower ATCO asked if the pilot of [the RF6] was visual with a Mooney. The pilot reported visual, and was subsequently instructed to position behind the Mooney, and that he was number 5 in the sequence. The pilot of [the RF6] responded, stating that he would carry out an orbit to position behind the Mooney. The potential implications of this manoeuvre was not fully recognised by the Tower ATCO because spatial awareness of the deadside was limited. This was compounded by the limited space within the ATZ given the volume of other traffic, the limited spatial awareness of the Mooney pilot as Traffic Information had not been passed prior to transfer to Tower, together with the significant difference in relative aircraft performance. These were all deemed to be contributing factors in this incident. The pilot of [the RF6] stated during an interview that he was on the deadside descending, and was visual with the Mooney to his right and as he approached the end of the deadside leg about to turn left cross wind; he was concerned at the performance differential between the two aircraft. He verified that he was visual with the Mooney, and had told the Tower ATCO that he would orbit to position behind, he then turned left as if to fly crosswind, but continued the left turn to commence an orbit inside the Mooney who had also commenced the crosswind leg. It was at this point the Mooney pilot reported the Airprox.

[1] SERA.3205 Proximity.
[2] SERA.3225 Operation on and in the Vicinity of an Aerodrome.
[3] Rules of the Air 2015, Rule 9 (Order of Landing).

Summary

An Airprox was reported when a Mooney and an RF6 flew into proximity at 1355 on Friday 3rd July 2015. Both pilots were operating under VFR in VMC and both were in receipt of an Aerodrome Control Service from Gloster Tower.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of reports from the pilots of both aircraft, radar photographs/video recordings, a report from the air traffic controllers involved and reports from the appropriate ATC and operating authorities.

Members spent some time discussing the sequence of events and the responsibilities of the parties involved. It was agreed that the visual circuit and the airfield area were very busy, both with fixed wing traffic to the duty runway and rotary wing traffic to the helicopter areas. The Board noted that the Approach controller had instructed both Airprox pilots to make an overhead join, and that the RF6 pilot was then transferred to Tower frequency but that the Approach controller did not obtain read-back confirmation. The RF6 pilot was later instructed by the Approach controller to hold off to the south of the aerodrome, but the Approach controller had already transferred him to Tower frequency some minutes earlier and did not obtain a read-back confirmation of the hold instruction either. The Mooney pilot was then told by the Approach controller to hold off to the north of the aerodrome, which he did with one orbit. It seemed to the Board that the two pilots then first flew into proximity without seeing each other at the overhead join position as the RF6 conducted its 180° turn onto south and the Mooney conducted its orbit. Neither pilot was passed Traffic Information on the other at this point, and the Board felt that this was contributory to the Airprox as it would have allowed, in the Board's opinion, directed lookout, earlier visual acquisition and appropriate sequencing before the pilots started their overhead joins.

In considering the controllers' actions, the Board felt that the Tower controller (who had not been given the RF6's FPS from the Approach controller) was then led to make a mistaken assessment of the aircrafts' sequencing because the Mooney pilot called first, and was allocated number 3 in the pattern, when in fact the RF6, unknown to the Tower controller, was probably inside and ahead of the Mooney. When the RF6 pilot then made his delayed call, the Tower controller, not unreasonably, instructed the RF6 pilot that he was number 5 in the pattern and to follow the Mooney. After some discussion, it was agreed that the lack of coordination between the Approach and Tower controllers as to the joining traffic had been causal to the Airprox. Although not related to the Airprox, members were unable to fathom how instructing a pilot at number 5 to follow traffic at number 3 would allow him to sequence behind number 4.

Turning to the pilots, the Board agreed that both had undertaken the overhead join as instructed, (although it was not possible to ascertain whether the RF6 pilot had heard the instruction to hold south of the aerodrome), and that they had probably been in proximity in the overhead. The RF6 pilot had then seen the Mooney on his right as they both headed south, and some members felt that he could reasonably have expected to sequence ahead of the Mooney in the left-hand join. However, because of the RF6 pilot's delayed 'deadside descending' call, when the Mooney pilot called 'deadside descending' first, the Tower controller sequenced the Mooney ahead as number 3. Members opined that the RF6 pilot was then in somewhat of a quandary in being sequenced behind the Mooney but flying ahead of it. Several members noted that the RF6 pilot then had a number of options available to resolve the predicament: he could have explained his position to ATC, that he was in front of the Mooney, and wished to sequence ahead; he could have returned to the overhead (also an excellent opportunity to demonstrate to his student the value of not continuing with a join when the traffic situation changed or was uncertain), or he could try to modify his pattern by widening it and building in extra separation with the Mooney. In the event, the RF6 pilot chose a modified pattern, and elected to extend upwind on the deadside and orbit left to sequence behind the Mooney, which he communicated to ATC. Although the RF6 pilot had the Mooney in sight for the majority of this, members felt that the Mooney pilot may not have assimilated the RF6 pilot's intentions, and had

perceived that the RF6 pilot had crossed in front of him and then in front of another preceding aircraft, which was not the RF6 pilot's or controllers' recollections.

Further discussion ensued with members questioning the relative responsibility of pilots and controllers in the regulated environment of an ATZ. Whilst it was appreciated that pilots held ultimate responsibility for collision avoidance within the ATZ, it was also strongly felt that the authority and privileges of the Air Traffic Controller qualification carried with it a responsibility to exercise pro-active control. This was especially so as the pilots were subject to an Aerodrome Control Service. That the controllers were unsighted to traffic descending on the deadside, due to it being directly above them, meant that their coordination and sequencing had to be of the highest standard. Similarly, pilots had to be aware of ATC limitations, and to allow for them in their threat and error management. Members agreed that the RF6 pilot had been visual with the Mooney during his deadside orbit and that the Mooney pilot had probably perceived a more alarming situation than was the case, but that safety margins had in fact not been much reduced because the RF6 pilot was visual with the Mooney as he manoeuvred to sequence behind, albeit from what was an unusual and unexpected pattern of flight. Taking all of this into account, the Board decided that the Airprox cause was best characterised as a conflict in the visual circuit.

Members noted that procedures and responsibilities in the visual circuit were defined only in a general sense, and that resolution of specific issues often relied on the application of effective airmanship, which could be considered as 'Acceptable Means of Compliance'. With this in mind, the Board noted that the CAA had stated that the proposed 'Skyway Code' would provide additional guidance and advice to pilots in situations such as this, and was to be developed by August 2016[4] - they looked forward to its distribution.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: A conflict in the visual circuit.

Contributory Factor(s): 1. Neither pilot was passed Traffic Information on the other.
2. The Tower and Approach controllers did not coordinate the joining traffic.

Degree of Risk: C.

[4] CAP1335, General Aviation ANO Review, dated 24th September 2015.