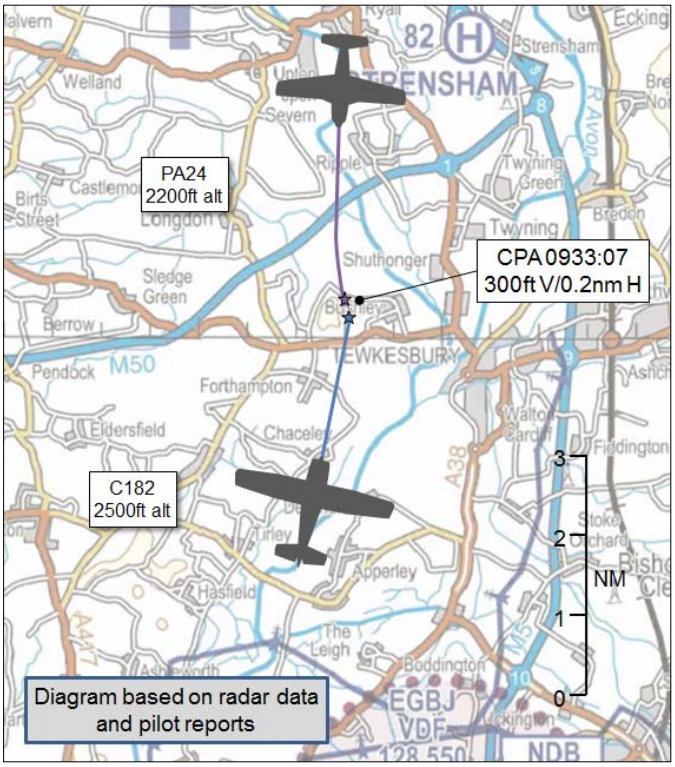
AIRPROX REPORT No 2016126

Date: 04 Jul 2016 Time: 0933Z Position: 5200N 00211W Location: 6nm N Gloucestershire Airport

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	C182	PA24
Operator	Civ Trg	Civ Pte
Airspace	Lon FIR	Lon FIR
Class	G	G
Rules	VFR	VFR
Service	Basic	Basic
Provider	Gloucester	Gloucester
Altitude/FL	2500ft	2200ft
Transponder	A, C, S	A, C
Reported		
Colours	White, Red	Blue, white
Lighting	NK	Beacon, Strobes, Landing
Conditions	VMC	VMC
Visibility	10km	10km
Altitude/FL	2600ft	2500ft
Altimeter	QNH (1019hPa)	QNH (1019hPa)
Heading	005°	170°
Speed	120kt	135kt
ACAS/TAS	Not fitted	Not fitted
Separation		
Reported	0ft V/70m H	50ft V/100m H
Recorded	300ft V/0.2nm H	



THE C182 PILOT reports that he was climbing away from Gloucestershire Airport, routing towards the M50/M5 junction. There were a few clouds ahead of him so he initially climbed to remain VMC, but then opted to descend because the cloud-base ahead was approximately 2500ft. Gloster App asked him to report his altitude, which was 2700ft at the time, and then gave Traffic Information on traffic 12 o'clock, similar level 1 mile away. He was not visual at the time, but about 5 seconds later the traffic appeared either from within, or from behind the cloud on a reciprocal, conflicting heading. He took immediate avoiding action to the right, and estimated the aircraft passed down his left-hand-side at a distance of about 200ft. The other aircraft did not appear to take any avoiding action. He was grateful for the Traffic Information from Gloster App at the time and did not report the Airprox on the frequency; however, on landing at his base, in consultation with his instructor and safety manager, he subsequently decided to report an Airprox.

He assessed the risk of collision as 'Medium'.

THE PA24 PILOT reports that he was on a route that would take him overhead Gloucestershire Airport, planned at 3000ft to keep clear of airspace earlier on in the flight. After leaving his previous frequency he listened to the Gloster ATIS, noted the details and then called Gloster Approach for a Basic Service at 3000ft on the Gloster QNH. The controller asked him to report 3nm to run before the Gloucester overhead but, in the Worcester area, he assessed the cloud-base and informed the controller that he would be descending to 2500ft to remain VMC. He was then asked to report in the overhead. The flight continued normally until Gloster called to say there was traffic in his 12 o'clock, reciprocal heading and similar altitude. The pilot and co-pilot looked out for the traffic and almost immediately saw the reported aircraft in the 10 o'clock position, slightly above and about 100m away. They saw the other aircraft take avoiding action, and judged there was no risk of collision.

He assessed the risk of collision as 'Low'.

