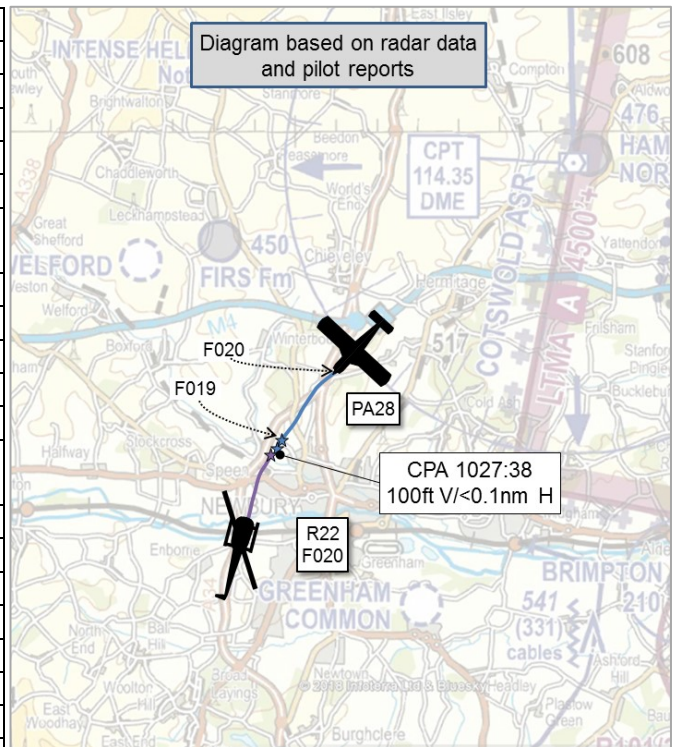


AIRPROX REPORT No 2018077

Date: 08 May 2018 Time: 1027Z Position: 5124N 00120W Location: 1nm NW Newbury

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	PA28	R22
Operator	Civ FW	Civ Helo
Airspace	London FIR	London FIR
Class	G	G
Rules	VFR	VFR
Service	Establishing [Traffic]	Listening Out
Provider	Boscombe Down	Farnborough
Altitude/FL	FL019	FL020
Transponder	A, C	A, C
Reported		
Colours	Red, White	Blue
Lighting	Anti-Col, Strobe, Nav	Strobe, Nav
Conditions	VMC	VMC
Visibility	Not reported	Not reported
Altitude/FL	1900	1400-1600ft
Altimeter	QNH (1009hPa)	QNH
Heading	210°	005°
Speed	100kt	70kt
ACAS/TAS	Not fitted	Not fitted
Separation		
Reported	25ft V/40m H	50ft V/30m H
Recorded	100ft V/<0.1nm H	



THE PA28 PILOT reports that he was crossing the M4 and it is normal practice for the Oxford controller to initiate a transfer to another frequency at that point; on this occasion, he chose to go to Boscombe Down LARS. This coincided with his tuning point at Chieveley. While on the Oxford frequency he was informed of traffic about 4 times but none, as he recalled, related to this helicopter. After identifying his turning point, he made a turn to the right of 10° and tuned to the Boscombe Down frequency. He exchanged information with the Boscombe controller and he recalls that he was in the process of changing squawk when, to his surprise, he saw the helicopter on an opposite heading to his right. He reports that he was flying into the sun and the visibility was hazy.

He assessed the risk of collision as ‘High’.

THE R22 PILOT reports that he was carrying out a local sight-seeing flight. He flew to the right of the A34 from Whitchurch, past Highclere, towards Chieveley Services and then back to Blackbushe. He saw the PA28 pass him on a parallel course, just below and to the right as he approached Chieveley. It was a clear day with a slight haze. He assumed they were both following closing headings. He was monitoring Farnborough but hadn’t heard another aircraft in the area. He was following a line feature (the A34) on his left, as is the normal convention. He was very familiar with the area and regularly flies both fixed and rotary wing aircraft in the vicinity. With hindsight, he believes he could have chosen a less congested turning point because CPT VOR is in the immediate area and there is a high volume of traffic. He doesn’t believe either he or the PA28 pilot did anything wrong; with a closing speed of about 165kts on a direct heading it would be difficult to see the other aircraft. He commented that fortunately it wasn’t more serious.

He assessed the risk of collision as ‘Medium’.

THE BOSCOMBE CONTROLLER reports that the PA28 called LARS for a Traffic Service around the CPT area, NE of Boscombe. The pilot was asked to Squawk 2652 and, after identifying the PA28, he spoke to another aircraft. The PA28 pilot came back saying that a helicopter had passed quite close to them and then asked if he had seen it. He informed them that a primary contact had merged after he observed it come from the 6 o'clock of the PA28's primary contact. At this point the PA28 had up to 3 SSR contact stems within a 5nm radius at various levels which needed to be rotated but at the time he was dealing with more than one TS.

