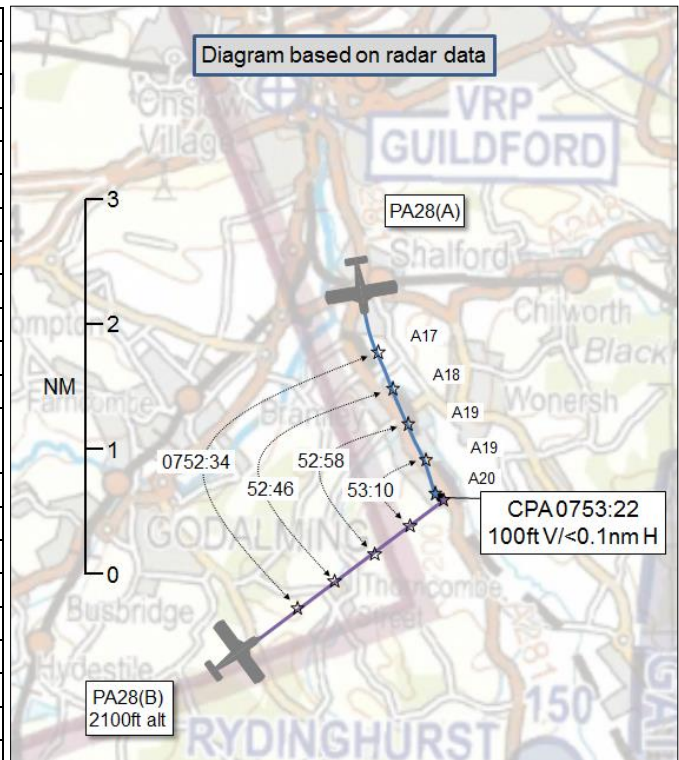


AIRPROX REPORT No 2017205

Date: 23 Aug 2017 Time: 0753Z Position: 5111N 00033W Location: near Godalming

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	PA28(A)	PA28(B)
Operator	Civ Pte	Civ Pte
Airspace	London FIR	London FIR
Class	G	G
Rules	IFR	IFR
Service	Basic	Basic
Provider	Farnborough	Farnborough
Altitude/FL	2000ft	2100ft
Transponder	A, C, S	A, C
Reported		
Colours	White/blue	White/red
Lighting	Strobes, nav, landing	Strobes, beacon, nav, landing
Conditions	IMC	IMC
Visibility	NK	20km
Altitude/FL	2000ft	2300ft
Altimeter	QNH (NK hPa)	NK (NK hPa)
Heading	'SW'	060°
Speed	80-90kt	100kt
ACAS/TAS	Not fitted	Not fitted
Separation		
Reported	0ft V/100-200m H	0ft V/250m H
Recorded	200ft V/<0.1nm (185m) H	



THE PA28(A) PILOT reports being in transit to Goodwood. The weather at his departure airfield was overcast with about 1000ft ceiling and, when he telephoned for PPR and for weather at Goodwood, he was told it was overcast at about 800 ft there with the wind almost calm. The PA28(A) pilot considered these conditions just acceptable for a transit to Goodwood, which he had done many times before. After a normal takeoff, he contacted Farnborough LARS to request a Traffic Service but was initially refused because he was still at that time too low. He climbed slowly and cautiously in complete IMC and repeated the request for Traffic Service. Just as he was emerging from the cloud, at about 2000ft, he received a 'traffic warning' from the LARS controller and a large, low-wing, Piper-type aircraft passed right to left, barely above his altitude, and he estimated 100m-200m in front. He was easily able to read the registration (but did not note it down). The pilot considered that a second or two difference could have led to a collision, and that the incident was all over before he had any possibility to react. He noted that the traffic warning was too late for him to take any action and that the other aircraft was very close to the cloud tops, giving him insufficient time to acquire traffic visually, even with the traffic warning. The PA28 pilot emphasised that the main point he wanted to make was that the other aircraft, flying only just above the cloud top, gave itself very little chance to see and avoid pop-up aircraft emerging from cloud. The pilot contacted Farnborough ATSU after landing and was informed that a Traffic Service could not be provided below 1500ft. He wondered if this restriction was wise, especially when close to Farnborough with its significant number of movements and in the area of a choke point at the end of the Biggin-Farnborough corridor between Heathrow and Gatwick CAS. The pilot also emphasised that he was not making a complaint against anyone but rather had submitted his report in the hope it may help other pilots avoid a similar situation.

He assessed the risk of collision as 'High'.

