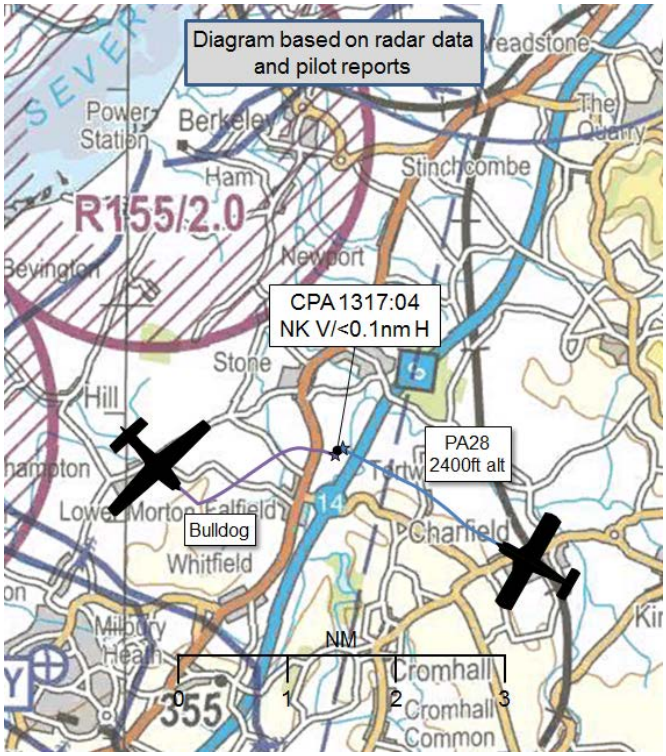
AIRPROX REPORT No 2016215

Date: 12 Oct 2016 Time: 1317Z Position: 5138N 00227W Location: 4nm NNE Thornbury VRP

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	PA28	Bulldog
Operator	Civ Club	Civ Pte
Airspace	London FIR	London FIR
Class	G	G
Rules	VFR	VFR
Service	Basic	Listening
Provider	Bristol	Kemble
Altitude/FL	2400ft	NK
Transponder	On/C	On/C, S
Reported		
Colours	Red, White	White, Red
Lighting	Beacon	Strobe, Nav
Conditions	VMC	NK
Visibility	>10km	>10km
Altitude/FL	2500ft	NK
Altimeter	RPS (1016hPa)	
Heading	320°	
Speed	90kt	
ACAS/TAS	FLARM	Not fitted
Alert	None	N/A
Separation		
Reported	0ft V/100m H	200ft V/0.25nm H
Recorded	NK V/<0.1nm H	



THE PA28 PILOT reports that he looked up from his map and saw an aircraft in his 10 o'clock position, very close and at the same level. Before he could take control and carry out avoiding action, the aircraft had passed down his left side and then was gone.

He assessed the risk of collision as 'High'.

THE BULLDOG PILOT reports that he saw the PA28 at a distance of 2nm in excellent visibility. The PA28 was travelling in the opposite direction, slightly low, well displaced. In his opinion there was no risk of collision, the PA28 passed down his left side as he homed into Kemble ATZ. Neither aircraft altered their flight path. He stated that he maintained his course as no alteration of his flight path was deemed necessary as there was absolutely no risk of collision. He is an experienced ex-RAF pilot.

UKAB note: After a subsequent telephone conversation with the Bulldog pilot it was ascertained that the PA28 the Bulldog pilot saw was probably later in the sortie. In the sighting the Bulldog pilot described he said that he was flying straight and level for quite a while when he saw a PA28 in the opposite direction. This did not correlate with the radar replay, and so the Bulldog pilot and UKAB inspector agreed that he did not see the PA28 in the Airprox incident.

Factual Background

The weather at Bristol was recorded as follows:

```
METAR EGGD 121320Z AUTO 05013KT 9999 BKN024 13/08 Q1020=
```

Analysis and Investigation

CAA ATSI

At 1309:57 the PA28 called Bristol Radar and requested a Basic Service. The PA28 reported at Chippenham routing to Monmouth and returning. A Basic Service was agreed at 1310:30.

No further calls were received from the PA28 until 1317:24 when the pilot reported the Airprox. At the time the pilot made the Airprox report, he requested the controller note the position. However, the controller had not identified the aircraft (there was no requirement to under a Basic Service) and the pilot then had to establish his position and pass this on to the controller. CPA had occurred at 1317:04. The pilot was able to identify the type of the other aircraft as a Bulldog.

The Bulldog had been in communication with Kemble Information but was not under any service. Although it was possible to identify the Bulldog using Mode S data, it was not possible to positively identify the PA28. However, Figure 1 (1317:04) is consistent with the report from the pilot of the PA28. Height information was only being transmitted by the PA28 (2400ft as it passed the PA28). In his written report the pilot of the Bulldog reported sighting the PA28 as he "homed into Kemble ATZ".

