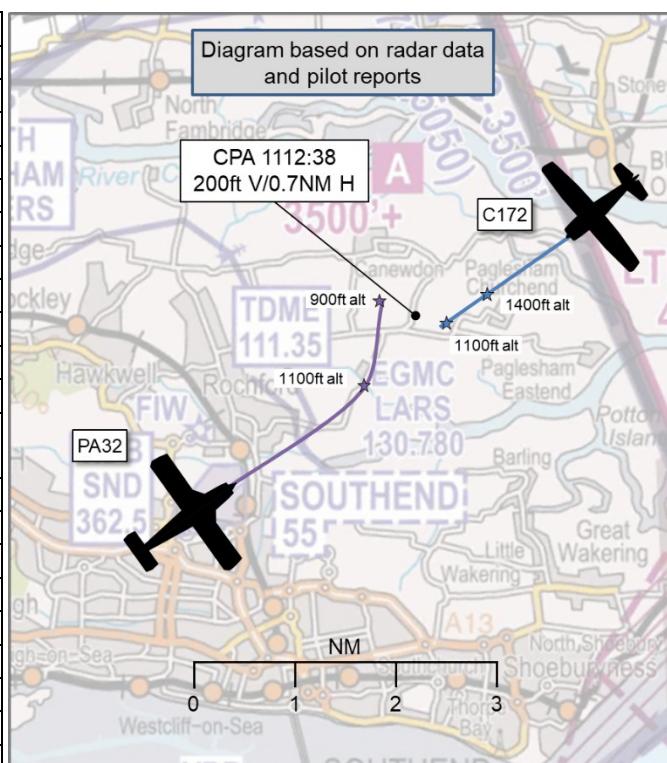


AIRPROX REPORT No 2021088

Date: 13 Jun 2021 Time: 1112Z Position: 5134N 00042E Location: Southend CTR

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	C172	PA32
Operator	Civ FW	Civ FW
Airspace	Southend CTR	Southend CTR
Class	D	D
Rules	IFR	VFR
Service	ACS	ACS
Provider	Southend	Southend
Altitude/FL	1100ft	900ft
Transponder	A, C, S	A, C, S
Reported		
Colours	White, Blue	Not reported
Lighting	Beacon, Strobe, Landing	Not reported
Conditions	VMC	VMC
Visibility	>10km	>10km
Altitude/FL		Not reported
Altimeter	QNH	NK
Heading	235°	Not reported
Speed	107kt	Not reported
ACAS/TAS	SkyEcho	Unknown
Alert	None	Unknown
Separation		
Reported	900ft V/4NM H	Not reported
Recorded	200ft V/0.7NM H	



THE SOUTHEND CONTROLLER reported that the PA32 was in the right-hand circuit for RW23 and the pilot reported downwind. The C172 was inbound on the ILS for RW23. The PA32 was observed to position from downwind to the Southend overhead, exceeding their circuit clearance height, they were asked to confirm if they were positioning downwind. The PA32 is then observed to fly NE up the final approach directly towards the C172 ILS traffic on final. The PA32 pilot was given instructions to turn away from final approach which they appeared not to adhere to. Both aircraft were considered to be very close to each other on the final approach. The controller considered this was an Airprox situation.

THE C172 PILOT reports that they are an IRI(A) and were conducting an IR(R) lesson with a student that is nearing completion on the IR(R) course. They had booked and were flying the ILS/DME/NDB(L) RW23 approach at Southend under the control of Southend Tower. They had flown a couple of holds, and were fully established on the localiser at 2000ft inbound, approaching 6D from the threshold and about to begin their descent when they became aware of R/T exchanges between Southend ATC and another aircraft that was not following instructions as ATC expected. They were aware that the other aircraft was not where it was supposed to be and were listening out. They were also looking out at the same time checking their student was maintaining the localiser, the student was under the foggles. At D6 they commenced their descent at about 500fpm and very shortly after they were contacted by Southend Tower and told they would see a PA32 passing right to left in front of them at a lower altitude. They saw it and reported "Traffic sighted" as the aircraft indeed flew in front of them some distance away and proceeded in a southerly direction. They continued with their approach and were cleared for a low-approach-and-go-around on RW23.

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

THE PA32 PILOT reports that they had pre-booked a touch-and-go circuit exercise to take place on Sunday the 13th of June 2021 through a colleague, who is a local resident to Southend airport, an

experienced pilot and was flying with them at the time. The touch-and-go was to take place at around 1100Z. They had established contact with Southend Approach and announced themselves for the arranged touch-and-go, part of the initial contact was to request joining instructions, which the controller gave with a right turn after take-off. Whilst in the climb and mid-downwind, at 800ft and still climbing before levelling, the controller 'yelled' that they were on an intercept course with another aircraft that had reported final, which neither of them heard or saw, and that it was at a close proximity to their position. The controller's call was abrupt and [they believed] sounded very nervous with no self-control, the way the controller spoke was in no way an experienced or helpful individual. Regardless, a left turn was initiated.