THE PA28(B) PILOT reports in transit to Rochester, IMC above cloud. He heard the pilot of PA28(A), climbing out and requesting a Traffic Service at 1300ft. The controller declined, stating that PA28(A) was too low. The PA28(A) pilot request a Traffic Service a little while later but the controller did not reply because he was busy talking to a 'light jet' inbound to Farnborough. The PA28(B) pilot then saw a white, G-registration Piper Warrior or Archer type aircraft, which suddenly appeared on his left, climbing out of the cloud-top, and which passed close behind. The PA28(B) pilot stated that he did not request a Traffic Service because he did not believe he would be given one at his position and altitude, and that it was early morning, with little traffic in the area. He also opined that even on a Basic Service the controller could have seen that the 2 aircraft's tracks were converging and that Traffic Information should have been passed to each of them.

He assessed the risk of collision as 'Medium'.

THE FARNBOROUGH TRAINEE CONTROLLER reports working Farnborough Approach under the instruction of an OJTI. He was working one IFR aircraft inbound to Fairoaks under a Traffic Service and had another LARS aircraft (squawking 0431) tracking from west to east under a Basic Service [PA28(B)]. He was called by a second LARS track which was climbing to altitude 1300ft and which requested a Traffic Service [PA28(A)]. He gave the pilot a squawk and the QNH, and instructed that it was a Basic Service to which the pilot again requested a Traffic Service. The controller informed the pilot it was a Basic Service only due to his altitude. The PA28(A) appeared to be tracking south, maintaining altitude 1300ft. Traffic Information was passed on PA28(A) to the IFR traffic inbound to Fairoaks and, once the IFR traffic was clear of PA28(A), it transferred to Fairoaks. Unaware to the controller, PA28(A), continuing south, had started a slow climb to altitude 2000ft. The controller was taking phone calls from LTC and Tower regarding traffic departing from Farnborough. Whilst this was happening, PA28(A) had climbed to altitude 2000ft and was confronted by the other LARS track, which was routing west to east at altitude 2100ft and less than 0.5nm ahead of PA28(A). The PA28(A) pilot again requested a Traffic Service and the controller responded by saying he was identified and called the traffic in his 12 o'clock, 0.5nm, similar altitude. The pilot commented that the other aircraft had 'just passed in front of his nose'.

THE FARNBOROUGH OJTI reports that Farnborough Approach Radar was bandboxed with LARS West during a training session. He did do not recall the time of the event, but did recall the PA28(A) pilot calling and requesting a Traffic Service. The trainee correctly noted that a Radar service for an aircraft reported at that level was not permitted, and issued a Basic Service. Other activities were being carried out at the time, including airways leavers inbound to Fairoaks, and a short while later he noticed that PA28(A) had climbed to 1900ft and had just crossed paths with another aircraft that was also in receipt of a Basic Service from Farnborough. The PA28(A) pilot did not advise that he was intending to climb, and therefore the OJTI and trainee controllers had no reason to vary the service issued. The OJTI did not detect a risk of collision between the two Basic Service aircraft prior to this due to other activities on the sector.

Factual Background

The weather at Farnborough was recorded as follows:

METAR EGLF 230750Z 31002KT 4900 BR BKN008 17/17 Q1012=

Analysis and Investigation

CAA ATSI

The PA28(B) pilot had contacted Farnborough LARS for a Basic Service at 0744:00, and had advised the Farnborough controller of his intention to remain to the north of Gatwick's controlled airspace. At 0747:02 the PA28(A) pilot made his first call to the Farnborough LARS controller, but the transmissions were broken and the controller advised that the transmissions were unreadable. At 0749:00, the controller called the PA28(A) pilot back and two-way communication was established. The pilot requested a Traffic Service and the controller advised that he was identified,

but, due to his level (reported altitude 1300ft), it would be a Basic Service. This was acknowledged by the PA28(A) pilot at 0749:35, Figure 1 (note that the PA28(A) transponder code shows 0430, cycling through to 0432).