Under a Basic Service, the controller is not required to identify an aircraft nor monitor its progress. As both aircraft were operating in Class G airspace both pilots shared an equal responsibility for collision avoidance. Although the controller was under no obligation to do so, under the circumstances following the pilot report of the Airprox, and considering the apparent low workload, it would have been pertinent to identify the aircraft, which would have assisted the pilot and the Airprox investigation process. ATSI also note that no report was received from Bristol ATC.

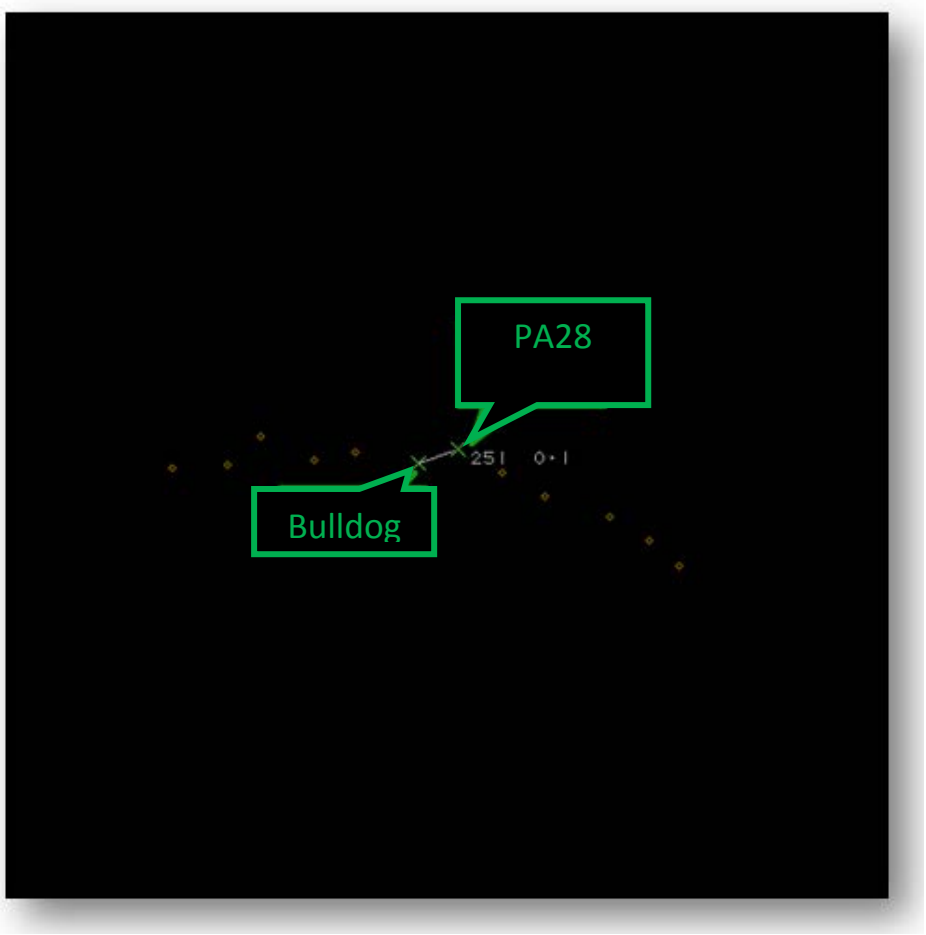


Figure 1 -1317:04

UKAB Secretariat

The PA28 and Bulldog 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]. If the incident geometry is considered as converging then the Bulldog pilot was required to give way to the PA28[3].

The Bulldog was initially tracking NE, a track that, if continued, would have crossed the PA28s nose at approximately 1nm (Figure 2). The Bulldog pilot then turns onto a SE heading and, at 0.5nm, is opposite direction to the PA28 (Figure 3) and passes down the left hand side of the PA28. The PA28 does not alter course at any time.

