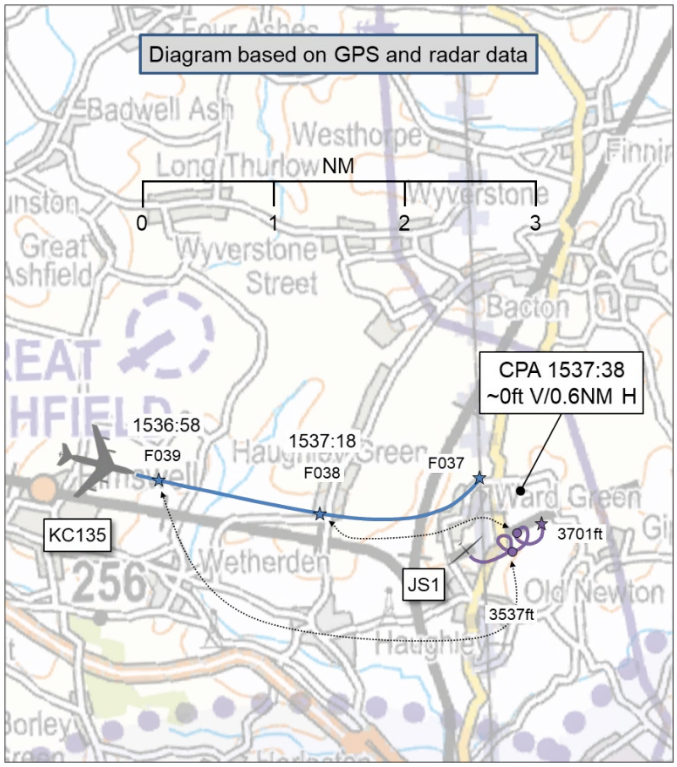
AIRPROX REPORT No 2025147

Date: 28 Jun 2025 Time: 1538Z Position: 5214N 00100E Location: 3NM N Stowmarket

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	KC135	JS1
Operator	Foreign Mil	Civ Gld
Airspace	London FIR	London FIR
Class	G	G
Rules	IFR	VFR
Service	Traffic	None
Provider	Lakenheath Appr.	N/A
Altitude/FL	FL037	3701ft[1]
Transponder	A, C, S	A, C, S
Reported		
Colours	Grey	White
Lighting	Nav, anti-col	Canopy flash
Conditions	VMC	VMC
Visibility	>10km	<5km
Altitude/FL	3800ft	3800ft
Altimeter	QNH	QFE
Heading	100°	"*Thermalling*"
Speed	280kt	50kt
ACAS/TAS	TCAS II	PowerFLARM
Alert	RA	None
Separation at CPA		
Reported	0ft V/0.1NM H	200ft V/0.5NM H
Recorded	~0ft V/0.6NM H	



THE KC135 PILOT reports that, whilst in the published hold at TUSMU for Mildenhall ILS RW28, they were headed eastbound about half-way through their leg (holding) when a large white glider was observed co-altitude headed in the opposite direction. At that point, nothing showed on TCAS as they would expect if an aircraft was carrying a transponder. The glider was seen to start a hard left-hand-turn, going belly-up to them towards the south. They disengaged the autopilot immediately and started a left-hand turn towards the north. Immediately afterwards, a Resolution Advisory was triggered directing them to climb, to which they complied. They were surprised that they received an RA after the turn and suspect that the glider pilot may have turned the transponder on in response to seeing them. Once turned to the north, they got the 'all-clear' from TCAS. They informed ATC who said that specific traffic was not visible on their scope. [The pilot of the KC135] had been getting call-outs for several other low-altitude gliders but none of which matched that traffic location.

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

THE JS1 PILOT reports that they did see the KC135 but not until it had already commenced the turn. Prior to that, they had been in a continuous tight turn and climb in a thermal for about 4min starting at 2300ft. They made a thermal-centring move at 3600ft that would certainly have involved an amount of 'heads-in' and this would probably have coincided with the point at which the KC135 was closest in the holding pattern whilst heading towards them. Despite coming from the west at the level of the inversion layer with the sun behind it, [the pilot of the JS1 opined that] they really should have seen the KC135 earlier than they did and they offer their apologies for not doing so. They have spoken to around ten other glider pilots and powered-aircraft pilots from their club about the Airprox and none of them were aware of the RW28 holding pattern.