THE GLOSTER APPROACH CONTROLLER reports that he was providing a Basic Service to the C182 heading northbound and the PA24 tracking south. Both pilots reported similar levels, and radar returns made him suspect that they were in a collision hazard situation, so he passed mutual Traffic Information. He later heard that the C182 would be filing an Airprox.

Factual Background

The weather at Gloucestershire Airport was recorded as follows:

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EGBJ 040920Z 24007KT 210V270 9999 FEW036 18/12 Q1019=
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Analysis and Investigation

CAA ATSI

The C182 had just completed a touch-and-go at Gloucestershire Airport and was returning to his base. At 0930:15 the pilot reported back on frequency with Gloster Approach and a Basic Service was agreed. The PA24 was tracking south in receipt of a Basic Service from Gloster Approach at 3200ft. At 0931:08, 11.5nm north of Gloucestershire Airport, advised that they were descending to 2500ft (Figure 1 – all levels shown are FL).

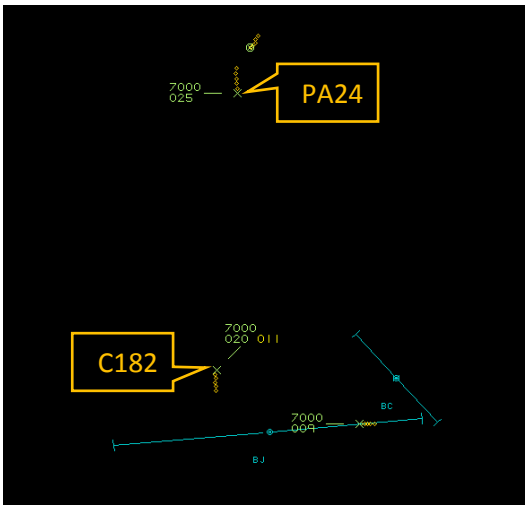


Figure 1 – Swanwick MRT – 0931:08

At 0932:41 (Figure 2), Gloster App asked the C182 pilot to report their level which was reported as 2700ft, and then passed Traffic Information to both pilots, advising that he believed them to be opposite direction, in each other's 12 o'clock position at 1nm. The controller ended that call and almost immediately, at 0933:00, the PA24 pilot reported visual with the C182 (Figure 3).

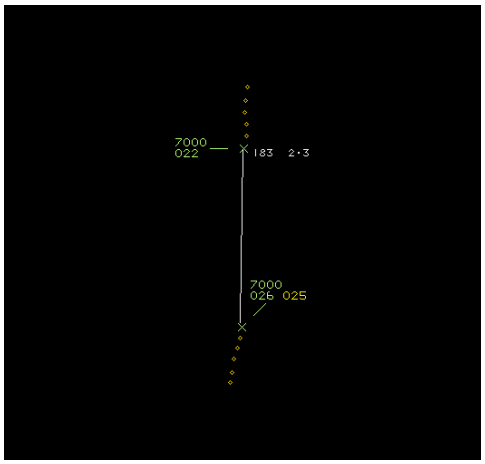


Figure 2 – Swanwick MRT – 0932:41

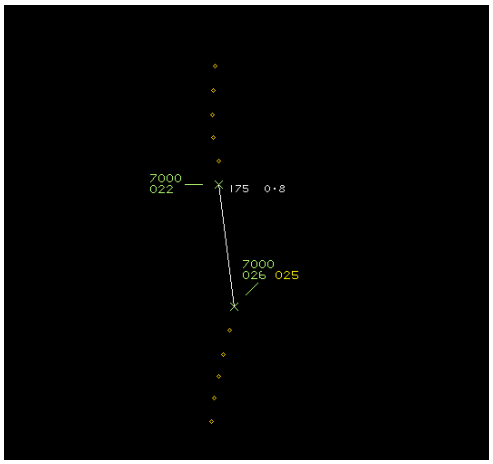


Figure 3 – Swanwick MRT – 0933:00

CPA was assessed, due to the sweep rate of the area radar, to have taken place between 0933:07 and 0933:10, with a minimum distance of 0.2nm laterally <300ft vertically (Figures 4 & 5).