He perceived the severity of the incident as 'Medium'.

THE BOSCOMBE SUPERVISOR reports that he was in the Approach Room but did not witness the incident because he was supporting the Radar Approach Controller and answering multiple telephone calls regarding a trial scheduled for the following day. The LARS controller was relieved at 1030Z and informed him of the incident. He asked whether the traffic had been called to the aircraft, but it had not. He asked if the aircraft's Traffic Information had been reduced due to High Traffic Intensity, but it had not. Whilst the Aircraft did not call an Airprox, he requested that the controller submit a DASOR because, in the LARS controller's opinion, an Airprox had occurred.

Factual Background

The weather at Benson was recorded as follows:

METAR EGUB 080950Z 22007KT CAVOK 22/14 Q1009 BLU NOSIG

Analysis and Investigation

CAA ATSI

The PA28 had been in receipt of a Traffic Service from Oxford Radar until the aircraft was 23nm south of Oxford. The Oxford controller advised the pilot that they would lose radar/RT contact with them shortly and he was given the choice of Farnborough LARS West or Boscombe Down LARS. The pilot advised that they would contact Boscombe Down LARS and left the Oxford frequency at 1025:40 (Figure 1).

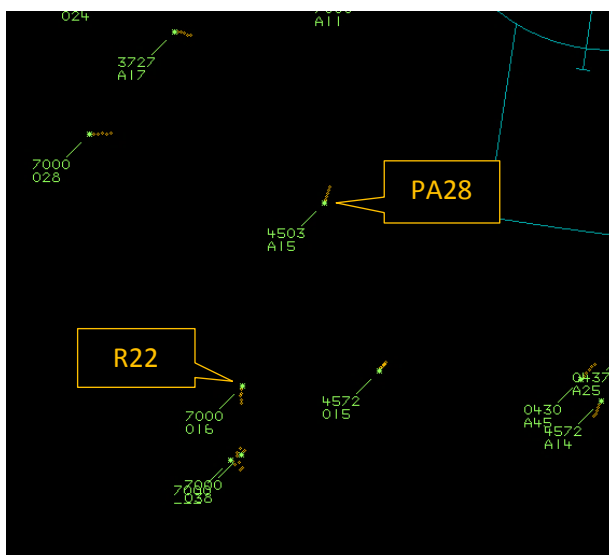


Figure 1: 1025:40 (aircraft 5.6nm apart)

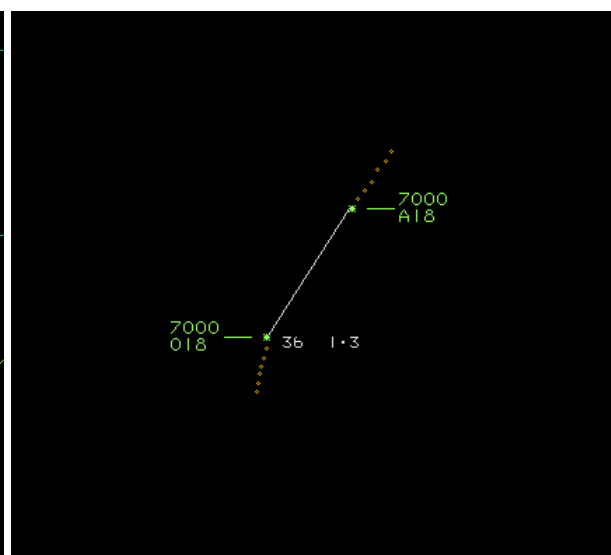


Figure 2: 1027:10

Contrary to the PA28 pilot's report, they had not been passed any traffic information on any other aircraft during their flight by the Oxford controller. The report from the R22 pilot indicated that although they were monitoring the Farnborough LARS frequency, they did not call or request an air traffic service from Farnborough, nor hear any calls from aircraft in the same area as themselves.

Military ATM

Figures 4-6 show the positions of the PA28 and R22 at relevant times in the lead up to and during the Airprox. The screen shots are taken from a replay using the NATS Radars, which are not utilised by RAF Boscombe Down, therefore is not necessarily representative of the picture available to the controller.

The PA28 contacted Boscombe Zone at 1026:21 requesting a Traffic Service (TS). Due to other radio transmissions, the PA28 was not identified and placed under a TS until 1min later. Almost immediately, the PA28 pilot reported an Airprox with a helicopter that was later identified as the R22. Figure 4, timed at 1026:21, shows the point at which the PA28 free-called Boscombe Zone requesting a TS (PA28 circled below in yellow). The conflicting R22 traffic was 12 o'clock at approximately 2nm indicating 100ft below (R22 circled in orange).