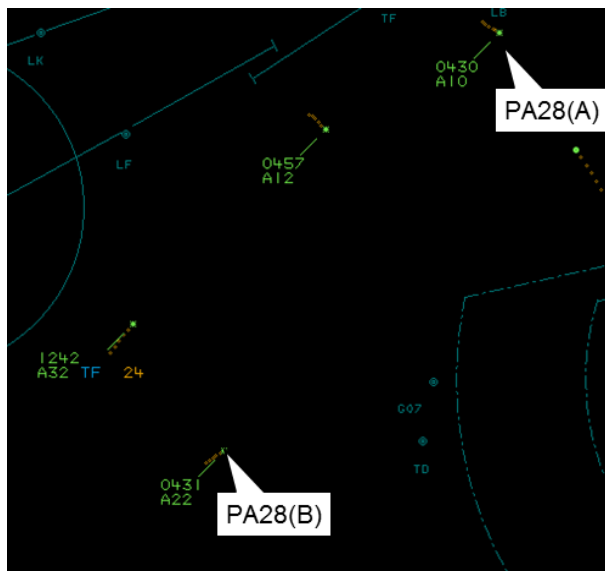


Figure 1 – 0749:35

At 0751:46 the PA28(A) indicates on radar replay passing 1500ft in a climb (Figures 2 & 3).

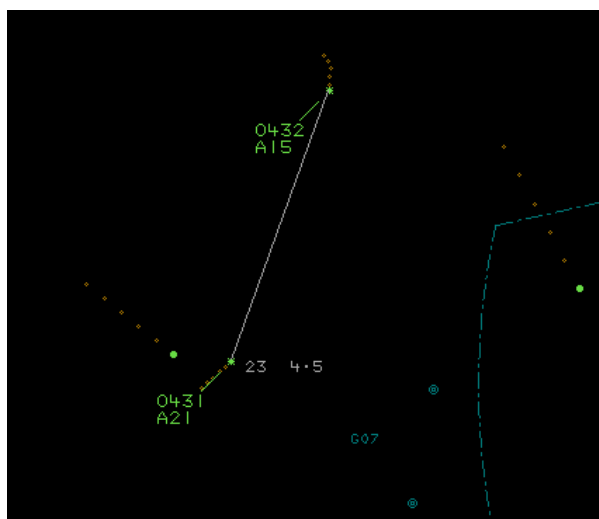


Figure 2 – 0751:46

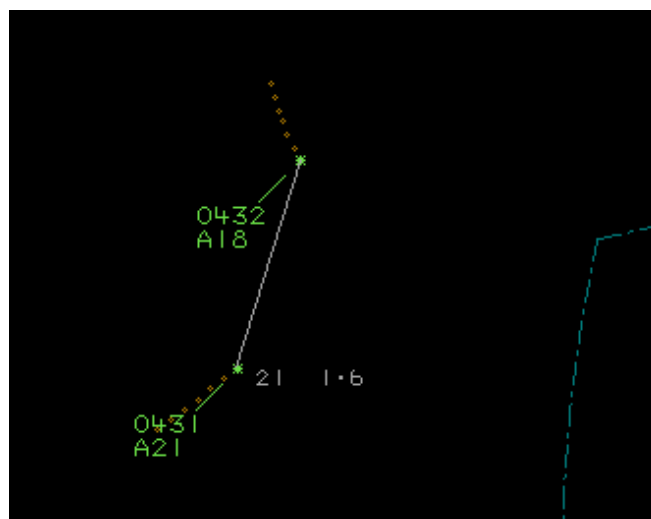


Figure 3 – 0752:46

At 0753:11, the PA28(A) pilot reported at 2000ft and requested a Traffic Service (Figure 4). The controller acknowledged this and at 0753:20, (Figure 5), passed Traffic Information to him on the PA28(B), advising him that it was in the 12 o'clock at 0.5nm passing right-left and indicating 2100ft. The pilot acknowledged this, replying that the other aircraft had just passed directly in front of him.