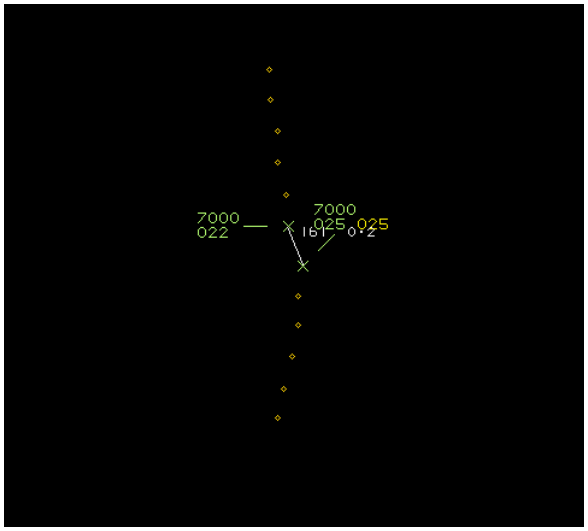


Figure 4 – Swanwick MRT – 0933:07

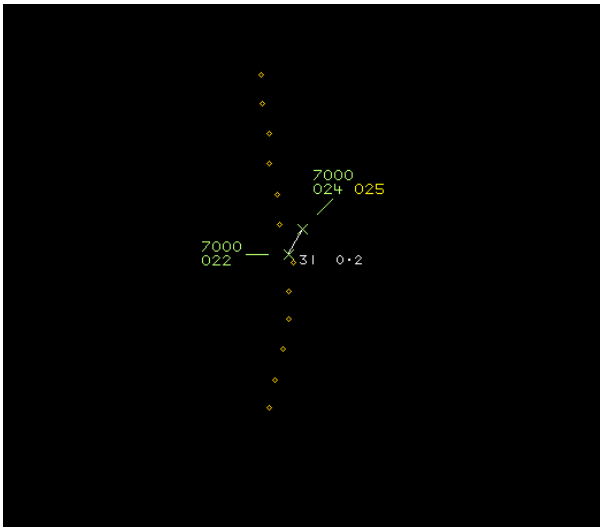


Figure 5 – Swanwick MRT – 0933:10

Although the controller was providing an approach service without the use of surveillance equipment, there is a radar display available to them for "situational awareness" within the Gloucestershire ATC VCR where they are located. Based on the evidence available to the controller, they believed there to be a risk of collision and so passed precise Traffic Information as if it were surveillance derived.

Both aircraft were operating VFR in Class G airspace, and as such the pilots were responsible for their own collision avoidance.

UKAB Secretariat

The C182 and PA24 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].

Comments

The C182's Operating Authority Safety Manager

The student took appropriate avoiding action on visual contact, and the action by the Gloucester controller to provide a warning call in the form of Traffic Information undoubtedly assisted in allowing the student to acquire visual contact. Despite not reporting the Airprox on frequency, Gloucester ATC were subsequently notified by telephone.

Summary

An Airprox was reported when a C182 and a PA24 flew into proximity at 0933 on Monday 4th July 2016. Both pilots were operating under VFR in VMC, and both were in receipt of a Basic Service from Gloster Approach.

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

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

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

The Board first looked at the actions of the C182 pilot. He was receiving a Basic Service from Gloster and, once given Traffic Information on the reciprocal traffic, was able to see it and take timely avoiding action. Likewise, the PA24 pilot was also given Traffic Information and was then able to see the C182, albeit he perceived no action was necessary because the C182 pilot had already turned away. That being said, and notwithstanding the timely calls by ATC, because they were both on the same frequency, members wondered whether, on hearing each other's radio calls, the pilots could have independently assimilated earlier that they were in conflict thereby building their own situational awareness. Noting that under a Basic Service the controller was not obliged to give Traffic Information, the Board highlighted that if he had not, then being in Class G airspace meant that see-and-avoid would have been the only mitigation against mid-air collision in this case. In this respect, it seemed likely that cloud between the two aircraft probably obscured their view, meaning that they saw each other later that would have been ideal; a timely reminder to avoid clouds by a sufficient margin to ensure that lookout is not compromised.

GA members noted that neither aircraft carried electronic conspicuity systems, and thought that this was a good example of the usefulness of such equipment had it been fitted given that it would have alerted the pilots to the presence of the other before they could see around the cloud. The Chairman noted that devices such as PilotAware (other systems are available), were rapidly coming onto the market at very affordable prices, were easy to install as stand-alone units, and offered real enhancements to situational awareness of other appropriately equipped aircraft; he urged all pilots to consider the feasibility of installing such units.

Turning to the Gloster controller, the Board was very aware that he was not obliged to keep a track of aircraft on a Basic Service and only had access to a radar feed for situational awareness purposes. They commended him for his pro-active controlling, and considered that his actions in warning the respective pilots had undoubtedly led to them seeing each other early enough to take action.

