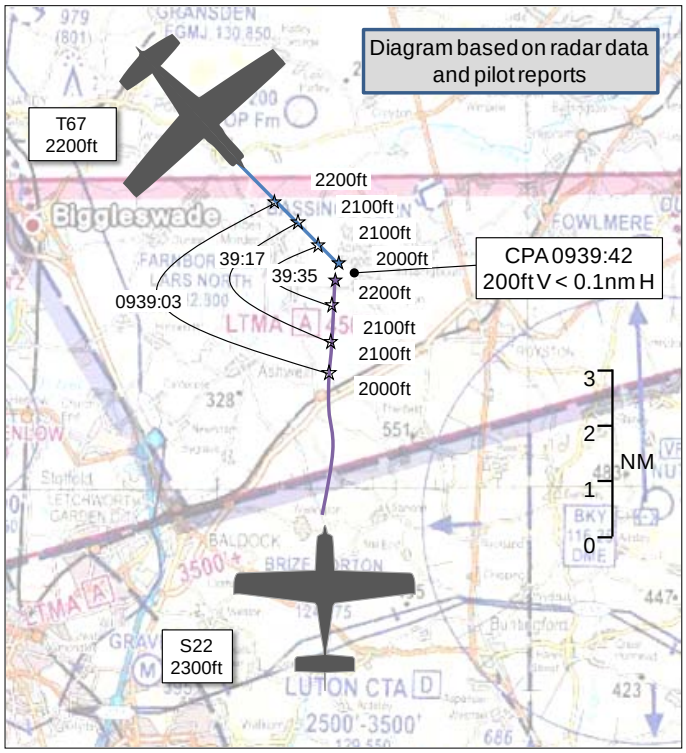
AIRPROX REPORT No 2013159

Date/Time: 13 Nov 2013 09:39

Position: 5204N 00042W (7.5nm W Duxford)

Airspace: Lon Fir (*Class*: G)

	Aircraft 1	*Aircraft 2*
Type:	Slingsby T67M	SR22
Operator:	Civ Pte	Civ Pte
Alt/FL:	2200 QNH (1033hPa)	2300 QNH (1035 hPa)
Conditions:	VMC	VMC
Visibility:	<10K	2km
Reported Separation:	50ft V/50ft H	200ft V/20m H
Recorded Separation:	200ft V/<0.1nm H	



PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

THE T67 PILOT reports flying a yellow aircraft with all lights on, and with transponder Mode 3A and C selected. He was flying VMC, at 2200ft, routing through the Stansted/Luton gap, and was receiving a Basic Service from Farnborough. He had just tuned in his next VOR frequency, so had been distracted inside the cockpit. When he looked up, he saw an aircraft head-on at the same height. He took immediate avoiding action by rolling left and descending, about 3 seconds later the other aircraft passed down his right hand side, slightly above. He reported the incident to the Farnborough controller and heard the other aircraft transmit that he had seen them but had a TCAS failure. The T67 pilot acknowledged that it was a late sighting on his part but thought that it was "alarming" that the other pilot was relying on TCAS to avoid traffic in this busy piece of airspace.

He assessed the risk of collision as 'High'.

THE SR22 PILOT reports flying a white aircraft with strobes and navigation lights illuminated, transponder on, and with Modes 3A, C and S selected. Although TCAS was fitted, it was inoperable on this leg of his journey. He was VMC, transiting at 2000ft, and receiving a Traffic Service from Farnborough, which he believed had been limited due to his range and height. He had heard lots of traffic on the radio and had decided to climb to 3000ft to avoid it. When passing 2300ft he saw the T67 in his 10 o'clock 200ft below. He reported that it was too close to avoid and it passed below him. He heard the other aircraft report the Airprox on the frequency and so he advised the controller that he had had a TCAS failure. He considered that the T67 was in a blind spot behind a roof strut, and that seat-height adjustments made it awkward to see round it.

He assessed the risk of collision as 'Medium'.

THE FARNBOROUGH CONTROLLER reports providing a Basic Service to the T67 pilot, he issued a squawk, gave the QNH and then turned his attention to other traffic that he was controlling in the Westcott area, which was very busy at the time. At 0940, the T67 reported an Airprox with an SR22 transiting in the opposite direction. He took the details, and the SR22 stated on frequency that he had seen the other traffic but had a TCAS failure.