[1] Based on SPS.

[In response to communication from a representative from RAF Mildenhall, the pilot of the JS1 commented that] the offer to "*have further discussions on levels/areas that you may see* [military] *aircraft if you, or the club, are interested*" would be greatly appreciated by all the cross-country pilots at [their club] and, no doubt, by cross-country pilots at other local gliding clubs as well.

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

THE LAKENHEATH APPROACH CONTROLLER reports that they were providing a service to the pilot of a KC135 who was established in the hold for the ILS to RW28 at RAF Mildenhall. They had issued Traffic Information to the KC135 pilot on several targets which appeared to be light GA aircraft. Traffic Information was issued to the KC135 pilot in relation to gliders which were non-transponder equipped but had called for a Basic Service. That traffic reported north of Honington and was observed as primary tracks in the reported positions (although they were not formally identified). The KC135 pilot reported receiving a TCAS RA in response to a glider whilst eastbound. No primary or secondary radar returns were observed in the vicinity. They advised the KC135 pilot of their nearest traffic. The KC135 pilot turned north and then re-established for the procedure. The report was noted in the watch log but they were unable to assess the risk due to no targets being observed on radar. A few minutes later, a secondary-only target appeared on radar in the vicinity, southbound and at a similar level to the KC135.

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

Factual Background

The weather at RAF Wattisham was recorded as follows:

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METAR EGUW 281520Z AUTO 23013KT 9999 FEW044/// 28/17 Q1021
METAR EGUW 281550Z AUTO 23013KT 9999 FEW047/// 29/17 Q1021
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Analysis and Investigation

RAF Lakenheath RAPCON Chief Controller Investigation

The RAF Lakenheath RAPCON Chief Controller interviewed the Watch Supervisor and line controllers that were working during the times noted on the [incident reporting] form. The controller's workload was light with light complexity and the weather did not appear to have been a factor. The controller issued appropriate Traffic [Information] on a glider operating [from a nearby airfield] and provided control instructions to deconflict [the pilot of the KC135] from conducting their holding at TUSMU. The aircrew advised Air Traffic Control (ATC) while on a southerly downwind leg of the instrument holding pattern that they had received a TCAS Resolution Advisory (RA) and were turning to avoid a glider off their right wing.

In reviewing the radar playback tapes, there was never a primary-radar target for the Approach controller to have observed to indicate potentially conflicting traffic with [the KC135]. The RAPCON investigation was closed with a determination that no controllers were at fault. Data will be used to educate the local glider clubs on hazardous flying areas in conjunction with the Mid-Air Collision Avoidance (MACA) programme.

UKAB Secretariat

An analysis of the NATS radar replay was undertaken and the KC135 could be positively identified from Mode S data. A primary-only return was observed on the radar replay for several sweeps from 1528:56 which, by reference to GPS track data kindly supplied by the JS1 pilot, broadly correlated to the position of the JS1. Neither aircraft was observed by reference to ADS-B data sources.

During a holding pattern (the hold before the reported Airprox occurred) at 1529:48, the KC135 passed within 0.15NM horizontally and approximately 1400ft above the JS1 (Figure 2).

