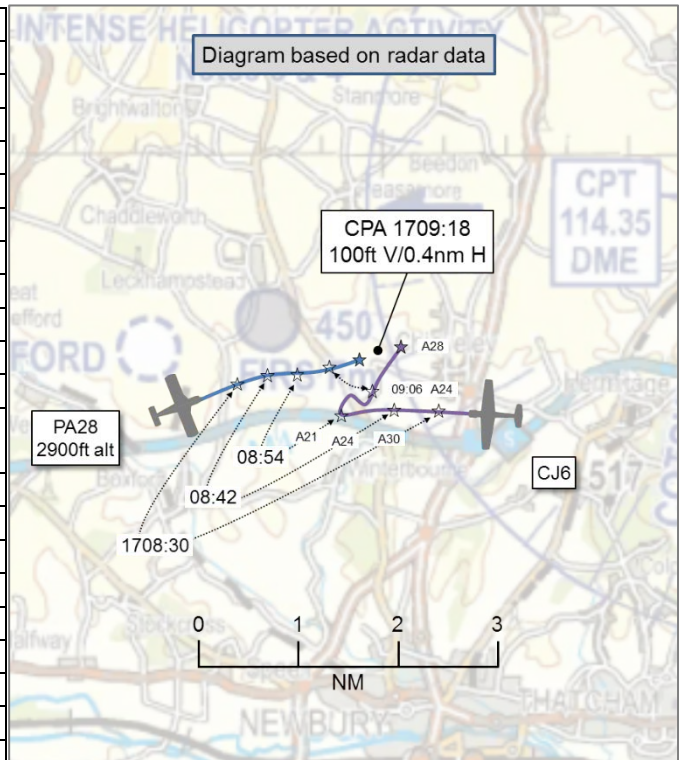


**AIRPROX REPORT No 2018189**

Date: 24 Jul 2018 Time: 1709Z Position: 5128N 00120W Location: ivo Firs Farm airfield

**PART A: SUMMARY OF INFORMATION REPORTED TO UKAB**

Recorded	Aircraft 1	Aircraft 2
Aircraft	PA28	Nanchang CJ6
Operator	Civ FW	Civ FW
Airspace	London FIR	London FIR
Class	G	G
Rules	VFR	VFR
Service	Basic	Basic
Provider	Benson	Farnborough
Altitude/FL	2900ft	2800ft
Transponder	A, C only	A, C, S
Reported		
Colours	White, red	Green
Lighting	Nav, strobe, landing	Nav
Conditions	VMC	VMC
Visibility	>10km	NK
Altitude/FL	3100ft	NK
Altimeter	QNH (1014hPa)	NK
Heading	074°	NK
Speed	94kt	NK
ACAS/TAS	Not fitted	Not fitted
Separation		
Reported	0ft V/500m H	Not seen
Recorded	100ft V/0.4nm H	



**THE PA28 PILOT** reports that he had negotiated a Basic Service with Benson Radar and, when in the vicinity of Firs Farm Airfield, he was passed Traffic Information on traffic in the 12 o'clock position, same height, 'acting erratically'. The conflicting traffic was sighted within seconds at the 12.30 position, same height and appeared to be closing. The first impression was that the conflicting traffic was a soaring bird and, because a collision seemed imminent, a rapid left turn at approximately 60° of bank was executed, followed by opposite bank to the right approximating to 15° right wing low. At this point the conflicting traffic was observed to be a model aircraft, in the process of carrying out a loop manoeuvre whilst passing below the right wingtip at a distance estimated to be 6-700 feet. The model-aircraft wing span was estimated to be in the order of 1.5 to 2m. The Benson controller was advised of the type of conflict traffic, and the flight continued to destination. No airborne follow up was undertaken, as a non-aircrew passenger became extremely agitated following the collision avoidance manoeuvres.

He assessed the risk of collision as 'High'.

