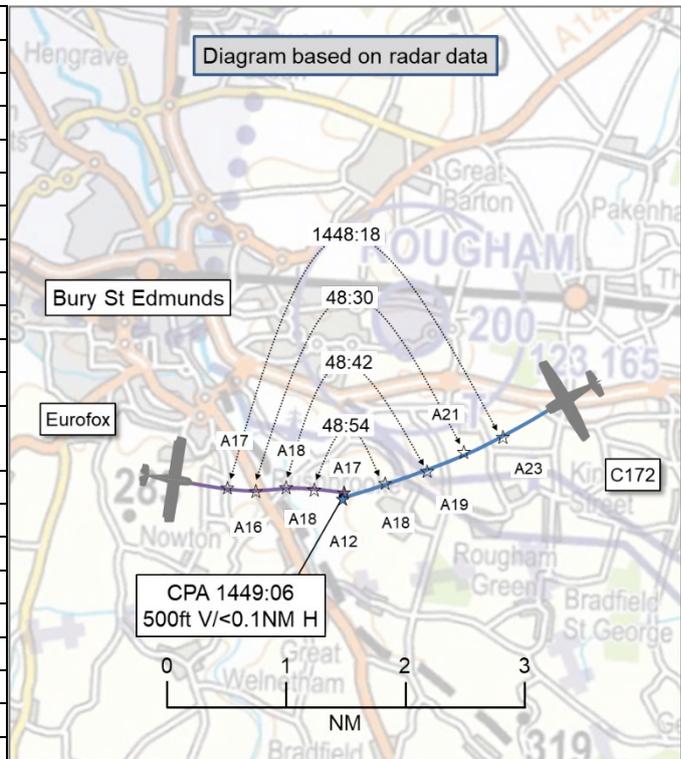


AIRPROX REPORT No 2022176

Date: 13 Aug 2022 Time: 1449Z Position: 5213N 00045E Location: IVO Bury St Edmunds

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	C172	Eurofox
Operator	Civ FW	Civ FW
Airspace	London FIR	London FIR
Class	G	G
Rules	VFR	VFR
Service	Basic	None
Provider	Lakenheath	N/A
Altitude/FL	1200ft	1700ft
Transponder	A, C, S	A, C, S
Reported		
Colours	White, blue	Yellow
Lighting	Strobes, landing beacon	Strobes, landing beacon
Conditions	VMC	NK
Visibility	>10km	NK
Altitude/FL	~3200ft	NK
Altimeter	QNH (1014hPa)	NK (NK hPa)
Heading	245°	NK
Speed	~110kt	NK
ACAS/TAS	Not fitted	SkyEcho
Alert	N/A	None
Separation at CPA		
Reported	~50ft V/~500ft H	Below and just behind
Recorded	500ft V/<0.1NM H	



THE C172 PILOT reports conducting a sight-seeing pleasure flight, on the leg from Eye disused airfield towards the southern tip of Bury St Edmunds. They were familiar with the local flying area and with the specific aircraft, which they had flown on many previous occasions (including around three weeks before). They had flown on several occasions in late July 2022 with several instructors, and considered themselves current on the aircraft. They had called Lakenheath Approach when just west of Eye and were in receipt of a Basic Service. They did not hear much other traffic on the radio to Lakenheath Approach, although they did hear another [pilot] told by the controller to squawk 0452 but did not know whether this was the Airprox aircraft or not. About a couple of minutes before the Airprox, they had started a gradual planned descent, from around 4700ft, so that they could see Ickworth House. Their intention was to have Ickworth House pass under the right wing, so that the passenger (sitting in the right seat) could see it. Since the descent was intentionally gradual, the nose of the aircraft was still roughly level and was not pointing significantly down; they had just slightly reduced power to achieve the gradual descent. Visibility was good, although it was more hazy flying in a westerly direction than it had been earlier in the flight when heading east, and the sky was quite bright. Having told the passenger of their plan to slowly descend and fly near to Ickworth House, the passenger was looking out of the window to the right, and they were not engaged in any conversation at the time. They were flying visually towards the southern tip of Bury St. Edmunds (on the left hand side of the town as they approached it) when, as part of their lookout scan, they noticed another aircraft at approximately the same altitude or perhaps slightly higher, heading towards them (i.e. the other aircraft was heading approximately east), possibly around half a mile away. They immediately pulled the power to idle, pushed the nose down, and began an emergency descent on the same heading. They did not feel they should climb, because they were already on a gradual descent and perceived the other aircraft to be slightly above. They did not feel they should have turned right to avoid a collision, because they perceived the other aircraft to be slightly to the right. They estimated that if they had not taken avoiding action, the other aircraft would

