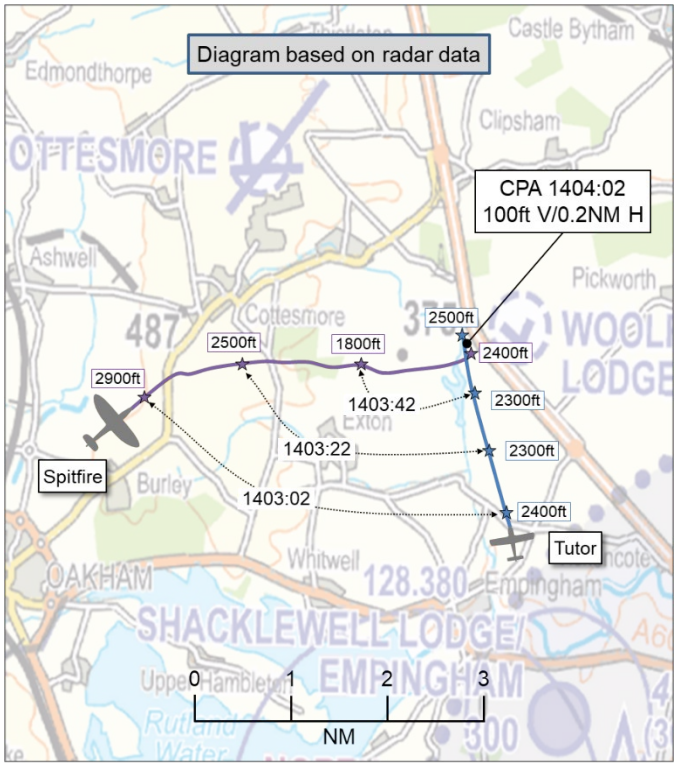
AIRPROX REPORT No 2024208

Date: 14 Aug 2024 Time: 1404Z Position: 5242N 00036W Location: 1NM south of Woolfox Lodge

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	Tutor	Spitfire
Operator	HQ Air (Trg)	Civ Comm
Airspace	London FIR	London FIR
Class	G	G
Rules	VFR	VFR
Service	Traffic	Listening Out
Provider	Wittering Zone	Wittering Zone
Altitude/FL	2500ft	2400ft
Transponder	A, C, S	A, C, S
Reported		
Colours	White	Camouflage
Lighting	Strobe, nav and landing lights	Nil
Conditions	VMC	VMC
Visibility	>10km	>10km
Altitude/FL	2200ft	2400ft
Altimeter	RPS (1010hPa)	QNH
Heading	NR	Manoeuvring
Speed	100 kt	190kt
ACAS/TAS	TAS	Other
Alert	TA	N/A
Separation at CPA		
Reported	0ft V/50-100m H	0ft V/300m H
Recorded	100ft V/0.2NM H	



THE TUTOR PILOT reports that they were in the approximate area of 1-2 miles east of Cottesmore, the student had control for practice of an element when an immediate Traffic Alert was presented on the TAS display and annunciated; there was no previous proximate TAS display as far as they were aware. They immediately took control and identified the traffic visually in the 9 o'clock position just behind the left wing, which was a Spitfire, 500ft low and climbing rapidly towards the aircraft. They manoeuvred the aircraft to try to diverge from what they perceived was currently a rapidly converging situation and the Spitfire continued to track towards the aircraft. It passed behind the aircraft at co-altitude at a range of 50-100m and was close enough to be able to identify specific markings. They believed that ATC (Wittering Zone) gave them a callout on the traffic at the same time that the TAS annunciated, although they could not positively confirm that with absolute clarity. ATC again passed information on the traffic as it passed behind at co-altitude. They [watched] the aircraft as it cleared to the north. They informed ATC that they were visual with the Traffic and asked if it was on their frequency, surprised at how quickly the event had developed. [ATC] advised that the Spitfire was neither on UHF or VHF with them. In error, they did not declare the Airprox with Wittering Zone immediately but did so once they had landed. Upon taxy in they asked the Tower [controller] to inform the Zone [controller] that they were submitting an Airprox DASOR for the event with the Spitfire, which was passed.

The pilot perceived the severity of the incident as 'Low'.