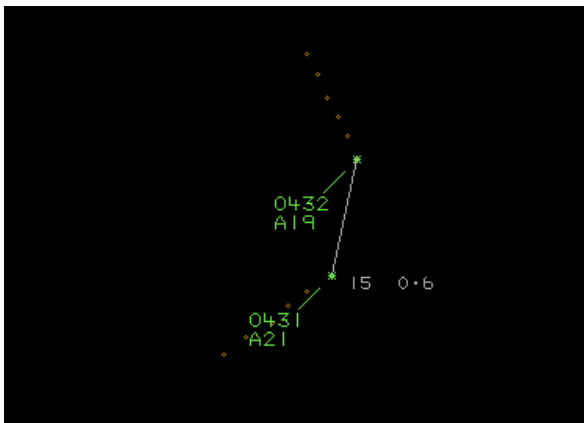


Figure 4 – 0753:11

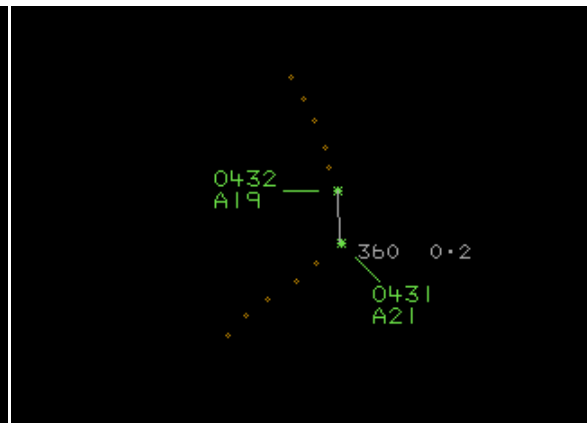


Figure 5 – 0753:20

CPA took place at 0753:22, with the aircraft separated by <0.1nm laterally and by 100ft vertically (Figure 6).

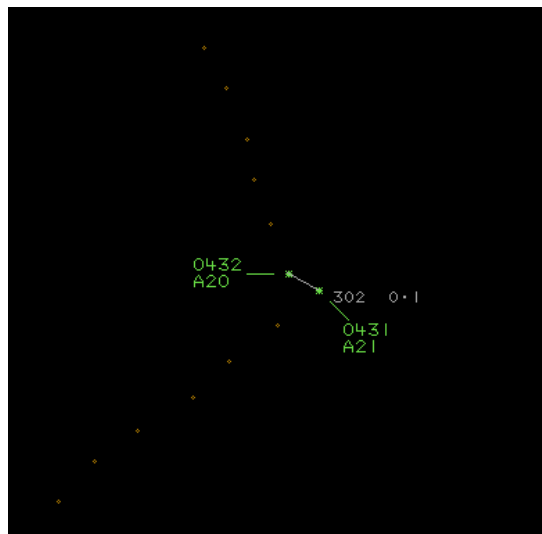


Figure 6 - 0753:22

The Farnborough controller was a high-hours trainee, under the supervision of an OJTI. Traffic levels were considered to be light, with 3 aircraft on frequency and a pending departure. He reported taking a phone call regarding the departing aircraft during the period the PA28(A) was climbing, and it wasn't until attention was drawn by the PA28(A) pilot's altitude report and further re-request for a Traffic Service, that he saw the confliction with the PA28(B), and passed Traffic Information immediately. The OJTI report confirmed that he had not been aware that the PA28(A) had climbed and had not seen the confliction with PA28(B) due to being involved with other tasking. ATSI contacted the ATC unit management, and the existence of a minimum level for a Traffic Service was discussed. Surveillance-based ATC service availability is determined by local terrain, and both radar and R/T coverage. Farnborough MATS Part 2 advises controllers that the minimum level at or above which a Traffic Service may be provided is 1500ft. This restriction is not notified elsewhere. The unit felt that had the PA28(A) pilot advised that he intended to climb, the controller would have monitored the flight more closely, with a view to agreeing to a Traffic Service when the aircraft passed 1500ft. Because only a Basic Service was agreed, the controller and OJTI shifted their focus away from that aircraft. CAP774 states:

'... the provider of a Basic Service is not required to monitor the flight'.¹

'Pilots should be aware that Basic Service might not be appropriate for flight in IMC or where lookout is constrained by other factors, when other ATS are available'.²

¹ CAP774 UK Flight Information Services Chapter 2. Basic Service. Para 2.1

² CAP774 UK Flight Information Services Chapter 2. Basic Service. Para 2.3

The P28(A) pilot did not ask, and the controller did not advise, at what level Farnborough would be able to provide a Traffic Service. Had he requested a Traffic Service when passing 1500ft, then the conflict with the PA28(B) may have been detected and Traffic Information passed earlier by the controller. The decision by the PA28(A) pilot to climb in IMC, and the reported proximity to the cloud tops of the PA28(B), meant that both pilots' ability to see and avoid each other had been severely restricted. Because both aircraft were operating in Class G airspace, the pilots were responsible for their own collision avoidance.

UKAB Secretariat

Both PA28 pilots shared an equal responsibility for collision avoidance and not to operate in such proximity to other aircraft as to create a collision hazard³. If the incident geometry is considered as converging then the PA28(A) pilot was required to give way to the PA28(B)⁴.

NATS Unit Investigation Report

PA28(A) departed [departure airfield] climbing to 1300ft and requested TS. This was denied correctly, based on altitude, and there was no information given to indicate climbing. PA28(A) later climbed, becoming a conflict with PA28(B). Both aircraft on a BS at time of Airprox, whilst the controller busy with other tasks.