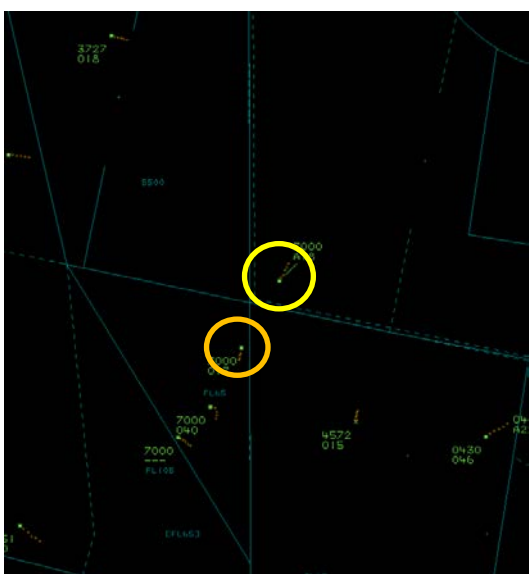


Figure 4: 1026:21

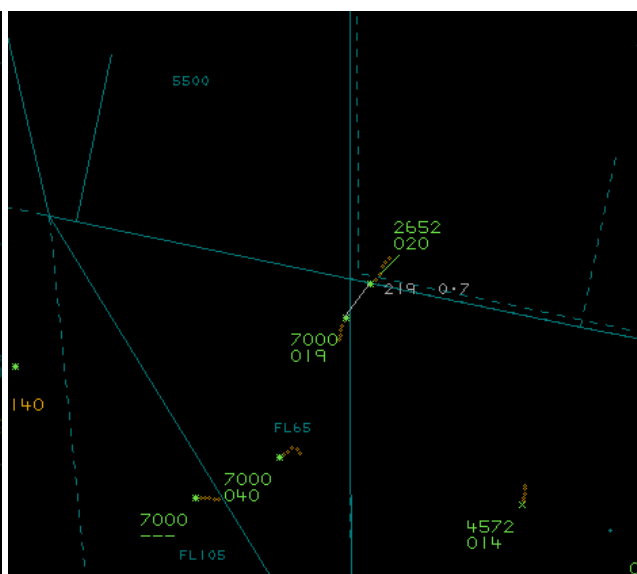


Figure 5: 1027:21

Figure 5, timed at 1027:21, was the time the aircraft was placed under a TS (Sqk 2652). The conflicting aircraft was 0.7nm away indicating 100ft below. The controller passed the RPS and requested the transit altitude of the PA28, no traffic information was passed.

Figure 6 shows the closest point of approach (CPA) as <math><0.1\text{nm}</math> lateral and 200ft vertical [UKAB Note: ATSI and UKAB utilised a different radar and identified the vertical separation as 100ft].

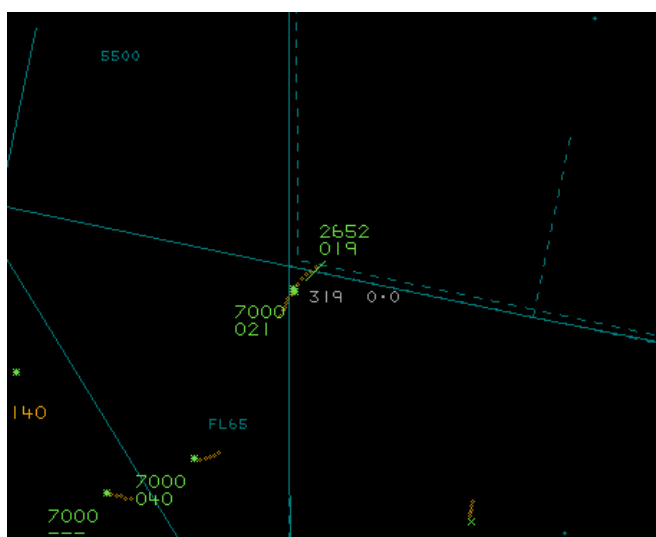


Figure 6

The controller reported their workload as medium-to-low although there were 3 aircraft on frequency with a wide geographical split between them (c30nm). The time between the agreement of a TS and the Airprox being reported was about 8secs. The Unit investigation found that the SSR label of the PA28 was 'ahead' of the primary radar return and was therefore obscuring the primary radar return of the R22. Basic ATC training, at the School of Air Operations Control, emphasises the need for controllers to manipulate their SSR labels to ensure that SSR labels are 'pulled' behind aircraft rather than be 'pushed' in front of them so that controllers can spot potential conflicting aircraft on the projected track of their traffic. Had the controller been doing so, it is possible that the confliction may have been identified prior to the Airprox.

UKAB Secretariat

The PA28 and R22 pilots shared an equal responsibility for collision avoidance and not to operate in such proximity to other aircraft as to create a collision hazard². If the incident geometry is considered as head-on or nearly so then both pilots were required to turn to the right³.

