

**AIRPROX REPORT No 2019230**

Date: 08 Aug 2019 Time: 1500Z Position: 5207N 00006W Location: 1NM SE Top Farm airstrip

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

Recorded	Aircraft 1	Aircraft 2
Aircraft	Jabiru UL450	Hurricane
Operator	Civ FW	Civ FW
Airspace	London FIR	London FIR
Class	G	G
Rules	VFR	VFR
Service	None	Basic
Provider	Safety Comm	Duxford
Altitude/FL	NK	NK
Transponder	Not fitted	Standby
<b>Reported</b>		
Colours	White	Green, brown
Lighting	Not fitted	NK
Conditions	VMC	VMC
Visibility	>10km	20km
Altitude/FL	1000ft	1500ft
Altimeter	QNH (1009hPa)	NK
Heading	240°	180°
Speed	80kt	160kt
ACAS/TAS	Not fitted	Not fitted
<b>Separation</b>		
Reported	0ft V/200m H	500ft V/1000m H
Recorded	NK	

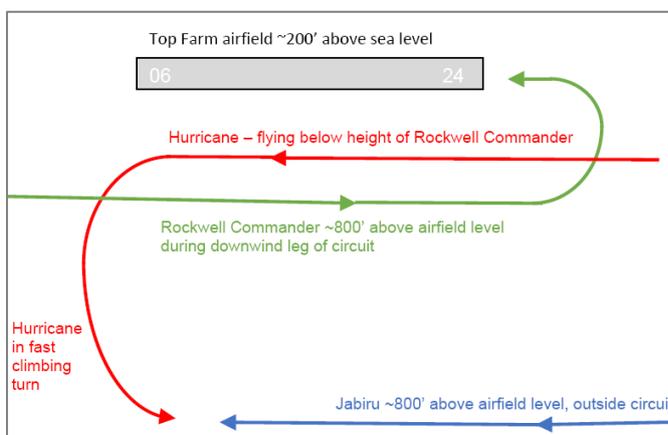


Diagram supplied by Jabiru pilot. Not to scale.

**THE JABIRU PILOT** reports that on first sighting the Hurricane it was about 1nm southeast of Top Farm airfield (elevation 200ft). The Jabiru was travelling southwest parallel to the runway, beyond the circuit at about 800-900ft aal, intending to join the downwind leg of the left-hand circuit to RW24. The Jabiru pilot and passenger saw two aircraft in the vicinity of the downwind leg of the circuit; one was a Rockwell Commander travelling in a northeast direction [in the circuit pattern] and the other was a Hurricane travelling fast in the opposite direction. The Rockwell Commander pilot later confirmed that, when he was on the downwind leg of the circuit at approx 800ft above the airfield, the Hurricane passed between him and the runway at a lower height than him, travelling fast in the opposite direction. At that time, there were 3 aircraft in the vicinity of Top Farm: the Jabiru, the Rockwell Commander and a Cessna, which had all communicated on the Safety Com frequency, while the Hurricane had not communicated on that frequency. When the Hurricane was approximately abeam and parallel to the southwest end of the runway, it performed a climbing U-turn to the left which, within seconds, brought it directly towards and into conflict with the Jabiru. As soon as the collision trajectory became apparent, the Jabiru pilot initiated a sudden very steep turn to the right to avoid the Hurricane. At that point, the pilot and passenger lost sight of the Hurricane which passed behind them.

The pilot assessed the risk of collision as 'High'.

**THE HURRICANE PILOT** reports that he was flying to Duxford, climbing from 700ft and reaching around 1000ft to the north of Top Farm, when he turned to the southeast toward Duxford. He saw traffic in the vicinity of Duxford above and below so arrested the climb and passed between their respective altitudes. On returning to Duxford he was informed of a telephone call regarding a Jabiru which he presumed was the higher aircraft. He spoke with the aircraft owner and agreed that in future he would avoid the vicinity of Top Farm airstrip. Flight visibility was good throughout although largely restricted to forward vision due to the cockpit design and the Helmet worn.

The pilot assessed the risk of collision as 'Low'.

## Factual Background

The weather at Cambridge was recorded as follows:

METAR EGSC 081450Z 22006KT 180V260 9999 SCT045 25/10 Q1009=

## Analysis and Investigation

### UKAB Secretariat

The Jabiru and Hurricane 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>. An aircraft operated on or in the vicinity of an aerodrome shall conform with or avoid the pattern of traffic formed by other aircraft in operation<sup>2</sup>. If a transponder is fitted and functional and the aircraft power system allows, it is required to have all modes selected on<sup>3</sup>. Neither aircraft appeared on the area radar replay.

## Summary

An Airprox was reported when a Jabiru UL450 and a Hawker Hurricane flew into proximity near Top Farm airstrip at about 1500Z on Thursday 8<sup>th</sup> August. Both pilots were operating under VFR in VMC; the Jabiru pilot not in receipt of a FIS whilst joining the Top Farm visual circuit on Safety Com, and the Hurricane pilot in receipt of a Basic Service from Duxford Tower.