THE SPITFIRE PILOT reports that they were flying north of Wittering MATZ, listening to Wittering Zone. The frequency appeared quiet. During a gentle left-hand turn from east onto south [sic], they saw an RAF Grob Tutor appear above the right wing, just to the right of the engine cowling. Immediately they felt this was a very late spot, but the relative positions of both aircraft were such that any risk of collision was low. They assessed that they would pass safely behind the Tutor aircraft and that, although their separation distances were less than they would have liked, any risk of collision was already low.

The pilot further reported that they felt that the constant angle of bank turn to the left obscured the aircraft below the right wing. As the aircraft came into their view any risk of collision was already low as they could see a safe flightpath behind the other aircraft.

It was also noted that the aircraft [usually] has [an electronic conspicuity device] fitted, but previously on that flight the system had 'unlocked' and they found themself flying without navigation on their cockpit mounted phone. They elected to disconnect completely from [that device] and use 'Location Services' on their phone.

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

THE WITTERING ZONE CONTROLLER reports that they were undertaking the task of general handling station-based Tutors. At the time of the occurrence they had 4 Tutors on their frequency.

At 1403 they called a conflictor squawking 7000 to [the Tutor pilot], approximately 3NM west-northwest of their position at a similar altitude, descending. Approximately a minute later they observed the conflicting traffic 400ft below and tracking west-to-east abeam [the Tutor's] position. However, when they observed the conflictor starting to climb they then re-called the Traffic to [the Tutor pilot] as abeam their position indicating less than 200ft below as it appeared to climb quite quickly. [The Tutor pilot] stated that they were now visual with a Spitfire. [The controller] opened Mode S settings and believed the conflicting traffic to be [Spitfire callsign].

A few moments after, [the Tutor pilot] asked if this Spitfire was on their frequency to which they replied it was not on any Wittering frequency. The rest of the sortie continued without incident. They received a phone call whilst on position to inform them [that the Tutor pilot] would be filing an Airprox. Following this, when another controller became available about 10min later, they were relieved.

The controller perceived the severity of the incident as 'Medium'.

THE WITTERING ATCO IC reports that RAF Wittering is not established for a Supervisor position. They were the Approach controller during the incident. They did not specifically witness [the event], however, they were aware of the situation. They overheard traffic being called against a 7000 [squawk] that was operating in the local area and were asked by the Zone controller if the Spitfire was working any other Wittering frequency, which it was not.

The controller at the time was operating in Zone and had a sufficient break before taking position. Shortly after the incident, the controller was relieved from position to submit a DASOR.

Station-based traffic levels throughout the day were medium-to-high and local traffic levels ranged from medium-to-high.

Factual Background

The weather at Wittering was recorded as follows:

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METAR EGXT 141350Z 01004KT 9999 OVC032 21/13 Q1014 RMK BLU
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Analysis and Investigation

Local Unit Investigation

The investigation recorded the recollection of the Wittering Zone controller as follows:

An initial traffic/conflicting call was made to [the Tutor pilot] when separation was approximately 3NM. They had no recollection of whether this was acknowledged by [the Tutor pilot], however, it was confirmed that these calls are not always acknowledged by the operating pilot. A loss of safe separation occurred approximately 1min after the initial call when [the Spitfire] made an unexpected vertical climb at speed. The Wittering Zone controller made a 2nd traffic call at this stage to [the Tutor

pilot] when loss of separation became apparent. [The Spitfire pilot] was not speaking on Wittering Zone frequency as there was no requirement to do so when operating in Class G airspace.

The investigation made the following findings: [The Tutor] and [Spitfire] merged at a fast pace due to an unexpected vertical climb by [the Spitfire] and lack of knowledge or awareness from each operating pilot. [The Tutor] was under an air traffic service at the time from Wittering Zone. Initial Traffic Information was passed by Wittering Zone but was unconfirmed whether this was acknowledged by [the Tutor pilot]. Appropriate TAS alerts annunciated as expected allowing [the Tutor pilot] to take the appropriate avoiding action. The Spitfire pilot had been unaware of the presence of the Tutor due to failure of onboard electronic conspicuity equipment. [It was considered that the Spitfire's EC] would have provided accurate Traffic Information had it been fully operational, and noted that there was no requirement to operate under an air traffic service when operating in Class G.