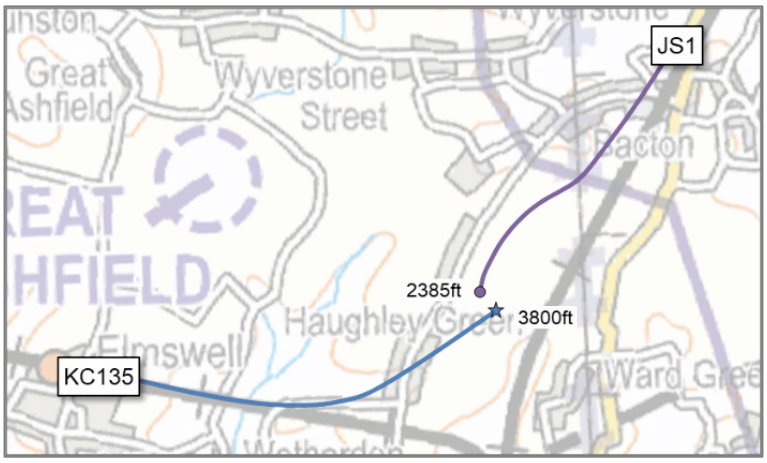


Figure 2 – 1529:48

No secondary-radar returns were observed from the JS1 until 1531:38, from which moment the JS1 could be positively identified from Mode S data (Figure 3).

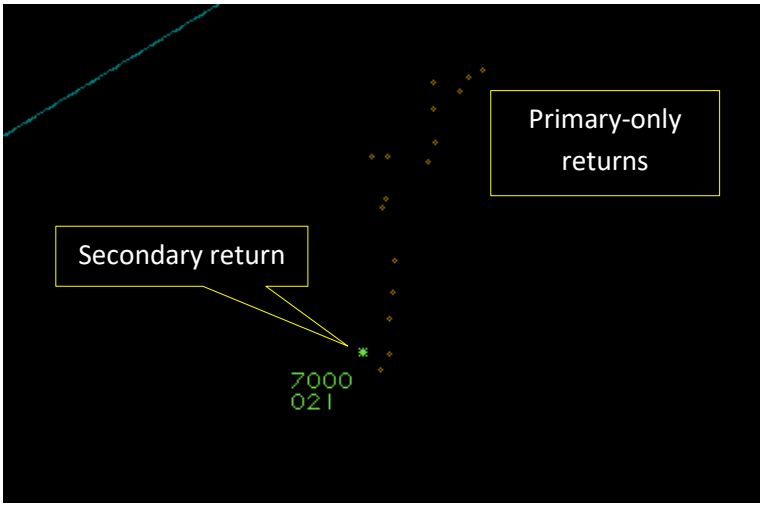


Figure 3 – The first secondary return from the JS1 appeared at 1531:38

The JS1 disappeared from the radar replay after a few sweeps and did not reappear until 1536:06 when it was observed sporadically for a few sweeps before disappearing again. The JS1 re-appeared at 1537:26 and persisted until CPA (Figure 4).

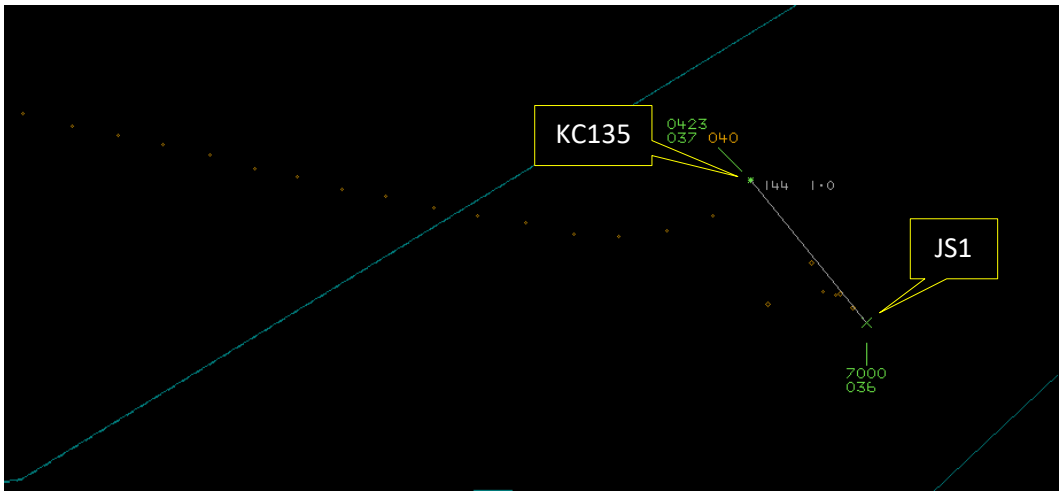


Figure 4 – CPA at 1537:38 (Mode C data)

The diagram was constructed and the CPA determined by combining the data sources. The separation between the aircraft was determined from the radar data for the KC135 and the GPS data for the JS1. The altitudes for both aircraft are shown in the diagram with reference to standard pressure.

