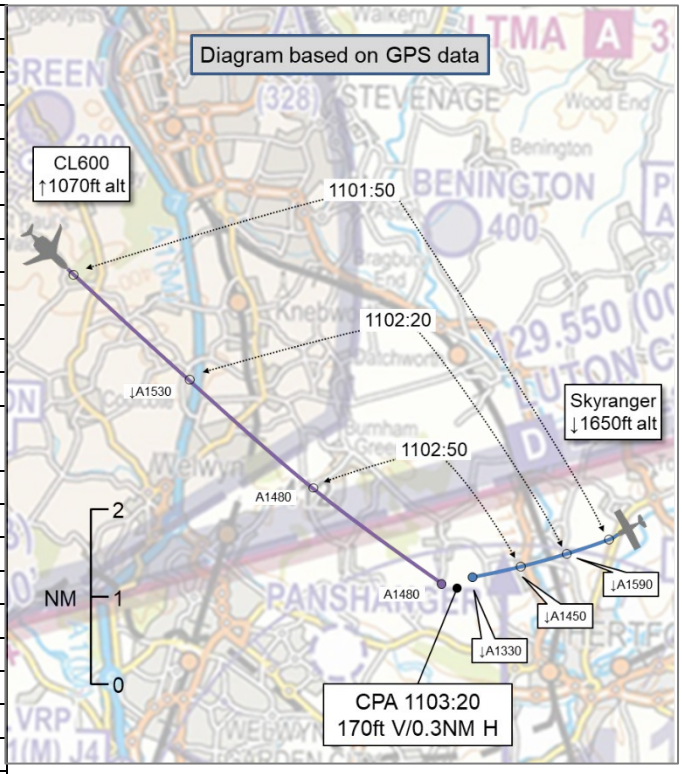
AIRPROX REPORT No 2022029

Date: 15 Mar 2022 Time: 1103Z Position: 5149N 00007W Location: 1.5NM NW Hertford

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	Skyranger	CL600
Operator	Civ FW	Foreign Mil
Airspace	London FIR	London FIR
Class	G	G
Rules	VFR	VFR
Service	Listening Out	None[1]
Provider	SafetyCom	Nil
Altitude/FL	1650ft	1480ft
Transponder	Not fitted	A, C, S
Reported		
Colours	White	Blue
Lighting	None	Anti-cols, Beacon, pulsing landing
Conditions	VMC	VMC
Visibility	>10km	>10km
Altitude/FL	1654ft	NK
Altimeter	QNH (1022hPa)	NK
Heading	225°	NK
Speed	65kt	220kt
ACAS/TAS	PilotAware	TCAS II
Alert	Information	TA[2]
Separation at CPA		
Reported	150ft V/0.2NM H	500ft V/NK H
Recorded	175ft V/0.3NM H	



THE SKYRANGER PILOT reports that their flight was from [departure] airfield to [destination] airfield in a Skyranger microlight, with no transponder, with their radio tuned to SafetyCom, 135.480MHz, as it is the frequency for the departing and arrival airfield. Navigation was aided by Skydemon and [EC equipment]. They departed at **1053** and followed the low-level (sub 1000ft) corridor out of [departure airfield following local procedures]. Once clear, they climbed gently to approximately 1600ft. The conditions were good and there were a number of aircraft in the area, seen visually, and also on the [EC equipment] overlay on their Skydemon tablet. Both themself and their passenger were actively looking for aircraft. At **1103** they glanced at the tablet and noticed a jet symbol in red on [EC equipment] to their starboard side on a converging course at 90°. They immediately looked to starboard and saw the jet approaching at speed and watched it pass directly in-front of and below them. There was no time to take evasive action other than a slight lift of the nose as the closing speed was very high (150kts+ [they estimate]) The jet continued on its path without deviation. They estimate they were 150ft vertically separated. They believe the jet pilot did not see them. After the incident, the next day, they downloaded the [EC equipment] file and screen data shows separation horizontally as 0.2NM and 146ft vertically. The area is a very busy flying area but it is extremely unusual to see jet aircraft at speed at such a low altitude.

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

[1] The CL600 pilot had been under a Traffic Service from Luton Approach and had reported visual with the Skyranger after receiving Traffic Information relating to it however, they had been in the process of establishing contact with Stanstead at the time of the Airprox.

[2] Although the pilot reports that there had been a number of TAs generated it cannot be confirmed whether any had been in relation to the Skyranger microlight.

THE CL600 PILOT reports that they are unsure of which aircraft the Airprox was with as they responded to multiple traffic calls and multiple TCAS advisories this day in the course of [their flight]. They visually acquired every traffic conflict that was or was not called or displayed on the TCAS to ensure safe separation.