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

Information available consisted of reports from both pilots and radar photographs/video recordings. Relevant contributory factors mentioned during the Board's discussions are highlighted within the text in bold, with the numbers referring to the Contributory Factors table displayed in Part C.

The Board first considered the pilots' actions and noted that although the Hurricane pilot was in receipt of a Basic Service from Duxford, the controller was not required to monitor his progress (**CF1**) and could not assist in, for example, providing Traffic Information on traffic in the vicinity of Top Farm. Although the Hurricane pilot did not appear to have SA on the Top farm traffic (**CF8**), members agreed that he could reasonably have assumed that there may be traffic in the pattern intending to land and that a prudent course of action would have been to avoid the airfield laterally and or vertically. In the event, it appeared he had passed between an aircraft on the downwind leg and the runway and therefore had not integrated with or avoided the pattern of traffic intending to land (**CF2, CF5**).

It seemed to the Board that the Hurricane pilot may not have planned his short transit flight with sufficient care (**CF3**) and, assuming that he was aware that he was close to Top Farm, he could have communicated his intentions on the promulgated airfield frequency to the benefit of those in proximity to the airfield (**CF6, CF7**). Some members also wondered whether the Hurricane pilot had in fact reported the same incident as the Jabiru pilot; the Hurricane pilot's description of transiting in a south-easterly direction past Top Farm did not accord with the Jabiru pilots description of an east-west flight through the Top Farm circuit area. Whatever the case, members agreed that the reported proximity of the 2 aircraft was such that it seemed unlikely that the Hurricane pilot had seen the Jabiru (**CF9**), and that the rapid change of direction by the Hurricane pilot had resulted in the Jabiru pilot being unable to effectively assimilate the Hurricane pilot's intentions until a late stage (**CF10**).

Lastly, the Board commented on the Hurricane pilot's lack of SSR transponder output (**CF4**). Notwithstanding the relevant regulation which requires transponders to be selected on with all modes selected at all times unless advised by ATC, members also reiterated that transponder output is an increasingly important element to electronic conspicuity; the ability for other aircrafts' TASs to alert on transponder outputs is in itself an important means of mitigation to MAC. The Board acknowledged that

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

<sup>2</sup> SERA.3225 Operation on and in the Vicinity of an Aerodrome.

<sup>3</sup> SERA.13001, SERA.13005

in this case the Jabiru was not fitted with a TAS and that the Jabiru pilot had seen the Hurricane in good time, but emphasised that, in general, transponders must be selected on with all modes.

Considering the risk, although the aircraft did not appear on radar replay the Board felt that the Jabiru pilot's description of the incident and their report of separation achieved was such that it appeared that safety had been much reduced below the norm and where collision avoidance had only been assured by their emergency avoiding action. Accordingly, the Board agreed a risk rating of Category B.

## **PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK**

### Contributory Factors:

2019230			
CF	Factor	Description	Amplification
<b>Ground Elements</b>			
• Situational Awareness and Action			
1	Contextual	• Situational Awareness and Sensory Events	Not required to monitor the aircraft under the agreed service
<b>Flight Elements</b>			
• Regulations, Processes, Procedures and Compliance			
2	Human Factors	• Flight Crew ATM Procedure Deviation	Regulations/procedures not complied with
• Tactical Planning and Execution			
3	Human Factors	• No Decision/Plan	Inadequate planning
4	Human Factors	• Transponder Selection and Usage	
5	Human Factors	• Aircraft Navigation	Did not avoid/conform with the pattern of traffic already formed
6	Human Factors	• Accuracy of Communication	Ineffective communication of intentions
7	Human Factors	• Communications by Flight Crew with ANS	Pilot did not communicate with appropriate service provider
• Situational Awareness of the Conflicting Aircraft and Action			
8	Contextual	• Situational Awareness and Sensory Events	Generic, late, no or incorrect Situational Awareness
• See and Avoid			
9	Human Factors	• Monitoring of Other Aircraft	Non-sighting or effectively a non-sighting by one or both pilots
10	Human Factors	• Monitoring of Other Aircraft	Late-sighting by one or both pilots

Degree of Risk: B.

Recommendation: Nil.

### Safety Barrier Assessment<sup>4</sup>

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

<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](#).

**Ground Elements:**

**Situational Awareness of the Confliction and Action** were assessed as **not used** because neither pilot was in receipt of a service that included a controller maintaining SA of their relative positions.

**Flight Elements:**

**Regulations, Processes, Procedures and Compliance** were assessed as **ineffective** because the Hurricane was operated in proximity to the pattern of traffic at Top Farm airstrip.

**Tactical Planning and Execution** was assessed as **ineffective** because the Hurricane pilot’s planned route took him into proximity to Top Farm airstrip.

**Situational Awareness of the Conflicting Aircraft and Action** were assessed as **ineffective** because neither pilot was aware of the proximity of the other until visually sighted.

**See and Avoid** were assessed as **partially effective** because although the Jabiru pilot saw the Hurricane in good time, the Hurricane pilot’s unexpected subsequent manoeuvre meant that the Jabiru pilot had to take emergency avoiding action.