The KC135 and JS1 pilots shared an equal responsibility for collision avoidance and not to operate in such proximity to other aircraft as to create a collision hazard.[2] If the incident geometry is considered as converging then the KC135 pilot was required to give way to the JS1.[3]

Comments

USAFE

The UKAB review has identified that these two aircraft passed in close proximity twice in an 8min period. The first (at 1529:48) apparently undetected by the KC135 crew. Although radar recordings of the events were extended to capture events either side of CPA, this first interaction falls just outside the recorded period. At the beginning of the recording (at 1530:17) the controller was recorded making the following transmission:

"[KC135 callsign] *you're past where the traffic was last observed, you can start your left turn to re-establish in the holding pattern*".

The timing and location correlate with the two aircraft passing for the first time and it appears that the controller had issued some deconfliction advice just prior to the recorded period. There was no PSR or SSR target displayed, which would indicate that the track had dropped.

Having been passed Traffic Information on several light GA aircraft in the area, the crew of the KC135 were actively looking out and operating TCAS to identify any potential conflictions. It is likely that this vigilance by the crew enabled then to sight the glider head-on, albeit late, and take an avoiding action turn. The crew did receive a TCAS 'Descend' alert during their turn, but this resolved in less than half a second.

The late sighting of the glider by the crew of the KC135, and the sighting of the KC135 after CPA by the pilot of the glider, demonstrates the limitations of see-and-avoid when other options are available to enhance the situational awareness of all.

Crews of aircraft transiting within 20NM of RAF Mildenhall are advised to seek an Air Traffic Service. RAF Lakenheath approach on 128.900MHz is available to provide an ATS to those that request it.

Use of EC equipment which is compatible with other traffic operating in areas in which a private pilot operates should be considered. A serviceable transponder provides significant advantages as it enables ATC to see aircraft positions and levels as well as enabling TCAS in aircraft so equipped.

USAF ATC and operators will continue to engage with local airspace users to enable sharing of understanding between operators.