6FTS

The investigation included the Tutor pilot's report and that of the Spitfire pilot, who willingly shared their Airprox report with them, stating that they had a late spot of the Tutor, hindered by an unserviceable [electronic conspicuity] system. The reporter commented that TAS and ATC information were effective barriers to enable the Tutor pilot to become visual with the Spitfire and maintain safe separation.

The investigation had made use of an ADS-B data source to review the occurrence. The trace stopped at 1408, approximately 10NM north of Wittering; the location detailed in the Tutor pilot's DASOR. At 1411, the Spitfire appeared approximately 500m west of the Tutor at 2050ft. The Tutor was indicating 2150ft. The Spitfire trace then remained stationary for approximately 45sec until departing to the north. This data was unverified.

The investigation made the following comments: There had been a loss of safe separation between the aircraft. The Tutor pilot was alerted to the Spitfire's presence by TAS at a late stage of its approach from low 8-9 o'clock passing through the Tutor's 6 o'clock co-alt in a climb, similar to a low to high quartering guns attack profile. It is not known if the Spitfire [pilot] was visual with the Tutor at the time. The Tutor was operating under an air traffic service and was fitted with multiple proximity warners as well as being flown by service or military trained aircrew who are well trained in lookout techniques. The Spitfire pilot was not under an air traffic service and was not talking to any ATC agency, but Class G airspace does not require an air traffic service.

2 Gp BM

Utilising occurrence reports and information from the local investigations, outlined below are the key events that preceded the Airprox. Where available, they are supported by screenshots to indicate the positions of the relevant aircraft at each stage. Screenshots are taken from Unit radar recordings and present the radar presentation of the Tutor and Spitfire available to the Wittering Zone controller.

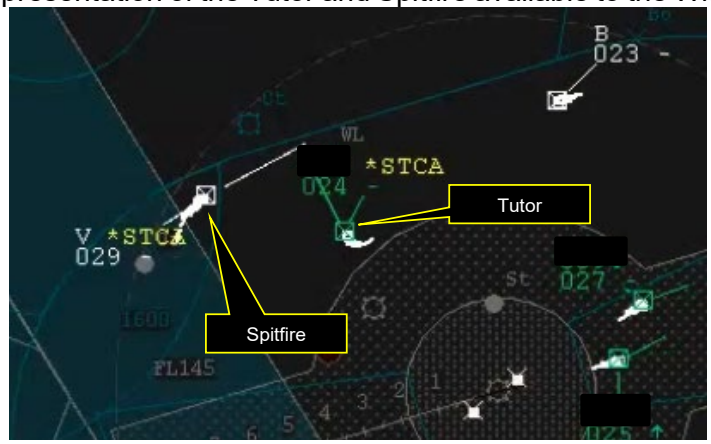


Figure 1 – Time 1403:10 STCA activated between the Tutor and Spitfire. Separation (3.6NM and 500ft)

At 1403:10, a short term conflict alert (STCA) activated between the Tutor and Spitfire (Figure 1). The STCA was triggered in response to the Tutor turning from a southwesterly to a northwesterly track and the Spitfire also turning from a northeasterly to an easterly track. The Wittering Zone controller initially paused to observe the Spitfire's flight profile before providing Traffic Information to the Tutor pilot regarding the Spitfire, "*Traffic west northwest, 3 miles, tracking east, indicating similar altitude, descending".* The Tutor pilot acknowledged the Traffic Information, reporting visual.

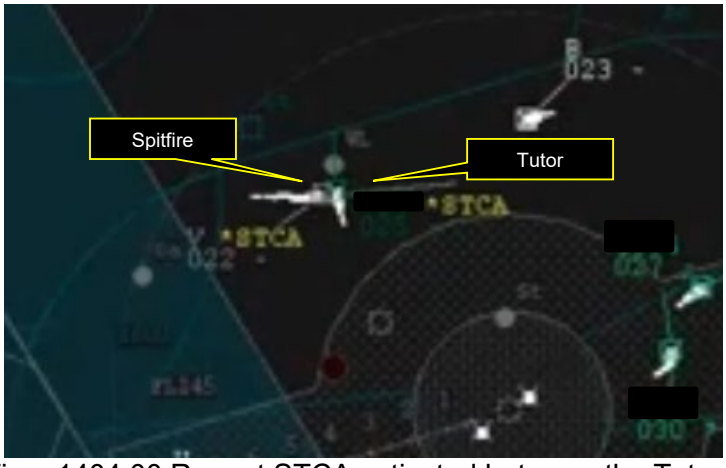


Figure 2 – Time 1404:00 Repeat STCA activated between the Tutor and Spitfire. Separation (0.2NM and 200ft)