Factual Background

The weathers at Farnborough and Stansted were reported as follows:

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METAR EGLF 130920Z 12002KT CAVOK 03/03 Q1035
METAR EGSS 130920Z 23004KT CAVOK 04/03 Q1034
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Analysis and Investigation

CAA ATSI

CAA ATSI had access to the RTF and area radar recording, the written report from the controller and ATSU, together with reports from the T67 pilot and SR22 pilot.

The T67 was operating on a VFR flight and was in receipt of a Basic Service from Farnborough LARS(N). The SR22 was operating on a VFR flight, and was in receipt of a Traffic Service from Farnborough LARS(N) on the same frequency. The Farnborough LARS(N) controller's workload was assessed as moderate. At the time of the Airprox there were multiple contacts in the Westcott area and the controller was providing a service to a number of aircraft including three in the area of Westcott NDB (WCO). One of these, with an 'Exam' Callsign, was in receipt of a Traffic Service with reduced traffic information due to controller workload and intensity of traffic with possible late warnings.

At 0928:46 the SR22 contacted Farnborough LARS(N). The controller gave a squawk and the QNH and, at 0929:30, identified the SR22 and agreed a Traffic Service. During the next few minutes the number of RTF calls increased. At 0935:33 the T67 contacted Farnborough LARS(N) and requested a Basic Service, the controller again passed a squawk and agreed a Basic Service. At this point the horizontal distance between the two aircraft was 13.5nm on reciprocal tracks.

Prior to the Airprox the controller was focussed on the WCO area and was passing traffic information to aircraft in that area, culminating in a warning to all traffic in the area. At 0939:12 he transmitted, *"Stations be advised it's multiple aircraft at all altitudes in the area of Westcott."* (see Figure 1). A number of aircraft then transmit acknowledgements to the controller. At this point the T67 and SR22 were closing at a horizontal distance of 2.5nm and vertical distance of 100ft - Figure 1.

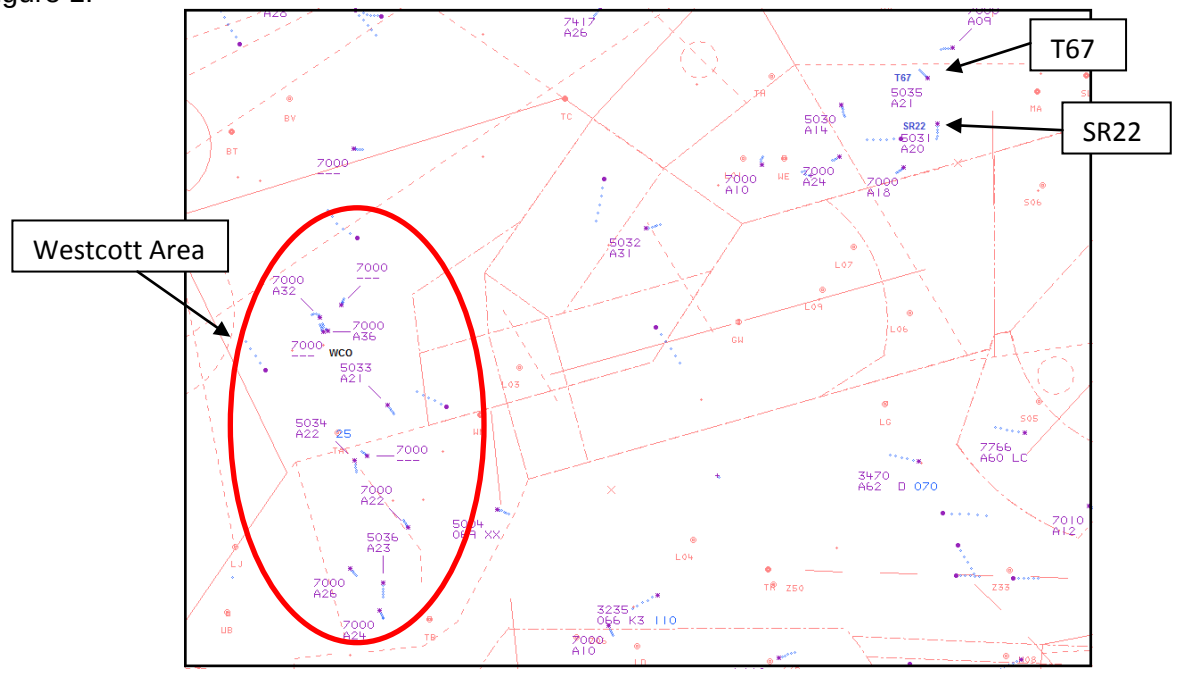

Figure 1 – Swanwick MRT at 0939:12

At 0939:20 both aircraft were indicating an altitude of 2100ft at a range of 2nm (Figure 2).