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

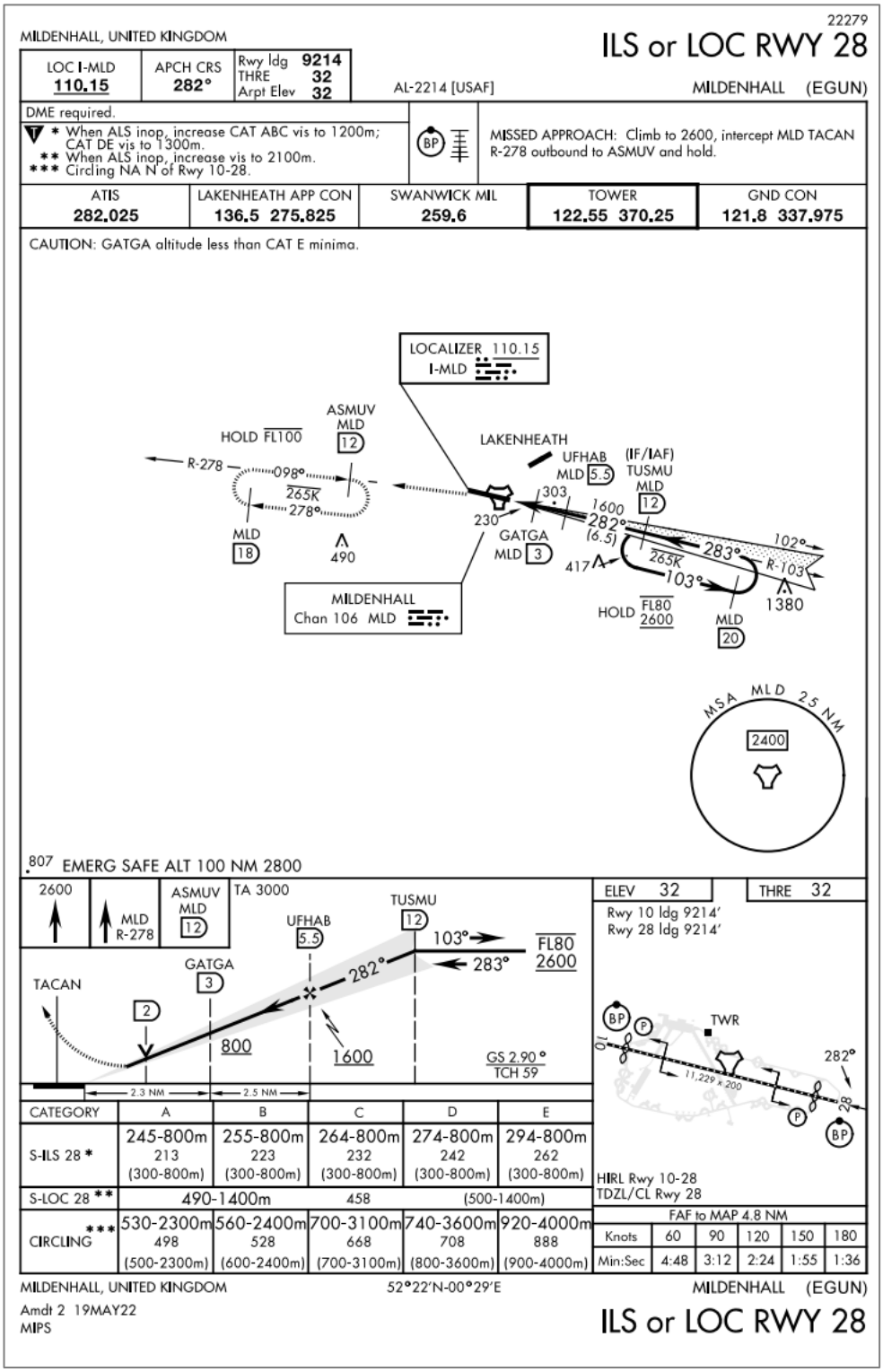


Figure 5 – The ILS/LOC approach to RAF Mildenhall RW28

BGA

At the time of this incident, no Instrument Approach Procedures for RAF Mildenhall (or nearby RAF Lakenheath) were publicly available via either the Civil or Military AIP. This denied non-military pilots the opportunity to plan routes that would avoid traffic using those procedures.

Summary

An Airprox was reported when a KC135 and a JS1 flew into proximity 3NM north of Stowmarket at 1538Z on Saturday 28th June 2025. The KC135 pilot was operating under IFR in VMC in receipt of a

Traffic Service from Lakenheath Approach, and the JS1 pilot was operating under VFR in VMC not in receipt of a FIS.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of reports from both pilots, GPS track data for the flight of the JS1, a report from the air traffic controller involved, radar photographs/video recordings and a report from the appropriate operating authority. 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 pilot of the KC135. An advisor with particular knowledge of USAFE operations explained that, after a review of the events leading up to the Airprox, it had been apparent that the Lakenheath controller had passed some information at 1530:17 to the KC135 pilot regarding previously observed traffic near their position. A review of the NATS radar replay had appeared to show primary-only returns in that area which broadly correlated to the GPS track data for the JS1. Further details of the traffic as observed by the Lakenheath controller had not been available and, from their perspective, it could not be ascertained whether the information had pertained to the JS1 or a different aircraft. Notwithstanding, members noted that the KC135 pilot had been established in the hold for Mildenhall RW28 and, when near the end of the downwind leg of the hold for a second time, had sighted the JS1 co-altitude. Members agreed that acknowledgment of the previously mentioned traffic several minutes earlier had 'become stale' and had not amounted to situational awareness of the JS1 that had appeared in front of them (**CF3**). Members agreed that the TCAS equipment fitted to the KC135 had provided a Resolution Advisory (**CF5**) but had not alerted to the presence of the JS1 as early as might have been expected (**CF4**). Indeed, it had not triggered until after the KC135 pilot had already taken avoiding action. Members appreciated that the KC135 pilot had been concerned by the proximity of the JS1 (**CF8**) but noted that the avoiding manoeuvre had been fully effective in increasing the separation between the aircraft.