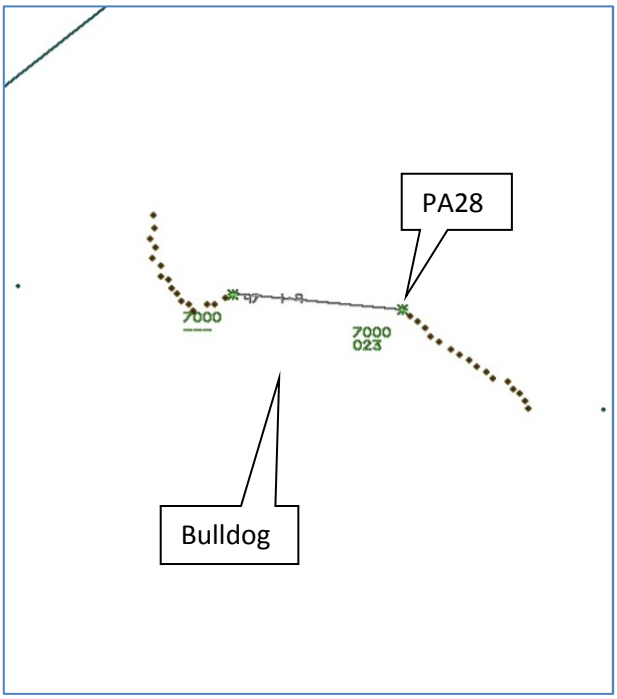


Figure 2

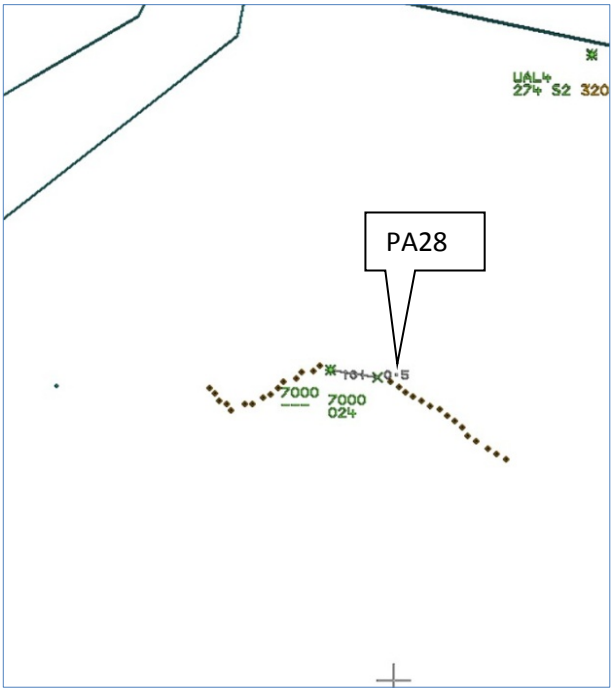


Figure 3

Summary

An Airprox was reported when a PA28 and a Bulldog flew into proximity at 1317 on Wednesday 12th October 2016. Both pilots were operating under VFR in VMC, the PA28 pilot in receipt of a Basic Service from Bristol and the Bulldog pilot listening out on the Kemble frequency.

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 and reports from the appropriate ATC authorities.

Given the disparity in the 2 reports, the Board began by discussing the reported separations and were informed that the PA28 pilot's reported separation appeared to more accurately correlate with the radar replay separation. The Board then looked at the actions of the PA28 pilot and noted that he was head-down in the cockpit just prior to the incident, and only saw the Bulldog when he looked up, as the Bulldog passed him. The Board agreed that this again highlighted the importance of prioritisation of attention between flying and navigating, and, although time clearly had to be spent in the latter, attention should only be focused in the cockpit for short periods of time, no more than 3-5 seconds or so at a time if possible.

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

The Board then discussed the actions of the Bulldog pilot and agreed that he had not seen the Airprox PA28 and that the Bulldog pilot's report related to a different part of his sortie. Members commented that this highlighted the difficulties associated with sighting opposite direction traffic, especially in the 12 o'clock, and was a timely reminder of the importance of a robust lookout scan. Notwithstanding, the Board were mindful that the Bulldog pilot had stated both he and his passenger were both fully aware of the importance of a robust lookout, indeed the Bulldog pilot stated in the telephone call that because he flew regularly in the local area, he was always careful to maintain a good lookout. A short discussion on the merits of electronic conspicuity ensued; although the PA28 pilot had FLARM fitted, this was not compatible with any of the Bulldog's equipment.

The Board then looked at the safety barriers that were relevant to this Airprox and decided that the following were the key factors:

- **Flight Crew Situational Awareness** was considered **ineffective** because neither pilot was aware of the other.

- **Onboard Warning/Collision Avoidance System** was considered **ineffective** because although the PA28 was fitted with FLARM, there was no alert triggered by the presence of the Bulldog because it did not have a compatible system fitted.

- **See and Avoid** was considered **ineffective** because the Bulldog pilot did not see the PA28 and the PA28 pilot only saw the Bulldog as the aircraft passed; therefore, neither pilot saw the other aircraft in time to carry out any avoiding action.

The Board then considered the cause and risk of the incident and members quickly agreed that the Bulldog pilot had not seen the PA28 and that the PA28 pilot had seen the Bulldog very late, as the aircraft passed; therefore the cause was assessed as effectively a non-sighting by the PA28 pilot and a non-sighting by the Bulldog pilot. Turning to the risk, members agreed that luck had played a major part in the incident; therefore the Board assessed the risk as Category A due to the proximity of both aircraft as they passed head-on.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: Effectively a non-sighting by the PA28 pilot and a non-sighting by the Bulldog pilot.

Degree of Risk: A.

Barrier Assessment[4]:

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).[5] 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, or Unassessable/Absent). The chart thus illustrates which barriers were effective and how important they were in contributing to collision avoidance in this incident.

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

[5] 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.

Airprox Barrier Assessment: 2016215 Outside Controlled Airspace