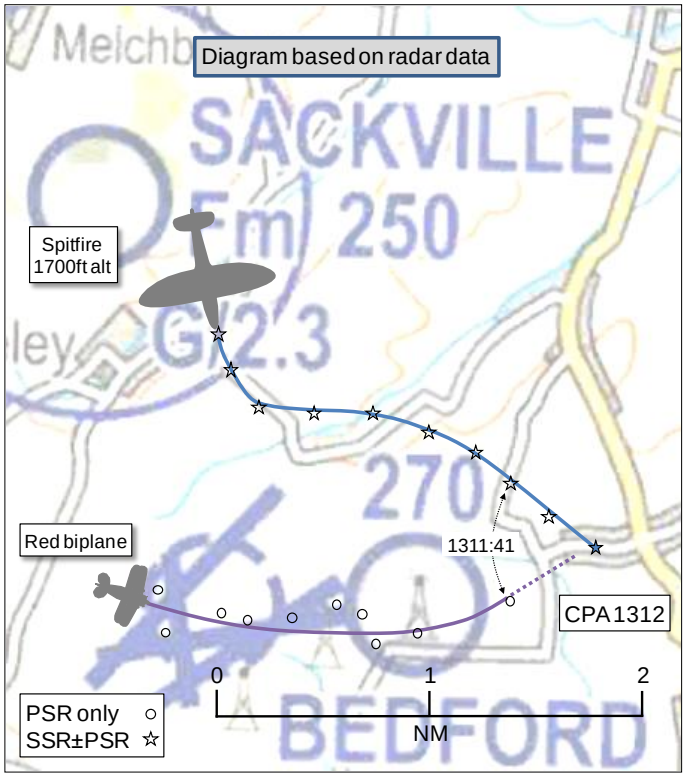
AIRPROX REPORT No 2013127

Date/Time: 7 Sep 2013 1312Z (Saturday)

Position: 5213N 00023W (2.5nm E Bedford Airfield)

Airspace: London FIR (*Class*: G)

	Reporting Ac	*Reported Ac*
Type:	Spitfire	Light Aircraft
Operator:	HQ Air (Ops)	NK
Alt/FL:	1700ft QNH (1014hPa)	NK
Conditions:	VMC	NK
Visibility:	30km	NK
Reported Separation:	250ft V/0.25nm H	NK
Recorded Separation:	NK	



PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

THE SPITFIRE PILOT reports transiting to a display. The blue-coloured aircraft had the SSR transponder on with Modes A, C and S selected; the aircraft was not fitted with a TAS or ACAS, and the lighting state was not reported. The pilot was operating under VFR in VMC, reportedly in receipt of a Traffic Service from Farnborough LARS(N). He had completed a flypast at a glider site and was transiting to another display site when, heading 130° at 180kt and passing about 1500ft in the climb, he saw a red biplane in his 4 o'clock position, 2-300ft below, at a range of ¼nm. The pilot stated that the aircraft's headings were slightly convergent, that the collision risk had passed when he saw the other aircraft, and that only a degree of vertical separation had prevented this incident from being more serious. He informed the Farnborough LARS(N) controller of the Airprox and passed the details.

He assessed the risk of collision as 'Medium'.

THE LIGHT AIRCRAFT: The Spitfire pilot reported seeing a red biplane, which he believed was a Pitts Special or similar Sports/Aerobatic type aircraft. Unfortunately, the reported aircraft could not be traced.

THE FARNBOROUGH LARS(N) CONTROLLER reports working LARS North and East as a band-boxed position. He had been working the Spitfire previously, via various flypast locations, and had handed the pilot to a local airfield ATCU. The Spitfire re-contacted him, established a Basic Service and, just after he established contact, reported an Airprox between himself and a red sports biplane. The controller stated that the Spitfire was tracking south-east bound at altitude 1900ft on QNH 1014hPa and that no other traffic was apparent on the radar display in the area.

Factual Background

The weather at Cranfield, Wyton and Cambridge was recorded as follows:

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METAR EGTC 071320Z 20010KT 170V240 9999 SCT040 18/06 Q1013
METAR EGUY 071250Z 21011KT 9999 SCT035 18/11 Q1013 BLU
METAR EGSC 071320Z 19011KT 150V240 9999 SCT041TCU 19/08 Q1014
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Analysis and Investigation

CAA ATSI

The incident occurred at 1311.45, 2.5nm southeast of Sackville Lodge glider site (Sackville), within Class G uncontrolled airspace between a Supermarine Spitfire and an untraced light aircraft, reported as a red biplane.

After completing a flypast at a glider site, the Spitfire pilot had set course for a display at another airfield. The Spitfire pilot was operating outside the Farnborough area of radar coverage but was in receipt of a Basic Service from Farnborough LARS(N).