Turning their attention to the actions of the pilot of the JS1, members noted that they had possessed a FRTOL and that the JS1 had been fitted with a radio and a transponder. It was therefore agreed that it may have been prudent for the JS1 pilot to have contacted the appropriate ATSU to have relayed their intentions for the benefit of the controller and other pilots in the area (**CF2**). Indeed, they may also have gleaned situational awareness of traffic along their route, such as the KC135 in this case.

Members considered the situation at 1529:48, when the KC135 had passed within 0.15NM of the JS1 (albeit 1400ft above it). The JS1 had been observed on the NATS radar replay as a primary-only target at that time. However, approximately 2min later, secondary radar returns were observed. It was not clear to members whether the transponder fitted to the JS1 had been operated continuously throughout the period or had been switched on in response to the JS1 pilot observing nearby military traffic. Whilst that could not be determined, it was clear to members that the secondary returns had been sporadic on the NATS radar replay and no primary or secondary returns had been observed on the Lakenheath radar display.

Members noted that the EC device fitted to the JS1 may have detected the emissions from the KC135's transponder and provided a non-directional proximity warning. However, members agreed that such an alert had not triggered as expected (**CF6**), and that the JS1 pilot had not had situational awareness of the KC135 (**CF3**). It was further agreed that the JS1 pilot had not sighted the KC135 until the approximate moment of CPA and that that effectively constituted a non-sighting (**CF7**).

Members next considered the actions of the Lakenheath controller. Members noted that, notwithstanding the traffic observed in a similar location several minutes before CPA, they had not observed any primary or secondary returns on the radar display that had correlated to the position of the JS1. Members acknowledged that the STCA in use at the Lakenheath position had been configured to include the squawk code 7000, and, therefore, without radar returns from the JS1 with which to detect a potential conflict with the KC135, the Electronic Warning Systems safety barrier had not been present in this scenario. Members agreed that the Lakenheath controller had not had situational awareness of

the presence of the JS1 (**CF1**) and that there had been little else that they could have done to have assisted matters.

Members concluded their discussion and were heartened to learn that the approach plate for RW28 at Mildenhall (Figure 5), as well as other approach plates, are to become available on the UK military AIP website.[4] The matter of the risk of collision was considered, and some members proffered that the sighting of the JS1 by the KC135 pilot had been early enough that effective avoiding action had been taken and that there had not been a reduction of normal safety margins for an encounter in Class G airspace. Other members pointed out that several safety barriers had either not been present or had not been fully effective. A vote was conducted and the latter view, that normal safety parameters had been eroded, prevailed. Notwithstanding, members were satisfied that there had not been a risk of collision and assigned Risk Category C to this event.

PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK

Contributory Factors:

	2025147			
CF	**Factor**	**Description**	**ECCAIRS Amplification**	**UKAB Amplification**
	Ground Elements			
	• Situational Awareness and Action			
1	Contextual	• Traffic Management Information Action	An event involving traffic management information actions	The ground element had only generic, late, no or inaccurate Situational Awareness
	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	Technical	• ACAS/TCAS Nuisance Alarm	An event involving a nuisance alarm from the aircraft's airborne collision avoidance system or traffic alert and collision avoidance system.	CWS alerted spuriously or not as expected
5	Contextual	• ACAS/TCAS RA	An event involving a genuine airborne collision avoidance system/traffic alert and collision avoidance system resolution advisory warning triggered	
6	Human Factors	• Response to Warning System	An event involving the incorrect response of flight crew following the operation of an aircraft warning system	CWS misinterpreted, not optimally actioned or CWS alert expected but none reported
	• See and Avoid			
7	Human Factors	• Monitoring of Other Aircraft	Events involving flight crew not fully monitoring another aircraft	Non-sighting or effectively a non-sighting by one or both pilots
8	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.