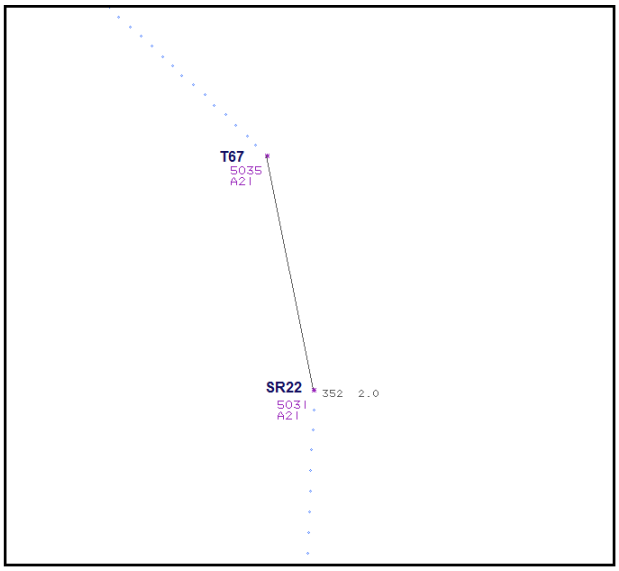

Figure 2 – Swanwick MRT at 0939:20

The two aircraft continued to converge at the same level until, at 0939:43, the SR22 was indicating 100ft above the T67 at a range of 0.4nm (Figure 3).

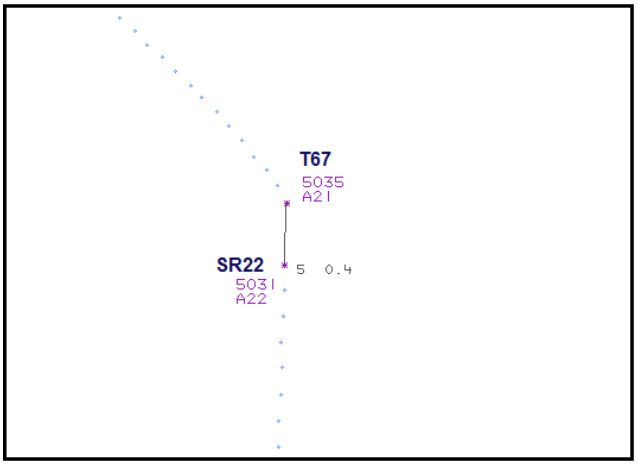

Figure 3 – Swanwick MRT at 0939:43

The next MRT update showed the horizontal distance as 0.1nm (Figure 4).

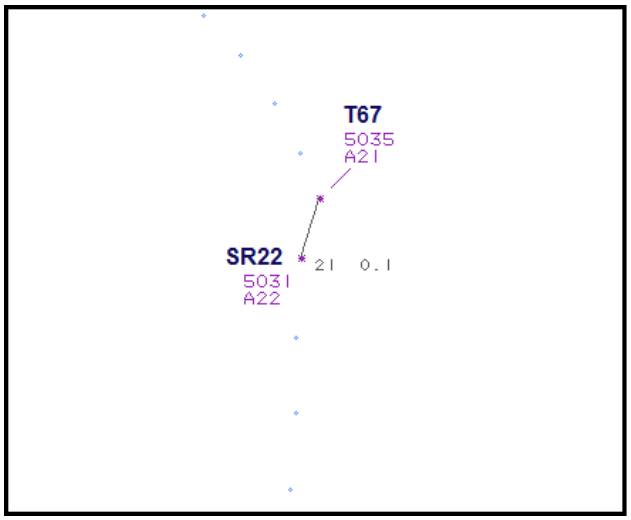

Figure 4 – Swanwick MRT at 0939:47

The CPA is estimated to have occurred at 0939:49 between MRT updates, when the T67 passed less than 0.1nm east of the SR22. At the same time the following RTF exchange occurred:

T67 "*(T67)c/s I'd like to file an Airmiss please"*
ATC *"Sorry which aircraft was that"*
T67 *"(T67)c/s I'd like to file an Airmiss this location"*
ATC *"(T67)c/s er roger details please"*
T67 *"Er aircraft was a Cirrus er head on opposite direction [0940:10] er we took avoiding action"*
SR22 [0940:20] *"Farnborough (SR22)c/s Cirrus er I did actually see him but I saw him quite late"*
ATC *"(SR22)c/s roger dealing with other Traffic Service in the Westcott area".*

At 0942:20 the SR22 reached the edge of radar coverage and was instructed to squawk 7000 and continue enroute. The pilot acknowledged and advised, *"…and for reference with that er be noted that we did have er traffic TCAS failure in the climb at the time".* The controller responded, *"Understood you had a TCAS failure"*, which was affirmed by the pilot. The SR22 pilot reported changing to Waddington.

At 0945:55 the T67 pilot was asked to confirm that the Airprox occurred in the vicinity of Royston and the T67 pilot replied, *"Er Airprox was er eighteen D north of Brookmans Park on the zero zero zero radial".*

The Air Traffic Service Unit (ATSU) investigation report indicated that at the time of the Airprox the controller was focussed on other aircraft in receipt of a Traffic Service in the vicinity of WCO where the density of traffic was high. In order to manage workload in periods of high workload and as a result of this Airprox, the ATSU made a recommendation to:

'remind controllers to reduce services to aircraft under a Traffic Service or Deconfliction Service appropriately, such as if workload increases or is expected to be high. This would be beneficial to both controllers, to ease workload when traffic levels increase unexpectedly, and also inform aircraft crews of possible limitations to a controllers ability to spot and pass traffic information'.

After a Traffic Service had been agreed with the SR22 pilot, the controller's attention was focussed on monitoring the multiple contacts in the WCO area and the passing of traffic information. The controller provided a general warning to aircraft in the WCO area and reduced the level of service to an aircraft in receipt of a Traffic Service. This tunnelled the controller's focus to the extent that the controller was not aware of the potential conflict between the SR22 and T67 in a different area of his display (see Figure 1). The SR22 was therefore not provided with traffic information, which would have assisted the pilot in his collision avoidance responsibilities. CAP774, Flight Information Services, Chapter 3, paragraph 3.5 states:

'The controller shall pass traffic information on relevant traffic and shall update the traffic information if it continues to constitute a definite hazard, or if requested by the pilot. However, high controller workload and RTF loading may reduce the ability of the controller to pass traffic information and the timeliness of such information.
Controllers shall aim to pass information on relevant traffic before the conflicting aircraft is within 5nm, in order to give the pilot sufficient time to meet his collision avoidance responsibilities and to allow for an update in traffic information if considered necessary.'

The T67 was in receipt of a Basic Service. There was no requirement for the Farnborough controller to monitor the T67 flight; although if the controller considered that there was a definite risk of collision a warning may have been issued to the pilot. As the controller's workload increased he informed an aircraft in the WCO area of a reduction in traffic information due to controller workload and traffic density. However the controller was not able to monitor the SR22 flight or provide appropriate traffic information and was not able to advise the SR22 of any reduction or change in the level of service. CAP774, Chapter 1, paragraph 1.11, states:

'There may be circumstances that prevent controllers from passing timely traffic information and/or deconfliction advice, e.g. high workload, areas of high traffic density, unknown aircraft conducting high energy manoeuvres, or when traffic is not displayed to the controller or is obscured by surveillance clutter. Controllers shall inform the pilot of reductions in traffic information along with the reason and the probable duration; however, it may not always be possible to provide these warnings in a timely fashion.

In high workload situations, which may not always be apparent from RTF loading, it may not be possible for controllers to always provide timely traffic information and/or deconfliction advice. High workload situations may not necessarily be linked to high traffic density. High traffic density can cause difficulty interpreting ATS surveillance system data and may affect RTF loading or controller workload to the extent that the controller is unable to pass timely traffic information and/or deconfliction advice on all traffic.'

CAP774 Chapter 1, paragraph1.2 states:

'Within Class F and G airspace, regardless of the ATS being provided, pilots are ultimately responsible for collision avoidance and terrain clearance, and they should consider ATS provision to be constrained by the unpredictable nature of this environment.'

UKAB Secretariat

Both pilots were equally responsible for collision avoidance and for not flying into such proximity as to create a danger of collision[1]. If the geometry is considered to be 'head-on' then both pilots were required to alter their course to the right[2], if the geometry is considered to be converging then the T67 pilot was required to give way to the SR22[3].