**THE CJ6 PILOT** reports that he did not recall the sortie and consequently that his report lacked detail. He noted that he regularly saw many aeroplanes on each sortie, irrespective of direction from his base. However, he was not aware of any 'near-miss' as had been reported. He stated that lookout was critical for him and that he may have seen the other aircraft but not been concerned. He also stated that he may be more tolerant of reduced separation due to his formation flying practice, although he always made a point where possible of giving a wide berth to others, not wishing to cause concern. It was possible that he had not seen the other aircraft. He noted that because he often flew in close formation and performed aerobatics, he generally secured an ATC service (although due to controller work-load this was sometimes not possible), was aware of the correct use of the aerobatic squawk, and changed location regularly. He noted that the whole of the south of England can be considered as busy airspace.

**THE BENSON CONTROLLER** reports that the Airprox was not declared on frequency. He was banded on Approach/Director and Zone at the time of the incident. He recalled a spike in traffic levels occurring shortly before the Airprox, but everything had calmed down before he worked the PA28. The pilot was on frequency for a few miles when (approximately 2nm southwest of the CPT VOR) he noticed a primary return appear in front of the aircraft, as if it had paralleled the aircraft and the squawks had merged. This was followed by a squawk (possibly 0432) and height information showing approximately 300-400ft below. Traffic Information was immediately passed and the pilot said he was looking. The contact then diverged and the controller believed it to be no further factor. However, it turned back towards the aircraft, at which point the pilot called visual and reported that it looked like a model aircraft manoeuvring dynamically. The contact passed behind and the pilot continued his flight through the MATZ and on to destination without further incident.

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

**THE BENSON SUPERVISOR** reports that he could add no further details.

## Factual Background

The weather at Benson was recorded as follows:

METAR EGUB 241650Z 25007KT CAVOK 27/12 Q1013 BLU NOSIG=

## Analysis and Investigation

### Military ATM

An Airprox occurred on 24 Jul 18 at approximately 1710 UTC, near Firs Farm Airfield, between a PA28 and a Nanchang CJ6. The PA28 pilot was in receipt of a Basic Service from Benson Zone, and the CJ6 pilot was in receipt of a Basic Service from Farnborough LARS. The PA28 pilot free-called Benson Zone near Greenham Common and established a Basic Service. A crossing of the Benson southern MATZ stub was approved some 7min after the service was agreed, and a short time afterward Benson Zone passed Traffic Information on 'pop-up' traffic. Analysis of the CJ6 radar return showed rapidly changing altitudes (1800-3100ft) with a rate of climb/descent of 3400ft/min. No Airprox was reported on frequency and the controller was not notified of the incident for several days; therefore, his recollection of the incident was not complete.

Figures 1 and 2 show the positions of the PA28 and CJ6 in the lead-up to and during the Airprox. The screen shots are taken from a replay using Swanwick radars, which are not utilised by Benson Zone and therefore do not necessarily depict the picture available to the controller.