In looking at the performance of the relevant barriers to mid-air collisions, the Board thought that airspace design was not a factor, and that ATC threat awareness and management had worked well in this case. As discussed above, neither aircraft had any form of TAS, and so this barrier was not available. Ultimately, although both pilots did see each other in the end, the Board thought that the cloud had probably obscured their view, thus preventing an earlier sighting, and so they assessed see-and-avoid as only being partially effective.

Finally, in determining the cause, the Board thought that both pilots had probably seen the other aircraft as early as could be expected in the circumstances and so this incident was best described as a conflict in Class G, resolved by the C182 pilot. The risk was assessed as Category C, timely and effective action had been taken to ensure that there had been no risk of collision.

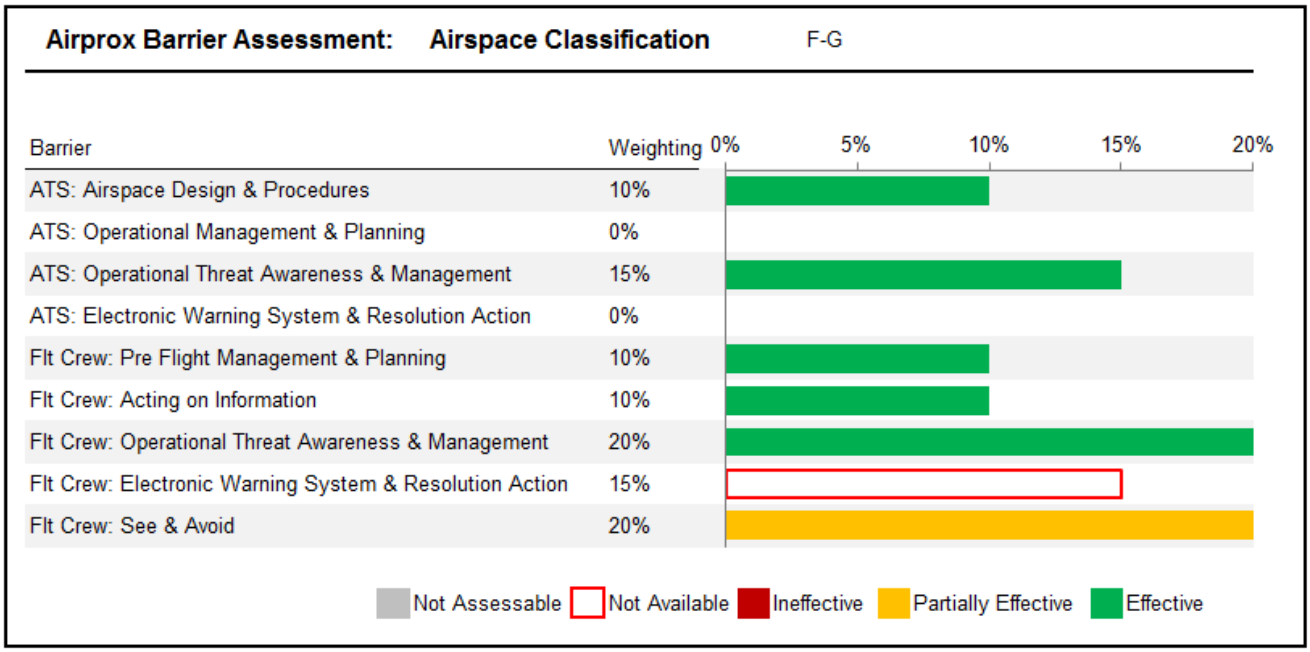
PART C: ASSESSMENT OF CAUSE AND RISK

Cause: A conflict in Class G, resolved by the C182 pilot.

Degree of Risk: C.

Barrier Assessment:

Modern safety management processes employ the concept of safety barriers that prevent contributory factors or human errors from developing into accidents. Based on work by EASA, CAA, MAA and UKAB, the following table depicts the barriers associated with preventing mid-air-collisions. The length of each bar represents the barrier's weighting or importance (out of a total of 100%) for the type of airspace in which the Airprox occurred (i.e. Controlled Airspace or Uncontrolled Airspace).[3] The colour of each bar represents the Board's assessment of the effectiveness of the associated barrier in this incident (either Fully Effective, Partially Effective, Ineffective, Not Available, or Not Assessable). The chart thus illustrates which barriers were effective and how important they were in contributing to collision avoidance in this incident.



[3] Barrier weighting is subjective and is based on the judgement of a subject matter expert panel of aviators and air traffic controllers who conducted a workshop for the UKAB and CAA on barrier weighting in each designation of airspace.