At 1404:00, STCA re-activated between the Tutor and Spitfire (Figure 2). The Wittering Zone controller updated the previous Traffic Information "*previous called traffic is now, abeam your position, indicating 200ft below".* The Tutor pilot again acknowledged the Traffic Information, reporting visual and stating the aircraft as a Spitfire.

CPA occurred at 1404:02 and recorded as 0.1NM and 100ft separation.

On analysis of the local BM investigation, radar recordings and screenshots, and the occurrence reports of the Wittering Zone controller and Tutor pilot, they surmised that the actions of the Wittering Zone controller and provision of Traffic Information supported the Tutor pilot in becoming visual with the Spitfire. The manoeuvring profiles of both aircraft made accurate Traffic Information challenging, however, the Wittering Zone controller provided sufficiently accurate information on both occasions.

UKAB Secretariat

An analysis of the NATS radar replay was undertaken and both aircraft were positively identified using Mode S data. The Tutor was heading approximately north between 2300-2400ft and the Spitfire heading east at varying altitudes. As their positions converged, the Spitfire was seen to turn left onto approximately north at 2400ft and the Tutor was at 2500ft on 1013hPa.

The closest point of approach was assessed as occurring at 1404:02 with 0.2NM horizontal and 100ft vertical separation (Figure 3).

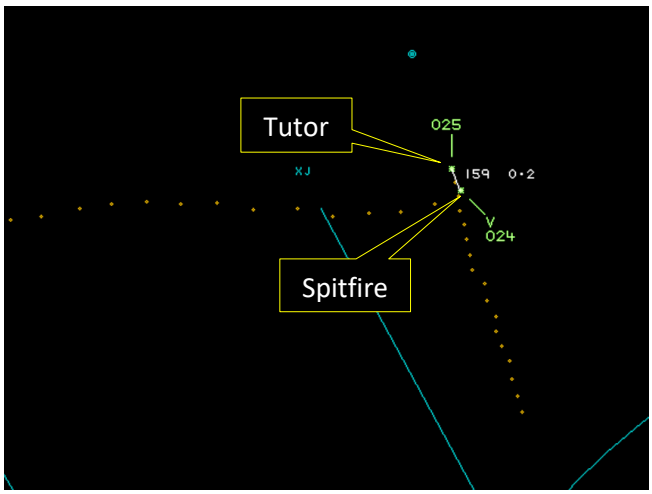


Figure 3 - Time 1404:02 CPA 0.2NM horizontal and 100ft vertical separation.

The Tutor and Spitfire pilots shared an equal responsibility for collision avoidance and not to operate in such proximity to other aircraft as to create a collision hazard.[1] If the incident geometry is considered as converging then the Spitfire pilot was required to give way to the Tutor.[2]

Comments

HQ Air Command

The Tutor pilot received a TAS warning and TI from Wittering Zone. Despite this, the pilot was unable to effect a timely avoidance manoeuvre once becoming visual with the Spitfire. It is encouraging to see the Spitfire pilot trying to gain situational awareness on the Wittering frequency in the absence of any LARS coverage. Despite not being a LARS provider, a radio call on the Wittering frequency would have augmented situational awareness amongst both pilots and the controller to allow better coordination between aircraft. The RAF urges civilian and military pilots to utilise ATC services where available, particularly LARS, and encourages attendance at Regional Airspace Users' Working Groups to discuss these matters.

AOPA

Whenever possible, it improves everyone's situational awareness when pilots communicate with the correct surveillance-equipped ATSU. In this case, had RAF Wittering been a LARS provider, which it is not, it is possible this event would not have occurred.