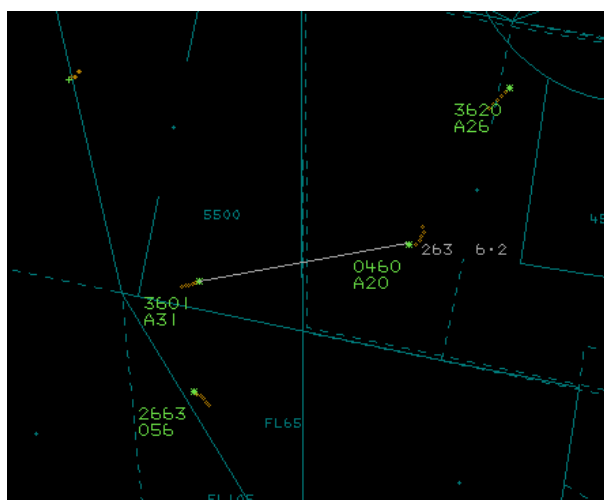


Figure 1

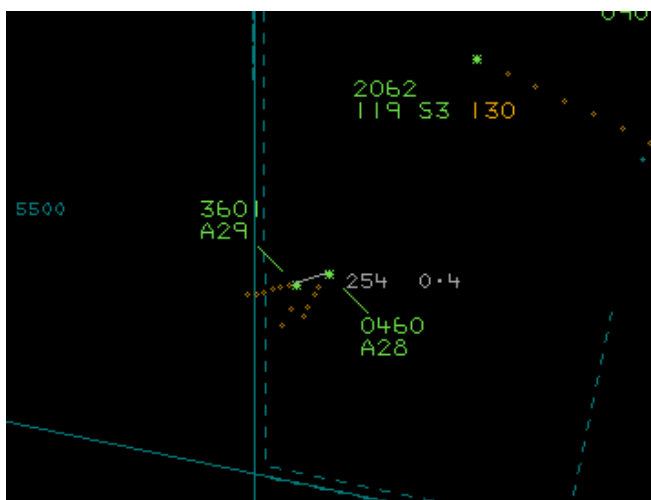


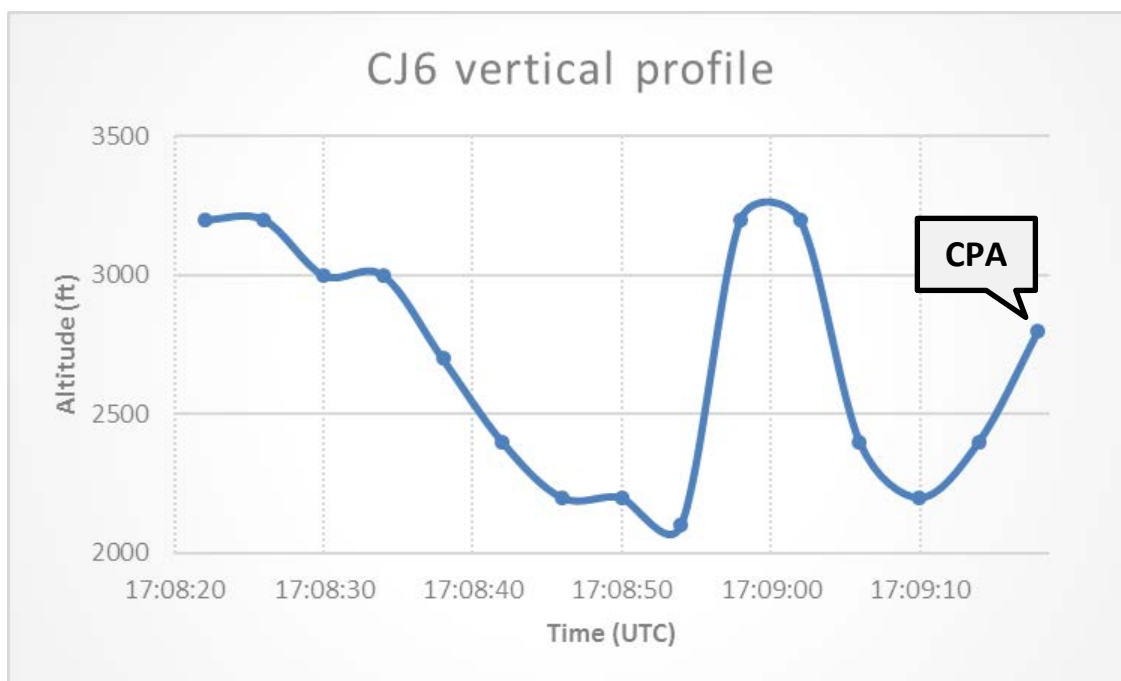
Figure 2 - CPA

In the 20sec before CPA, the CJ6 is seen manoeuvring at about 2200ft, prior to a rapid climb (c4500ft/min). CPA occurred at 1709:18 and was measured at 0.4nm lateral and 100ft vertical separation. Given the rapid manoeuvring of the CJ6 it is not known if the primary and secondary return were consistently painting on the Benson Zone controller's radar screen. At the point Traffic Information was passed, the Benson Zone controller reported the conflicting traffic as 'pop-up'. Workload for the controller was low, there were only two aircraft on frequency (including the PA28) and there were no transmissions to the other aircraft in the minutes leading up to the Airprox.