Summary

An Airprox was reported between a T67 and a SR22 on 13 November 2013 at 0939 approximately 7nm west of Duxford. Both aircraft were flying VMC in Class G airspace. The T67 pilot reports flying at 2200ft, and receiving a Basic Service from Farnborough, and the SR22 was passing 2300ft and receiving a Traffic Service from Farnborough. The Airprox occurred when, due to the controller's increased workload, he was unable to pass traffic information to assist the SR22 pilot in receipt of a Traffic Service, or inform the pilot of a reduced level of service.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available included 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.

In their discussion of this incident, the Board first considered the actions of the T67 pilot. Arguably, he may have been better served by having requested a Traffic Service rather than a Basic Service but, practically, given the workload on the Farnborough Controller at the time, it was unlikely that he would have been able to agree to provide such a service. Although the T67 pilot had seen the SR22 at a late stage, the Board considered that it was his subsequent avoiding action that had prevented this incident being even closer than it was.

In looking at the actions of the SR22 pilot, the Board wondered how much reliance he normally placed on TCAS to provide an element of traffic warning and avoidance. Although TCAS was a useful aid in supplementing 'see-and-avoid' in Class G, the Board commented on the need to maintain a good lookout at all times, and to pro-actively scan around cockpit obstructions in order to avoid blind spots. Given that the SR22 pilot's TCAS was inoperable for that leg at least, this should have prompted the SR22 pilot to be even more aware of the need for good look-out, and in particular

[1] Rules of the Air 2007 (as amended), Rule 8 (Avoiding aerial collisions).
[2] ibid., Rule 10 (Approaching head-on).
[3] Ibid., Rule 9 (Converging)

to make up for the blind spot he reported behind his roof strut. Notwithstanding, the Board noted that he had realised that there was a lot of traffic with which to conflict in the area, and they commended his decision to climb to 3000ft to try to avoid the bulk of the other traffic. Furthermore, the fact that he had opted for a Traffic Service was a sound decision which, under normal circumstances, would have helped to mitigate the TCAS failure.

It was noted from the data provided that the two pilots appeared to have been using a different QNH in the same area. Subsequent investigation by the Secretariat confirmed that, although the T67 pilot reported that he had 1033hPa set, the RT transcript reveals that he read back 1035hPa to the Farnborough controller when the Basic Service was established, and that his report's statement was probably just a recall error. This discrepancy was not thought to have a bearing on the incident.

When discussing the actions of the Farnborough LARS(N) controller, the Board accepted that he had had a high workload which, when compounded with the large geographical split of the traffic that he was providing radar services to, made for difficult circumstances. Whilst recognising that on occasions traffic loading can suddenly rapidly increase, the Board felt that the controller should have pro-actively informed the SR22 pilot that he was limiting his Traffic Service because this action may have prompted the pilot to re-double his look-out efforts. Some members of the Board felt that this could have been a contributory factor in the Airprox because the SR22 pilot may have been relying on ATC for SA. That being said, despite the fact that the controller did not tell him formally, the Board opined that the SR22 appeared to have assimilated the fact that the airspace was busy, and that the controller was probably not able to provide the agreed Traffic Service, and so had likely anticipated that he would only receive a reduced service, if any at all. Within its discussions the Board noted that the geographical area for Farnborough LARS was large and resides within a busy and complex area of airspace; the Board recalled from other Airprox in this area that Farnborough LARS controller workload was often cited as a limitation in achieving more than just a Basic Service. It was mooted that a further split of the LARS areas to allow for more controller positions might therefore be beneficial. The CAA advisor commented that a review into the provision of LARS throughout the UK was currently being conducted; the Board resolved to recommend that the CAA considers further sub-dividing the Farnborough LARS airspace within this review.

Finally, in turning to the cause and risk of this Airprox, the Board unanimously agreed that the cause was a late sighting by the T67 pilot and, effectively, a non-sighting by the SR22 pilot. The degree of risk was assessed as B, safety margins had been much reduced below the norm.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: A late sighting by the T67 pilot and, effectively, a non-sighting by the SR22 pilot.

Degree of Risk: B

ERC Score[4]: 20

Recommendation: As a part of the LARS review, the CAA considers further subdividing the Farnborough LARS airspace.

[4] Although the Event Risk Classification (ERC) trial had been formally terminated for future development at the time of the Board, for data continuity and consistency purposes, Director UKAB and the UKAB Secretariat provided a shadow assessment of ERC.