Summary

An Airprox was reported when a PA28 and a R22 flew into proximity near Chieveley at 1027hrs on Tuesday 8th May 2018. Both pilots were operating under VFR in VMC, the PA28 pilot establishing a Traffic Service from Boscombe LARS and the R22 pilot listening out on Farnborough LARS 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, reports from the air traffic controllers involved and reports from the appropriate ATC and operating authorities.

The Board began by looking first at the actions of the PA28 pilot. They noted that he had been flying somewhat into sun in hazy conditions and some members wondered to what extent that might have degraded his lookout. Members also noted that he was likely to have been looking inside the cockpit as he changed frequency and squawk whilst establishing a service with Boscombe Down, and this would also have detracted from his available time to look out at that moment. Given that the aircraft were flying in opposite directions, the window of opportunity to detect and avoid the small R22 would be minimal, and any distraction at the wrong time would compromise this. As it was, the PA28 pilot only saw the R22 as it was passing him to his right; it was simply unfortunate that the controller had not been able to provide any traffic information given the fact that he had only just made contact with the controller at the time.

The Board then looked at the actions of the R22 pilot. They noted that he had highlighted in his report that the CPT VOR was a busy turning point for GA traffic. Agreeing with his assessment, members commented that avoiding such popular points was good practice if feasible but, in reality, probably more realistic was to use such knowledge as a cue to redoubling lookout and scan efforts in the knowledge that other aircraft were highly likely to be in the area. The Board noted that although he was listening out on the Farnborough frequency to increase his situational awareness this was not infallible as, in this case, other aircraft may not be operating on the same frequency. GA members opined that there was much to be gained from requesting a service rather than simply listening out, even if the controller might not be able to provide an unrestricted service at all times. Similar to the PA28 pilot, the R22 pilot only saw the PA28 as it passed him just below and to the right.

Common to both pilots, the Board highlighted that collision warning systems were becoming increasingly affordable and that some systems could now be purchased for as little as £200 or so. Given that both aircraft were squawking, even if only one of them had been equipped with a system then valuable situational awareness would have been available to one of the pilots at least in order to

² SERA.3205 Proximity.

³ SERA.3210 Right-of-way (c)(1) Approaching head-on.

take timely and effective avoiding action without relying on ATC traffic information or see-and-avoid in hazy conditions.

The Board then turned to the actions of the controllers. The Oxford controller had not passed TI to the PA28 pilot during his time on frequency, nor had TI been passed when the PA28 left the Oxford frequency. Controller members opined that they thought it would have been prudent for the controller to have passed TI on the R22 as the PA28 left frequency due to the similar height and opposite direction track. That being said, they acknowledged that the Oxford controller was likely focusing his attention on a different part of his screen as he marshalled the other aircraft for IFR approaches. For his part, controller members debated at length whether the Boscombe controller had had the opportunity to call the R22 to the PA28 pilot on initial contact even though the PA28 pilot would not have formally been under a service at the time. They recognised that it was a finely balanced debate but, overall, they felt that in the minute or so between the PA28 pilot's initial call and CPA, there had been time to for the controller to provide some traffic information, if only in generic terms.

The Board then looked at the cause and risk of the Airprox. They quickly agreed that neither pilot had seen the other until after CPA and so the cause was effectively a non-sighting by both pilots. Turning to the risk, the aircraft had flown within 100ft vertically of each other, head-on, and without either pilot seeing the other aircraft. As a result, the Board agreed that there had been a serious risk of collision that had only been prevented by providence; accordingly, they assessed the risk as a Category A.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: Effectively a non-sighting by both pilots.

Degree of Risk: A.

Safety Barrier Assessment⁴

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

ANSP:

Regulations, Processes, Procedures and Compliance were assessed as **partially effective** because the Boscombe controller did not rotate the aircraft labels on his radar screen to declutter the picture and, potentially, identify any possible conflicting aircraft.

Situational Awareness and Action were assessed as **ineffective** because the Boscombe controller did not identify the conflict and therefore did not pass Traffic Information to resolve it. Also, the Oxford controller did not pass Traffic Information to the PA28 pilot prior to him leaving the Oxford frequency.

Flight Crew:

Tactical Planning was assessed as **partially effective** because both pilots could have planned less congested routes rather than near to a known busy turning point (CPT). Also, the R22 pilot could have requested an ATS from Farnborough rather than just listening out on their frequency.

Situational Awareness and Action were assessed as **ineffective** because neither pilot was aware of the other due to being on different frequencies.

Warning System Operation and Compliance was assessed as **not present**; had it been fitted to one or both aircraft, valuable situational awareness would have been available to the pilots.

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

See and Avoid were assessed as **ineffective** because neither pilot saw the other in time to take effective avoiding action.