Under the conditions of a Basic Service, a controller is not required, nor should a pilot expect, any Traffic Information unless the controller perceives that a definite risk of collision exists. In this instance, the controller passed Traffic Information on two occasions to the PA28 pilot, who noted that without this alert there was a 'very great possibility that a mid-air collision would have occurred.' The controller acted appropriately in this instance and discharged his duty of care correctly.

### UKAB Secretariat

The PA28 and CJ6 pilots shared an equal responsibility for collision avoidance and not to operate in such proximity to other aircraft as to create a collision hazard<sup>1</sup>. If the incident geometry is considered as converging, then the PA28 pilot was required to give way to the CJ6<sup>2</sup>. If the incident geometry is considered as overtaking, then the PA28 pilot had right of way and the CJ6 pilot was required to keep out of the way of the other aircraft by altering course to the right<sup>3</sup>.



### Summary

An Airprox was reported when a PA28 and a Nanchang CJ6 flew into proximity near Firs Farm at 1709hrs on Tuesday 24<sup>th</sup> July 2018. Both pilots were operating under VFR in receipt of a Basic Service, the PA28 pilot from Benson and the CJ6 pilot from Farnborough.

<sup>1</sup> SERA.3205 Proximity.

<sup>2</sup> SERA.3210 Right-of-way (c)(2) Converging.

<sup>3</sup> SERA.3210 Right-of-way (c)(3) Overtaking.

## **PART B: SUMMARY OF THE BOARD'S DISCUSSIONS**

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

Members first discussed the CJ6 pilot's actions and noted that he was operating under a Basic Service from Farnborough. The Board agreed that the dynamic manoeuvring of an aircraft conducting aerobatics places an onus on their pilots to be additionally vigilant, and that a surveillance-based FIS would have helped in that regard. Members also noted that the CJ6 was wearing a Farnborough squawk, but that the aerobatic squawk of 7004 would have provided additional SA to the Benson controller, and in turn to the PA28 pilot through Traffic Information. GA members wondered whether the CJ6 pilot had informed Farnborough that he would be conducting aerobatics, and if he had, why he had not been requested to squawk 7004.

The Board noted that the PA28 pilot's perception of events appeared to be markedly different from the reality of the radar recordings. Although there may well have been a model aircraft also operating in that location by coincidence, it was felt to be quite unlikely that one would be conducting aerobatic manoeuvres at a height of some 2500ft above ground level. To do so would serve no purpose for recreational model flying, being above the practical limit of VLOS and of little discernible advantage to first-person view (FPV) flying. After further discussion, members concluded that the PA28 pilot had most likely misperceived the CJ6 as a model aircraft due in part to a degree of 'startle factor'. This misperception was felt to be a contributory factor which had consequently led to his concern over its perceived proximity. The Board agreed that the incident met the criteria for reporting and in this case it was considered that normal procedures, safety standards and parameters had pertained.

## **PART C: ASSESSMENT OF CAUSE AND RISK**

<u>Cause:</u>	The PA28 pilot was concerned by the proximity of the CJ6.
<u>Contributory Factor:</u>	The PA28 pilot perceived the CJ6 to be a model aircraft and therefore closer than it was.
<u>Degree of Risk:</u>	E.
<u>Safety Barrier Assessment<sup>4</sup></u>	

In assessing the effectiveness of the safety barriers associated with this incident, the Board concluded that all relevant barriers had performed as intended.

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