Summary

An Airprox was reported when two PA28s flew into proximity at 0753 on Wednesday 23rd August 2017. Both pilots were operating under IFR in IMC, the PA28(A) pilot having just agreed a Traffic Service and the PA28(B) pilot in receipt of a Basic Service, both from Farnborough LARS West.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

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

Members first discussed the pilots' actions. PA28(A) pilot had elected to fly to Goodwood in poor weather conditions and had sensibly requested a surveillance-based FIS, a Traffic Service. The Farnborough LARS trainee controller then correctly informed PA28(A) pilot that he could not agree to a Traffic Service due to the PA28(A) pilot's altitude of 1300ft. The PA28(A) pilot then climbed 'slowly and cautiously' through cloud (a precaution which members agreed was ineffective), until being confronted by the passing PA28(B) very shortly after having eventually agreed a Traffic Service, breaking cloud, and being passed Traffic Information.

The Board questioned why the Farnborough controller could not apply a Traffic Service at 1300ft and were informed by a NATS advisor that varying terrain and radar efficiency at low-levels around the airfield meant that surveillance contacts could not be reliably received below certain altitudes. The NATS advisor went on to say that the application of a surveillance-based service to traffic transiting areas with varying minimum altitudes across the LARS sector was not feasible due to likely controller workload under those conditions. Consequently, an altitude of 1500ft had been agreed as the minimum altitude at which a surveillance-based service could be provided by Farnborough LARS West, which was notified in the Farnborough MATS Part 2. At this point, members expressed surprise that the controller did not inform the PA28(A) pilot that a Traffic Service *could* be agreed should he climb above altitude 1500ft. It was accepted that the controller did not have to inform the PA28(A) pilot of this limitation but members opined that with the pilot having requested a Traffic Service it seemed logical and reasonable to inform him of such. Members also felt that the OJTI could have prompted the trainee controller to do so, should it not have occurred to the trainee. Members also

³ SERA.3205 Proximity.

⁴ SERA.3210 Right-of-way (c)(2) Converging.

questioned where pilots could ascertain the Farnborough minimum surveillance service altitude, given that the Farnborough MATS Part 2 was not publicly available, and were informed that the information was not disseminated outside the ATM environment. The Board considered that pilots should be informed of limitations such as this, and resolved to recommend that 'Farnborough ATSU publish in the UK AIP the minimum altitude at which a surveillance-based service will be provided'.

For his part, the PA28(B) pilot was transiting above cloud and had made the judgement that a non-surveillance-based service would suffice due to his being unlikely to obtain a Traffic Service and the paucity of traffic at that time of the morning. Members acknowledged the pilot's reasoning but commented on two aspects of the incident. Firstly, it does not normally inconvenience a pilot to request a Traffic Service, which may well be available, and secondly, although recognising that he was somewhat constrained by controlled airspace above, by transiting close to the top of the cloud layer the PA28(B) pilot had denied himself adequate time to see-and-avoid aircraft emerging from the cloud tops. Noting also the PA28(B) pilot's comment that 'even on a Basic Service the controller could have seen that the 2 aircraft's tracks were converging and that Traffic Information should have been passed to each of them', members wondered whether GA pilots in general understood the limitations of a Basic Service and that, although there was a duty of care on a controller to pass Traffic Information should they detect converging tracks, this was very seldom possible due to controllers being otherwise occupied or aircraft not showing a unique squawk code. Additionally, the definition of Basic Service⁵ includes the following statement:

'Basic Service relies on the pilot avoiding other traffic, unaided by controllers/ FISOs. It is essential that a pilot receiving this ATS remains alert to the fact that, unlike a Traffic Service and a Deconfliction Service, the provider of a Basic Service is not required to monitor the flight.'

It was unfortunate that the Farnborough controllers had been occupied during the PA28(A) pilot's slow climb, but this reiterated the point that it was for pilots to request the appropriate service, not for controllers to second-guess a pilot's intentions or needs.

The Board also discussed the potential barrier of Short Term Conflict Alert (STCA), a radar console generated indication of converging traffic, which was not in use at the time. Some members felt that this would have alerted the controllers to the aircrafts' converging tracks and that Traffic Information could then usefully have been passed. ATC members pointed out that the volume and separation of traffic in the Class G airspace below the London TMA was such that STCA would be alerting non-stop. Options did exist to reduce the separation range at which STCA provided alerts but this would also reduce warning time. The net result being either saturation of warnings, with associated controller desensitisation, or late warnings which provided little time for Traffic Information to be passed. Members also pointed out that such an arrangement would result in a 'service' which was not a Basic Service but more like radar control, which was not part of the purpose or intent of Class G airspace. It was also suggested that this event highlighted perfectly the utility of on-board electronic conspicuity and that the information provided by such systems could have afforded both pilots the situational awareness to take timely and effective avoiding action.