The pilot assessed the risk of collision as 'None'.

THE LUTON INT CONTROLLER reports that they have no recollection of the event and that no Airprox was reported on frequency.

Factual Background

The weather at Luton was recorded as follows:

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METAR EGGW 151050Z AUTO 14009KT 110V180 9999 NCD 13/06 Q1021
METAR EGGW 151120Z AUTO 14007KT 100V180 9999 NCD 13/06 Q1021
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Analysis and Investigation

NATS Safety Investigations.

UKAB notified Safety Investigations of a pilot reported Airprox between [a Skyranger microlight], non-transponding on the SafetyCom frequency to the west of Hertford, [and a CL600] on the Luton Approach frequency. Both aircraft were outside controlled airspace. The Luton INT controller had previously provided Traffic Information to the pilot of [the CL600] who responded they were visual with the aircraft.

Information available to the investigation included:

- CA4114 from The Luton Intermediate Director.
- Redacted Airprox report from pilot of [the Skyranger].
- Redacted Airprox report from pilot of [the CL600]
- Radar and R/T recordings

[The CL600 pilot] was outbound from [departure airfield] and was displayed on radar. The pilot was receiving a Traffic Service from the Terminal Control Luton Intermediate Director (GW INT) outside controlled airspace. [The CL600 pilot] required a transit of the Luton CTR at altitude 1000ft, and a stop on Luton departures had been co-ordinated with Luton Tower to facilitate. The GW INT controller informed the pilot of [the CL600] of this co-ordination and subsequently provided a Radar Control Service at **1059:57** as the flight entered the Luton CTR.

At **1101:43**, the pilot of [the CL600] stated that they required climb to altitude 1500ft within the Luton CTR. This was acknowledged by the GW INT controller. The GW INT controller subsequently informed the pilot of [the CL600] that they would be exiting controlled airspace in approximately 3NM and requested what type of service they required. The pilot responded that they required a Traffic Service. A *"Traffic Service in two miles"* was agreed at **1102:19**.

The GW INT controller had an R/T discussion with an unrelated aircraft and following this, at **1102:56**, provided the pilot of [the CL600] Traffic Information of *"traffic left eleven o'clock, two miles left-to-right, no height information."* The pilot of [the CL600] responded *"looking",* followed by a further transmission of *"we have traffic in sight, no factor"* at **1103:05** (see Figure 1).

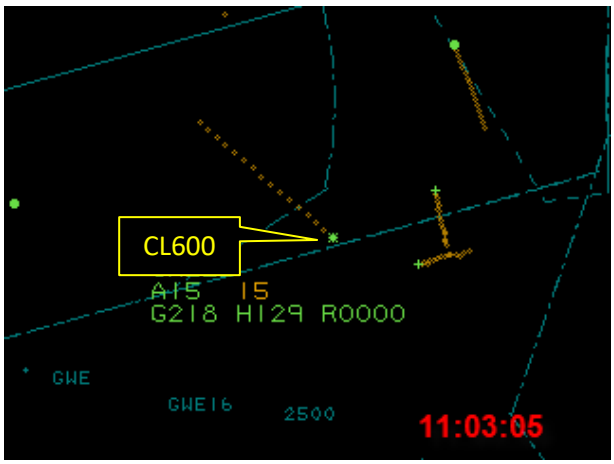

Figure 1

CAP774 Traffic Service 3.5 states '*The controller shall pass Traffic Information on relevant traffic, and shall update the Traffic Information if it continues to constitute a definite hazard, or if requested by the pilot. However, high controller workload and RTF loading may reduce the ability of the controller to pass Traffic Information, and the timeliness of such information*.'

[The CL600 pilot] was transferred to the Stansted Approach frequency at **1103:18**.

The closest point of approach between [the CL600] and the primary target occurred at **1103:26** with a lateral distance of 0.2NM, 3.9NM bearing 351° from position BPK (see Figure 2).

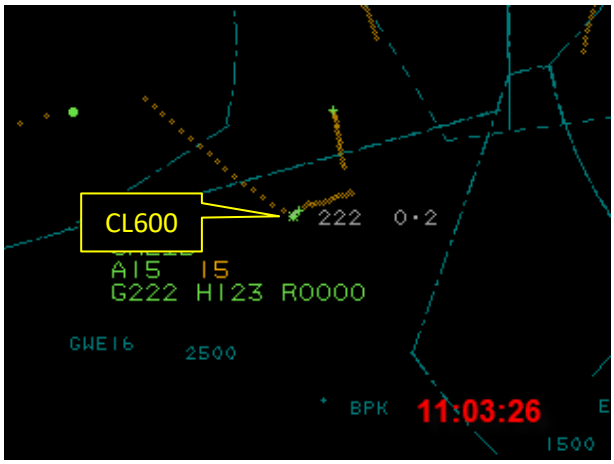

Figure 2

[The pilot of the CL600] contacted the Stansted Approach frequency at **1103:52**, and was provided with a reduced Traffic Service, which was accepted by the pilot. No report of an interaction with another aircraft was transmitted on this frequency.