[4] https://www.aidu.mod.uk/aip/

Safety Barrier Assessment[5]

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

Ground Elements:

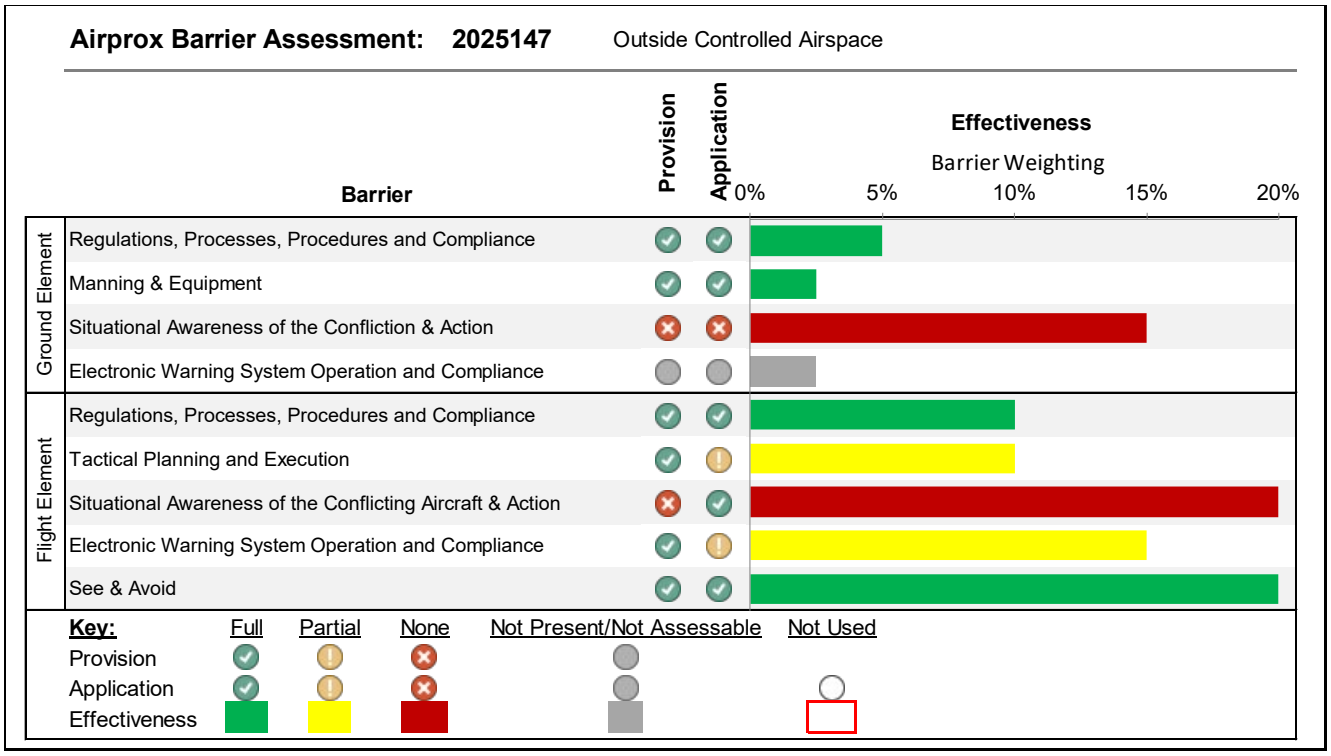
Situational Awareness of the Confliction and Action were assessed as **ineffective** because the Lakenheath Approach controller had not had situational awareness of the JS1.

Flight Elements:

Tactical Planning and Execution was assessed as **partially effective** because it may have been prudent for the pilot of the JS1 to have contacted the Lakenheath controller.

Situational Awareness of the Conflicting Aircraft and Action were assessed as **ineffective** because neither pilot had situational awareness of the presence of the other aircraft.

Electronic Warning System Operation and Compliance were assessed as **partially effective** because the TCAS equipment fitted to the KC135 had provided a Resolution Advisory later than would have been expected.



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