have passed very slightly to the right and very slightly above. They did not notice the other aircraft take any kind of avoiding action, and did not notice it changing its heading or altitude. They saw nothing that would indicate that the other [pilot] was aware of their presence. Although they were in receipt of a Basic Service from Lakenheath, they did not hear the Lakenheath controller warn them or any other aircraft of traffic or an impending Airprox. They considered whether to mention the Airprox to the controller, but their workload became high, having to recover the aircraft to a safe cruising height and airspeed, ensure they remained on course and explain to the passenger what had happened. They were also mindful that since they had already had one Airprox, there could be other aircraft in the vicinity that also needed to be seen and for which they had not heard a warning, so they did not want to risk getting involved in a discussion with a controller that could distract them.

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

THE EUROFOX PILOT did not submit an Airprox reporting form but provided the following narrative: They saw a number of planes in the sky during a weekend outing to a fly-in at Old Warden. The incident appeared to have happened later in the day, when they were flying from Old Warden to [home airfield]. During the flight they did not have a Basic Service or communicate with anyone until approaching [home airfield]. The TAS did not alert but they saw the C172 descending towards them in the 1-2 o'clock position, which passed 'below and just behind'.

THE LAKENHEATH APPROACH CONTROLLER reports that they were informed of an Airprox on 23 August 2022, but had no recollection of the event. They remembered multiple aircraft calling on that day, however nothing [which was] glaring or memorable.

Factual Background

The weather at Wattisham and Mildenhall was recorded as follows:

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METAR EGUW 131450Z AUTO 14011KT 9999 NCD 31/06 Q1014=
METAR EGUN 131456Z 14010KT 9999 FEW300 33/08 A2990 RMK A02A SLP128 T03290083 57017 $=
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Analysis and Investigation

UKAB Secretariat

The C172 and Eurofox 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 head-on or nearly so then both pilots were required to turn to the right.²

Provision of Traffic Information under a Basic Service is detailed in CAP774, Chapter 2, paragraphs 2.1 to 2.9. Paragraphs 2.7 to 2.9 state as follows:

2.7 A controller with access to surveillance-derived information shall avoid the routine provision of traffic information on specific aircraft but may use that information to provide a more detailed warning to the pilot.

2.8 If a controller/ FISO considers that a definite risk of collision exists, a warning shall be issued to the pilot (SERA.9005(b)(2) and GM1 SERA.9005(b)(2))

2.9 Whether traffic information has been provided or not, the pilot remains responsible for collision avoidance without assistance from the controller.

Lakenheath Occurrence Investigation

The RAPCON Chief Controller (CCTLR)/Assistant Chief Controller (ACCTLR) reviewed the events on 13 August from 1442Z to 1456Z. At 1442:20, the RAPCON controller made contact with [C172 C/S], a light fixed-wing aircraft 10 miles southeast of [Lakenheath]. The controller offered and the

¹ (UK) SERA.3205 Proximity.

² (UK) SERA.3210 Right-of-way (c)(1) Approaching head-on.

pilot agreed to a Basic Service with routing back to [destination]. At initial contact, [C172 C/S] was at an altitude of [4100ft]. [C172 C/S] gradually descended to an altitude of [3600ft] over the next 4min. At 1447:10Z, [C172 C/S] made a sharp descent to an altitude of [3000ft], while simultaneously the RAPCON controller was making radar contact with [another] aircraft, who was requesting MATZ penetration from north of [Lakenheath]. The RAPCON controller took approximately 40sec to identify and issue instructions to [the other aircraft], which took situational awareness away from [C172 C/S]. [C172 C/S] made no effort to inform the RAPCON controller that they were going to descend quickly; at this moment, we feel that good airmanship should have prevailed and the pilot should have considered announcing their intention to descend, to the controller. At 1448:20, [C172 C/S] was at an altitude of [2200ft] and descending, roughly 1 mile from [Eurofox C/S] (not under RAPCON control), a light fixed-wing aircraft at an altitude of [1700ft]. The collision alarm went off, and [C172 C/S] continued its descent merging through the path of [Eurofox C/S] without any apparent deviation. The controller did not issue Traffic Information. The pilot did not report any Airprox on frequency.