The Airprox report from the pilot of [the CL600] stated that they were "unsure of which aircraft this was, as they responded to multiple traffic calls and multiple TCAS advisories this day in the course [their flight]. They visually acquired every traffic conflict that was or was not called or displayed on the TCAS to ensure safe separation." The report provided no precise vertical or lateral measurements in relation to this incident but stated the position of the aircraft was 'visual off nose' with a vertical separation of 500ft.

The Airprox occurred after the GW INT controller transferred [the CL600 pilot] to the Stansted Approach frequency, however accurate Traffic Information was previously passed to the pilot of [the CL600] based on a primary only target. The pilot reported that they were visual with this traffic.

Closest Point of Approach occurred at **1103:26** and was recorded on Multi-Track Radar as 0.2NM. Vertical distance could not be ascertained as [the Skyranger] was not transponder equipped.

The incident was resolved by the relative trajectories of both aircraft. The pilot of [the Skyranger] stated that the 'closing speed of aircraft gave no time to take avoiding action.' The pilot of [the CL600] however stated they were visual with the aircraft and that it was "no factor" and they ensured safe separation.

UKAB Secretariat

GPS data files had been obtained relating to the flight profiles of both the CL600 and the Skyranger. The GPS data included altitude data and this has been used to construct the diagram above and determine CPA.

The Skyranger microlight and CL600 pilots shared an equal responsibility for collision avoidance and not to operate in such proximity to other aircraft as to create a collision hazard.[3] If the incident geometry is considered as converging then the Skyranger pilot was required to give way to the CL600.[4]

Summary

An Airprox was reported when a Skyranger microlight and a CL600 flew into proximity 1.5NM NW Hertford at 1103Z Tuesday 15th March 2022. Both pilots were operating under VFR in VMC, the CL600 pilot in receipt of a Traffic Service from Luton Approach and the Skyranger pilot was not in receipt of an ATS.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of reports from both pilots, radar photographs/video recordings, GPS data files, 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 discussed this event and were satisfied that there had been no risk of collision. Members were encouraged that the pilots of both of the aircraft had carried EC equipment although noted that the effectiveness of these systems relies on other aircraft having compatible equipment. Members then discussed the use of SafetyCom and agreed that, when a pilot's routing involves an enroute element, there are often more appropriate RT services available. Members' focus then turned to whether or not there had been a degradation in safety and it was agreed that normal safety standards and parameters had pertained and, as such, the Board assigned Risk Category E.

Members agreed on the following contributory factors:

CF1. Although Luton approach had had an electronic warning system available, the aircraft had been outside of the select frame for the system.

CF2. Utilising an alternative ATS may have been of benefit to the Skyranger pilot.

CF3. The Skyranger pilot had had no prior awareness of the presence of the CL600 prior to becoming visual with it.

CF4. The TCAS carried on the CL600 had been incompatible with the Skyranger as it had not been transponder equipped.

CF5. The EC equipment carried on the Skyranger had issued a genuine alert regarding the presence of the CL600.

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

CF6. The Skyranger pilot had become visual with the CL600 at a late stage.

CF7. Although the CL600 pilot had been visual with the Skyranger, the Skyranger pilot had become concerned by the proximity of the CL600.

PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK

Contributory Factors:

	2022029			
CF	**Factor**	**Description**	**ECCAIRS Amplification**	**UKAB Amplification**
	Ground Elements			
	• Electronic Warning System Operation and Compliance			
1	Technical	• Conflict Alert System Failure	Conflict Alert System did not function as expected	The Conflict Alert system did not function or was not utilised in this situation
	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 System Failure	An event involving the system which provides information to determine aircraft position and is primarily independent of ground installations	Incompatible CWS equipment
5	Contextual	• Other warning system operation	An event involving a genuine warning from an airborne system other than TCAS.	
	• See and Avoid			
6	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
7	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: E

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:

Electronic Warning System Operation and Compliance were assessed as **not used** because the aircraft involved had been outside of the select frame for the system.

Flight Elements:

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

Tactical Planning and Execution was assessed as **partially effective** because the Skyranger pilot may have benefited from monitoring or utilising a different ATS.

Situational Awareness of the Conflicting Aircraft and Action were assessed as **partially effective** because the Skyranger pilot had had only generic awareness of the presence of the CL600 from their EC device.