Summary

An Airprox was reported when a Tutor and a Spitfire flew into proximity 1NM south of Woolfox Lodge at 1404Z on Wednesday 14th August 2024. Both pilots were operating under VFR in VMC, the Tutor pilot in receipt of a Traffic Service from Wittering Zone and the Spitfire pilot listening-out on the Wittering Zone frequency.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of reports from both pilots, radar photographs/video recordings, reports from the air traffic controllers involved and reports from the appropriate operating authorities. 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 actions of the Tutor pilot, and noted that they had been performing their flight tasks in the manner expected of them. Members agreed that the Tutor pilot had had situational

[1] (UK) SERA.3205 Proximity. MAA RA 2307 paragraphs 1 and 2.
[2] (UK) SERA.3210 Right-of-way (c)(2) Converging. MAA RA 2307 paragraph 12.

awareness of the Spitfire's presence after having received, and acknowledging, Traffic Information for the Wittering Zone controller and receiving an alert from their TAS (**CF4**), even though the pilot had been uncertain as to whether they had heard a call from Wittering Zone at the same time as the TAS alert had been received. The Board also noted that the Tutor pilot had been surprised at the Spitfire's closure rate and had therefore been concerned by the proximity of the Spitfire (**CF6**), and agreed that the Tutor pilot had taken appropriate action inasmuch as they had manoeuvred in an attempt to reduce the convergence of the two aircraft.

Turning their attention to the actions of the Spitfire pilot, the Board wondered why they had taken the trouble to select the Wittering Zone frequency yet had not communicated with or requested a service from Wittering Zone (**CF2**) to achieve some situational awareness of traffic in the vicinity. Some members mentioned that the area had no LARS provider and they felt that GA pilots may be disincentivised to call Wittering Zone if no such service existed. There followed some discussion on LARS provision and when or whether it would return to the area, and members were hopeful that it would not take too long. One member, who better understood the nuances of military ATC, explained that while Wittering Zone may have 'band-boxed' their UHF and VHF frequencies, that had been no guarantee that the Spitfire pilot 'listening in' on a VHF frequency would have heard the transmissions of the Tutor pilot who had been on a UHF frequency. It was further explained that, had the Spitfire pilot called Wittering Zone and announced their presence, then the controller could have made the UHF frequency calls available for them to listen to, and have had the potential to provide them with information on pertinent traffic in their vicinity. The Board agreed that, as it was, the Spitfire pilot had had no situational awareness of the presence or position of the Tutor (**CF3**), and that from the radar and pilot report it had been clear that the Spitfire pilot had had a late sighting of the Tutor (**CF5**). Members expressed their thanks to the pilot for their engagement in the UK Airprox reporting process.

The Board then looked at the actions of the Wittering Zone controller and there was some discussion about the passing of timely Traffic Information to the Tutor pilot. Members agreed that Traffic Information had been passed on receipt of a Short Term conflict Alert (STCA) (**CF1**) and there was little else that the controller could have done, especially once knowing that the Tutor pilot had been visual with the Spitfire and without specific information on the Spitfire pilot's intentions.

When determining the risk of collision, members agreed that, although safety had been degraded and that the Tutor pilot had been concerned by the proximity of the Spitfire, ultimately, the timely sighting of the Spitfire by the Tutor pilot, followed by their manoeuvre away from it, had resulted in any risk of collision being removed. The Board assigned Risk Category C to this event.

PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK

Contributory Factors:

	2024208			
CF	**Factor**	**Description**	**ECCAIRS Amplification**	**UKAB Amplification**
	Ground Elements			
	• Electronic Warning System Operation and Compliance			
1	Technical	• STCA Warning	An event involving the triggering of a Short Term Conflict Alert (STCA) Warning	
	Flight Elements			
	• Tactical Planning and Execution			
2	Human Factors	• Communications by Flight Crew with ANS	An event related to the communications between the flight crew and the air navigation service.	Pilot did not request appropriate ATS service or communicate with appropriate provider
	• Situational Awareness of the Conflicting Aircraft and Action			
3	Contextual	• Situational Awareness and Sensory Events	Events involving a flight crew's awareness and perception of situations	Pilot had no, late, inaccurate or only generic, Situational Awareness
	• Electronic Warning System Operation and Compliance			
4	Contextual	• Other warning system operation	An event involving a genuine warning from an airborne system other than TCAS.	