CAA ATSI had access to the area radar recording, the written report from the Spitfire pilot together with the Farnborough ATSU report. Due to the uncertainty about the service provided by Farnborough, the request for Farnborough RTF was not made within 30 days and therefore was not available; however, the Farnborough Unit Investigation identified the content and timing of important transmissions.

The Spitfire pilot had earlier been in receipt of a Traffic Service from Farnborough LARS, but the radar service had been terminated and the Spitfire pilot was transferred to a local ATSU.

At 1305:08, radar showed the Spitfire 9.4nm south of Sackville, tracking north at an altitude of 2300ft and displaying a Farnborough SSR code of 5030. The Spitfire pilot continued north and, at 1309:31, started an orbit overhead Sackville until 1311:16, when radar showed the pilot setting course to the southeast, as shown in Figure 1 below.

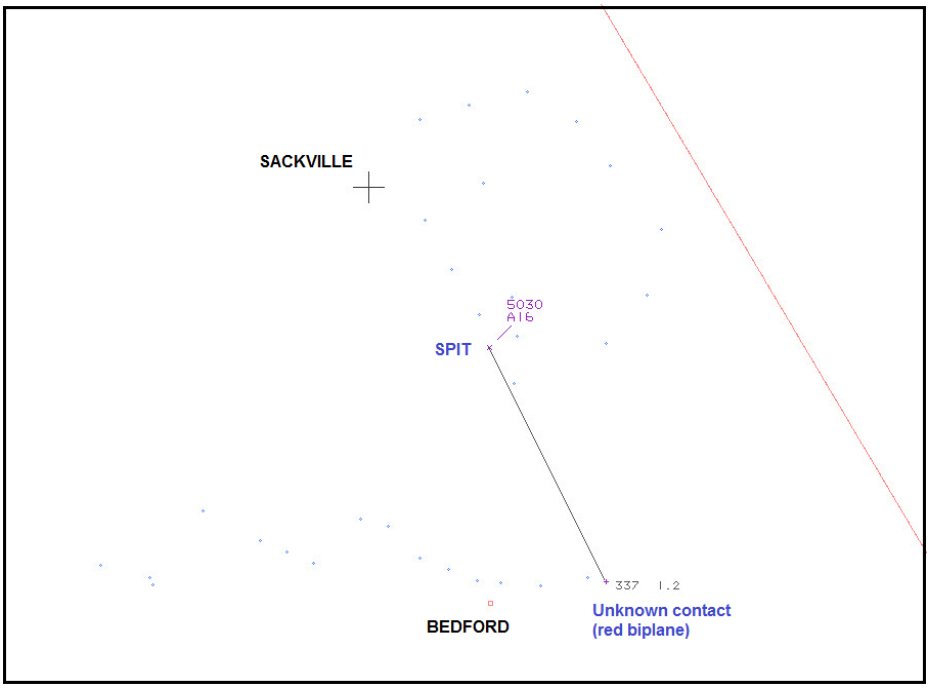

Figure 1: Swanwick MRT at 1311:16

At 1311:26, the Spitfire pilot reported back on the Farnborough LARS(N) frequency and, at 1311:41, the Farnborough controller advised him that only a Basic Service could be provided because he was operating on the edge of solid radar coverage. At this point the distance between the two converging aircraft was 0.4nm, as shown in Figure 2 below.

On the next radar update the unknown primary contact faded from the area radar and, at 1311:51, the Spitfire pilot advised that he wished to file an Airprox. The Spitfire pilot reported that the other aircraft was a small, red, sports bi-plane which had passed down his right hand side by 300ft.

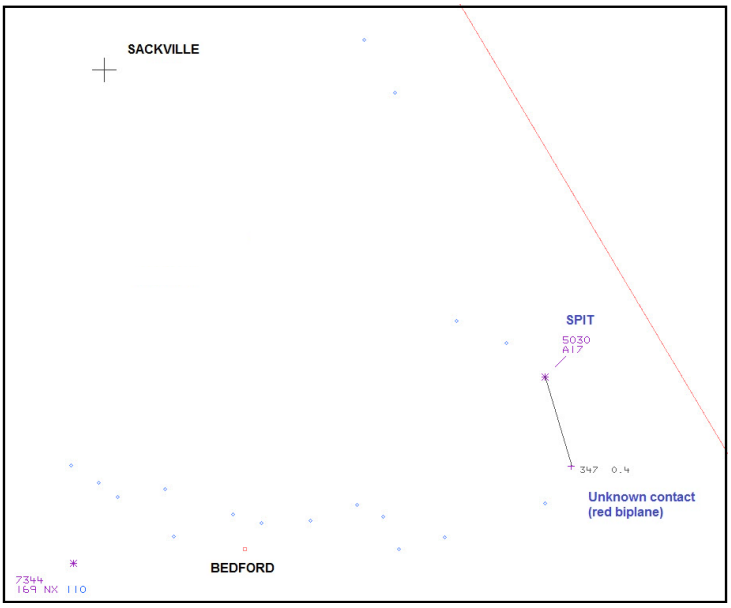

Figure 2: Swanwick MRT at 1311:41

CAP774 (UK Flight Information Services), Chapter 2 (Basic Service), paragraph 5 states:

> 'Pilots should not expect any form of traffic information from a controller, as there is no such obligation placed on the controller under a Basic Service outside an Aerodrome Traffic Zone (ATZ), and the pilot remains responsible for collision avoidance at all times. However, on initial contact the controller may provide traffic information in general terms to assist with the pilot's situational awareness. This will not normally be updated by the controller unless the situation has changed markedly, or the pilot requests an update. A controller with access to surveillance-derived information shall avoid the routine provision of traffic information on specific aircraft, and a pilot who considers that he requires such a regular flow of specific traffic information shall request a Traffic Service. However, if a controller FISO considers that a definite risk of collision exists, a warning may be issued to the pilot.'

The area radar recordings showed that the unknown contact as an intermittent radar return. The Spitfire was operating on the edge of Farnborough radar coverage and the Farnborough controller was not aware of the unknown aircraft and would not have been able to pass any warning.

UKAB Secretariat

Both pilots were operating in Class G airspace and had equal responsibility for collision avoidance. The precise geometry of the encounter was not recorded on radar, but from the primary-only track of the unknown contact, it appears likely that the Spitfire passed just ahead of the light aircraft, with a crossing angle of about 70°, and that the Spitfire pilot saw the light aircraft after CPA, as it emerged from behind his right wing. That being the case, the Spitfire pilot was required to give way[1], and to avoid passing over or under the other aircraft, or cross ahead of it, unless passing well clear of it[2].

Comments

HQ Air Command

The time between the Spitfire pilot checking-in with Farnborough and being advised of the Basic Service was 15sec, a few seconds before the reported Airprox. Whilst both pilots had equal responsibility to 'see and avoid' in Class G airspace, the Spitfire pilot would have been expecting

[1] Rules of the Air 2007 (as amended), Rule 9 (Converging)
[2] ibid., Rule 8 (Avoiding aerial collisions)

Traffic Information, given that he perceived he was in receipt of a Traffic Service. There appears to be a Human Factors element to the Spitfire pilot's awareness of the Service being provided, possibly as a result of workload during the sortie, which may have affected his prioritisation of lookout. However, care must also be taken to ensure that the conduct of the pilot of the other aircraft is considered equally, and that undue focus is not applied solely on the Spitfire pilot by virtue of his willingness to report.

Summary

A Spitfire and a light aircraft flew into confliction at 1312 on 7th September 2013. Both pilots were operating in Class G airspace, the Spitfire pilot under VFR in VMC and in receipt of a Basic Service. The light aircraft pilot could not be traced.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available included reports from the Spitfire pilot and the air traffic controller involved, radar photographs, and reports from the appropriate ATC and operating authorities.

The Board first discussed the Spitfire pilot's actions. Having already taken part in a display, he was flying en-route with what the Board surmised to be a busy cockpit workload ensuring correct navigation and timing to the next display. It was apparent from his report that he didn't see the biplane until after CPA, and was therefore not in a position to effect avoiding action. His perception that he was in receipt of a Traffic Service was mistaken and was, the Board agreed, probably as a result of his cockpit workload and changes of frequency.

The Board then turned to the actions of the biplane pilot and, after much discussion, opined that although he may have seen the Spitfire, it was probable that he had not. In the absence of any report from the biplane pilot, the Board discussed strategies for mitigating mid-air collision and noted that the majority of Airprox occur below 3000ft. Notwithstanding that the biplane was not transponding, the Board also discussed the utility of Traffic Alerting Systems and noted that there were a number of low-cost systems on the market that could alert against Modes C, S and ADS-B.

The Board noted that the aircraft tracks were such that there appeared to have been an opportunity for each pilot to see the other aircraft before CPA, and that the Spitfire pilot was required to give way. In light of his considerable flight experience, the Board accepted the Spitfire pilot's assessment of separation and, noting that this was after CPA, they felt that the geometry was such that the aircraft had been considerably closer at CPA. Had the biplane pilot seen the Spitfire he would not have allowed this to happen; therefore, given that neither pilot probably saw the other before CPA, the Board agreed that safety margins had been reduced much below normal.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: Effectively a non-sighting by the Spitfire pilot and a probable non-sighting by the biplane pilot.

Degree of Risk: B.

ERC Score[3]: 20

[3] 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.