Turning to the cause, some members felt that by denying themselves information visually or from ATC, both PA28 pilots had essentially flown into conflict with the other. Other members disagreed and commented that the 2 pilots had not been aware of each other and had therefore not knowingly flown into conflict. After further discussion, it was decided that the cause had simply been a conflict in Class G, but that both pilots electing to operate in IMC without a surveillance-based FIS was a contributory factor. Turning to the risk, some members thought that although safety had evidently been much reduced, the vertical separation was such that this was not an incident where it had been at a bare minimum (i.e. this was a Category B incident). Others disagreed and opined that in this case a collision had been avoided by providence alone (Category A) and that the outcome could have been catastrophic under only a very slightly different set of circumstances. After some discussion, the latter view prevailed.

⁵ CAP774 (UK Flight Information Services), Chapter 2, paragraph 2.1.

PART C: ASSESSMENT OF CAUSE, RISK AND SAFETY BARRIERS

Cause: A conflict in Class G.

Contributory Factor: Both pilots elected to operate in IMC without a surveillance-based FIS.

Degree of Risk: A.

Recommendation: Farnborough ATSU publish in the UK AIP the minimum altitude at which a surveillance-based service will be provided.

Safety Barrier Assessment⁶

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

ANSP:

Situational Awareness and Action were assessed as **partially effective** because the Farnborough controller was only able to pass Traffic Information at a late stage.

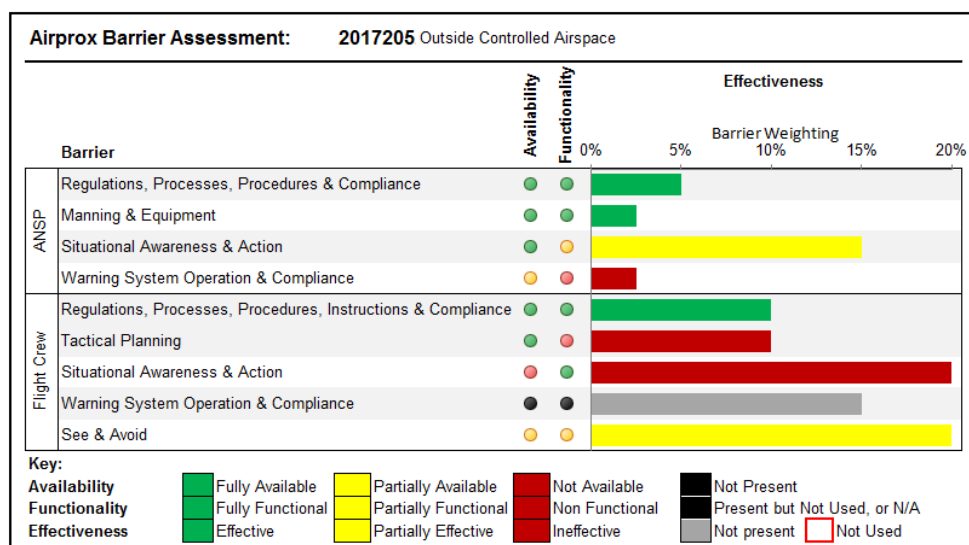
Warning System Operation and Compliance were assessed as **ineffective** because STCA was configured not to activate, in accordance with normal practice.

Flight Crew:

Tactical Planning was assessed as **ineffective** because the PA28(A) pilot elected to climb through cloud without a surveillance based service, and the PA28(B) pilot flew sufficiently close to the cloud tops that there was little time to see-and-avoid traffic emerging from cloud.

Situational Awareness and Action were assessed as **ineffective** because neither pilot was aware of the converging track of the other.

See-and-Avoid was assessed as **partially effective** because the PA28(A) pilot was in cloud until shortly before CPA, thereby reducing the time available for him to detect the other traffic and give way, and the PA28(B) pilot was close to the cloud tops, thereby additionally reducing the time available for either pilot to see-and-avoid.



⁶ The UK Airprox Board scheme for assessing the Availability, Functionality and Effectiveness of safety barriers can be found on the [UKAB Website](#).