	• See and Avoid			
5	Human Factors	• Identification/ Recognition	Events involving flight crew not fully identifying or recognising the reality of a situation	Late sighting by one or both pilots
6	Human Factors	• Perception of Visual Information	Events involving flight crew incorrectly perceiving a situation visually and then taking the wrong course of action or path of movement	Pilot was concerned by the proximity of the other aircraft

Degree of Risk: C.

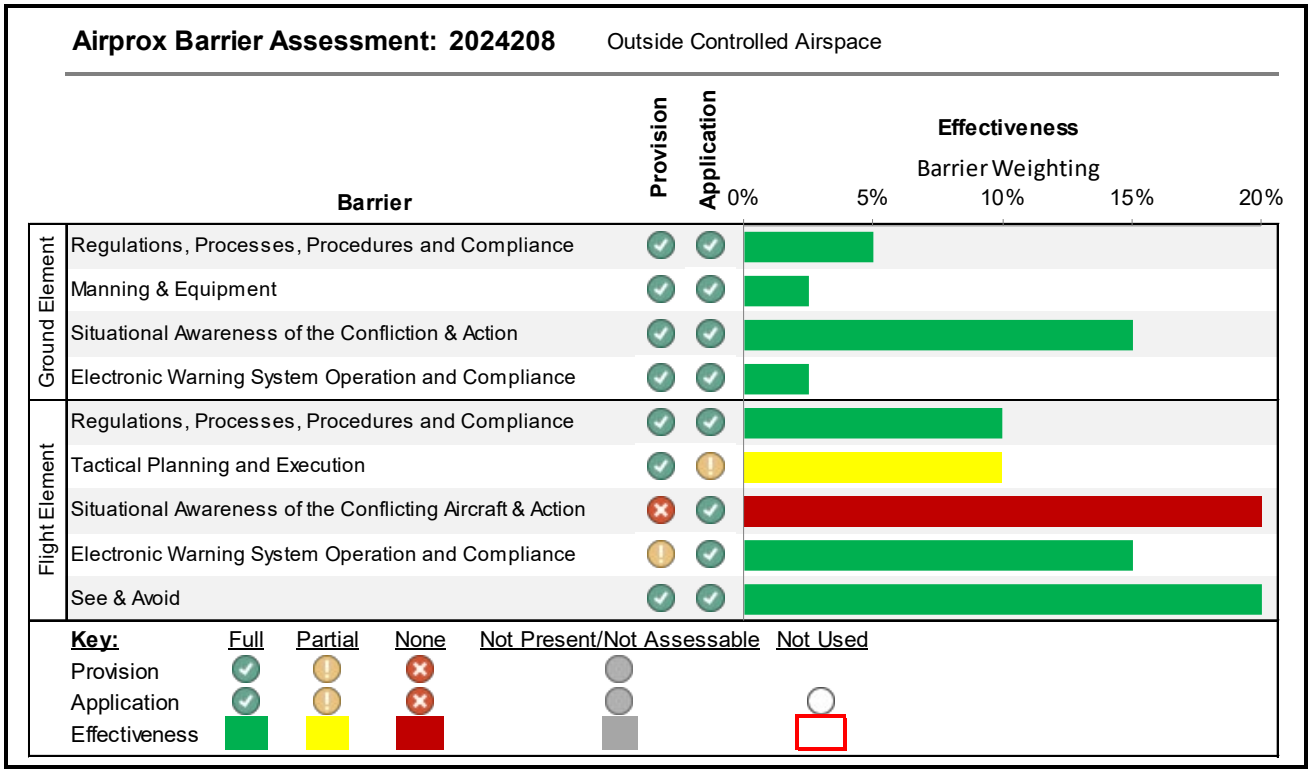
Safety Barrier Assessment[3]

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

Flight Elements:

Tactical Planning and Execution was assessed as **partially effective** because the Spitfire pilot could have communicated with Wittering Zone.

Situational Awareness of the Conflicting Aircraft and Action were assessed as **ineffective** because the Spitfire pilot had no situational awareness of the presence or position of the Tutor.



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