A track showing [Eurofox C/S] was observed on the radar recording to be tracking outside and along the southern CMATZ boundary less than 1 mile outside in a consistent easterly direction, level consistently indicating [1700ft]. No deviation was observed as the two tracks merged.

As the facility manager, it is our stance the duty of care goes both ways in the aviation community, pilot and controller. It is our understanding that the controller had no obligation to monitor the progress of the flight or issue regular Traffic Information and the pilot, in agreeing to the Basic Service, accepted the limitations. Under a Basic Service, the avoidance of other traffic is solely the pilot's responsibility. The controller adhered to the responsibility of Basic Service, but made no effort to issue the Traffic Information between [C172 C/S] and other aircraft not receiving any ATS.

The RAPCON controller had other transmissions, which took situational awareness away from the Basic Service aircraft, [C172 C/S]. The controller prioritised their workload towards the other aircraft calling for ATS and was working under the understanding of Basic Service IAW CAP 774 2.1 and 2.9. We do not believe the controller was over saturated workload wise, but do identify there were other operations taking place at the time. We believe [C172 C/S] was able to hear the RAPCON controller speaking to other aircraft and in the spirit of airmanship, could have advised the controller of their descent, which may have alerted the controller to the developing situation(s).

On speaking to the controller they had no memory of the reported incident. We have shown them the recordings and remedial training has occurred with this controller for all of CAP 774 and more specially chapter 2 with specific consideration of para 2.8. Finally, the controller involved has conducted training with the entire facility on the importance of CAP 774, chapter 2.

Summary

An Airprox was reported when a C172 and a Eurofox flew into proximity near Bury St Edmunds at 1449Z on Saturday 13th August 2022. Both pilots were operating under VFR in VMC, the C172 pilot in receipt of a Basic Service from Lakenheath Approach and the Eurofox pilot not in receipt of a FIS.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of reports from both pilots, radar photographs/video recordings, a report from the air traffic controller 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.

Members first discussed the pilots' response to the Airprox and expressed their disappointment at the paucity of information provided by the Eurofox pilot. The Board reiterated that although final reports contained the Board's opinions, there was no liability or licencing action associated with the Airprox process. The sole purpose of the Airprox Board was to improve safety of flight in the UK FIR, for all members of the aviation community, and that could only be achieved effectively by their full participation.

The C172 pilot had been in receipt of a Basic Service but, without any form of electronic conspicuity equipment, they had been reliant to a large degree upon surveillance-based information for their situational awareness. Under a Basic Service, the Lakenheath controller had no responsibility to pass Traffic Information 'routinely' (CF1) but was required to do so if they considered that a 'definite risk of collision' existed. In the event, no Traffic Information had been passed and the C172 pilot had had no situational awareness on the approaching Eurofox (CF7). Equally, the Eurofox pilot, not in receipt of a surveillance based FIS and without a warning from their TAS (CF8), had had no situational awareness on the approaching C172 (CF7), leaving see-and-avoid as the last barrier to mid-air collision. Members felt that the Eurofox pilot would have been much better advised to have obtained a FIS (CF6) because it afforded at least the opportunity to 'back-plot' other pilots' routing and levels with a commensurate increase in situational awareness. The USAFE advisor briefed the Board on some of the factors associated with the provision of a Basic Service by Lakenheath controllers. Of note, it was USAFE policy that the surveillance Short Term Conflict Alert (STCA)³ system be on and capable of alerting at all times. In this case the STCA had alerted on the 2 Airprox aircraft (CF5) but Traffic Information had not been passed to the C172 pilot (CF2). The Board did not have sufficient information directly to analyse the controller's workload but noted that the Lakenheath controller had been in communication with another pilot until about 1448:00; the Airprox STCA had alerted at 1448:20; CPA had occurred at 1449:06 and another pilot had called at 1449:07. The Board therefore endorsed the Lakenheath Investigation finding that the controller had likely not been 'over saturated workload wise' in the period immediately before CPA and that Traffic Information could have been passed (CF4). However, the controller had reported not recalling the Airprox (CF3) and the Board discussed Lakenheath's use of STCA at length. It was noted that USAFE appeared to be unique amongst UK-based ANSPs in enabling STCA for traffic operating at low levels and under VFR. Other ANSPs did not adhere to such a policy because the frequency of alerting was often such that it reduced controllers' ability to provide Traffic Information to all traffic under a service and could cause controllers to become desensitised to an STCA alert, thereby reducing the effectiveness of a Traffic or Deconfliction Service, where the provision of Traffic Information was a required facet of the service. Members could not ascertain an explicable reason for the controller not passing Traffic Information and wondered whether this controller had become desensitised to a degree. After further discussion, the Board resolved to recommend that, 'Lakenheath ATSU reviews its employment of STCA in support of UK FIS with regard to the potential for controller desensitisation'. In addition, as part of the wide-ranging discussion, it was noted that USAFE controllers arriving on posting to the UK used to undergo a course of training in UK FIS at what is now named the Defence College of Air and Space Operations at RAF Shawbury. It was noted that this no longer occurred and that USAFE controllers were now trained 'in-house' at RAF Lakenheath. This prompted the CAA airspace advisor to question to what degree MoD could now deliver assurance that the provision of ATS in UK airspace by USAFE personnel was appropriate and safe. The Board agreed and Director UKAB resolved to write to the MAA to obtain a resolution to that question.

Returning to the Airprox event, members discussed the risk of collision. From the narrative provided, it was not possible to state definitively whether the Eurofox pilot had seen the C172 in time to take action but it was certain that the C172 pilot had seen the Eurofox at sufficient range that, within 12sec of being at the same level, their emergency avoiding action had generated a vertical separation of 500ft at CPA. The Board commended the C172 pilot on their actions, which had resolved the conflict and, despite their well-founded concern at the proximity of the other aircraft (CF9), had removed the risk of mid-air collision, Risk C.

PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK

Contributory Factors:

	2022176			
CF	Factor	Description	ECCAIRS Amplification	UKAB Amplification
	Ground Elements			
	• Situational Awareness and Action			

³ <https://www.skybrary.aero/articles/short-term-conflict-alert-stca>

1	Contextual	• ANS Flight Information Provision	Provision of ANS flight information	The ATCO/FISO was not required to monitor the flight under a Basic Service
2	Human Factors	• ANS Traffic Information Provision	Provision of ANS traffic information	TI not provided, inaccurate, inadequate, or late
3	Human Factors	• Conflict Detection - Not Detected	An event involving Air Navigation Services conflict not being detected.	
• Electronic Warning System Operation and Compliance				
4	Human Factors	• ATM personnel operation/interpretation of equipment	An event involving the operation or interpretation of ATM equipment by ATM personnel	Controller did not adequately act on the EWS indications
5	Technical	• STCA Warning	An event involving the triggering of a Short Term Conflict Alert (STCA) Warning	
Flight Elements				
• Tactical Planning and Execution				
6	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				
7	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				
8	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				
9	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.

Recommendation: Lakenheath ATSU reviews its employment of STCA in support of UK FIS with regard to the potential for controller desensitisation.

Safety Barrier Assessment⁴

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 Traffic Information was not passed to the C172 pilot.

Electronic Warning System Operation and Compliance were assessed as **ineffective** because the STCA alert was not acted upon.

Flight Elements:

Tactical Planning and Execution was assessed as **partially effective** because the Eurofox pilot did not obtain a FIS.

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

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

Electronic Warning System Operation and Compliance were assessed as **ineffective** because the Eurofox TAS did not alert when it could have been expected to do so.

Airprox Barrier Assessment: 2022176		Outside Controlled Airspace						
Barrier		Provision	Application	Effectiveness				
				Barrier Weighting				
				0%	5%	10%	15%	20%
Ground Element	Regulations, Processes, Procedures and Compliance	✓	✓					
	Manning & Equipment	✓	✓					
	Situational Awareness of the Confliction & Action	✓	✗					
	Electronic Warning System Operation and Compliance	✓	✗					
Flight Element	Regulations, Processes, Procedures and Compliance	✓	✓					
	Tactical Planning and Execution	✓	!					
	Situational Awareness of the Conflicting Aircraft & Action	✗	✓					
	Electronic Warning System Operation and Compliance	!	✗					
	See & Avoid	✓	✓					
Key:		Full	Partial	None	Not Present/Not Assessable	Not Used		
Provision	✓	!	✗	●	○			
Application	✓	!	✗	●	○			
Effectiveness								