Factual Background

The weather at Southend was recorded as follows:

EGMC 131050Z 19005KT 100V260 CAVOK 23/12 Q1027

Analysis and Investigation

Southend Investigation Summary

Both aircraft were being provided with an Aerodrome Control Service and the PA32 pilot had received and correctly read back a circuit clearance. The reason the PA32 pilot turned towards the overhead is unknown. The Aerodrome ATCO was alert to the potential confliction and issued instructions to de-conflict the traffic. Traffic Information was passed to both parties. The C172 pilot reported visual with the PA32 at about 1NM range. At this point the PA32 pilot was complying with their instruction and turning away from the final approach track. The pilot of the PA32 did not comply with the ATC clearance on a number of occasions. Ultimately this resulted in the pilot flying a non-standard and potentially dangerous manoeuvre from the downwind position towards the overhead and then up final approach into conflict with traffic on the ILS approach. Due to the weather conditions and the sighting from the C172 pilot, the risk of collision was considered to be low.

CAA ATSI

The C172 was in the Southend hold in preparation for a procedural ILS to RW23. The PA32 pilot had been cleared to route from outside of the Southend CTR for a straight-in approach to RW23 VFR. Both aircraft were initially with Southend Director. The C172 pilot was cleared to commence the procedural ILS at 2500ft at 1059:00 and the PA32 pilot's level, previously restricted to a maximum of 2000ft was reduced to "not above" 1500ft. At 1101:58 the Southend Director advised the PA32 pilot that "there's a C172 leaving the Southend overhead, 2500ft to the northeast. He'll be descending to 2000ft". The PA32 pilot acknowledged the Traffic Information.

At 1102:15 the C172 pilot reported "beacon outbound" and confirmed that their intention after the approach was to return to [their base airfield] VFR. At 1103:12 the PA32 pilot was transferred to Southend Tower.

At 1103:38 the PA32 reported on the Tower frequency and was instructed to report "long final", which the pilot acknowledged, before then being passed their clearance into the circuit; "after departure, cleared into a right-hand circuit VFR, not above 1000ft" which was read-back by the pilot (omitting the flight rules). At 1103:42 the Southend Director passed Traffic Information on the PA32 to the C172 pilot which was acknowledged.

Having previously reported on long final and been instructed to continue their approach, the PA32 pilot was subsequently cleared for their touch-and-go at 1107:52.

The C172 pilot reported base-turn complete at 1108:54 and was transferred to the Tower controller at 1108:58. After initial contact with the Tower, the C172 pilot was instructed to continue their approach and was given the surface wind at 1109:12. At 1110:47, having completed a touch-and-go, the PA32 pilot was instructed to "report ready for base, traffic's a C172, 5 mile final". The PA32

pilot replied “er, we are ready for base – sorry, we’re early downwind now. We’ll report ready for base”. Then at 1111:18 the Tower controller asked the PA32 pilot “confirm in the right-hand circuit?”, to which the PA32 pilot replied “sorry, yes we’re doing a right-hand circuit” (Figure 1).

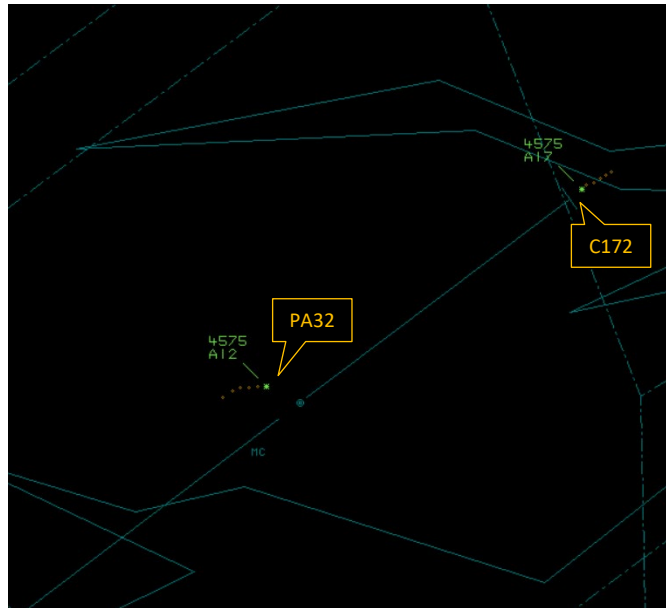


Figure 1 – 1111:18

The Tower controller went on to ask the PA32 pilot to “check your level – not above 1000ft” which was read-back correctly by the pilot. The controller instructed the C172 pilot to “continue approach, surface wind variable 3kts. Traffic’s a PA32 in the overhead, positioning downwind right-hand” which was acknowledged by the C172 pilot.

At 1111:48 the Tower controller instructed the PA32 to “turn left towards the north. You’re tracking up final approach now”. The PA32 pilot did not respond (Figure 2).

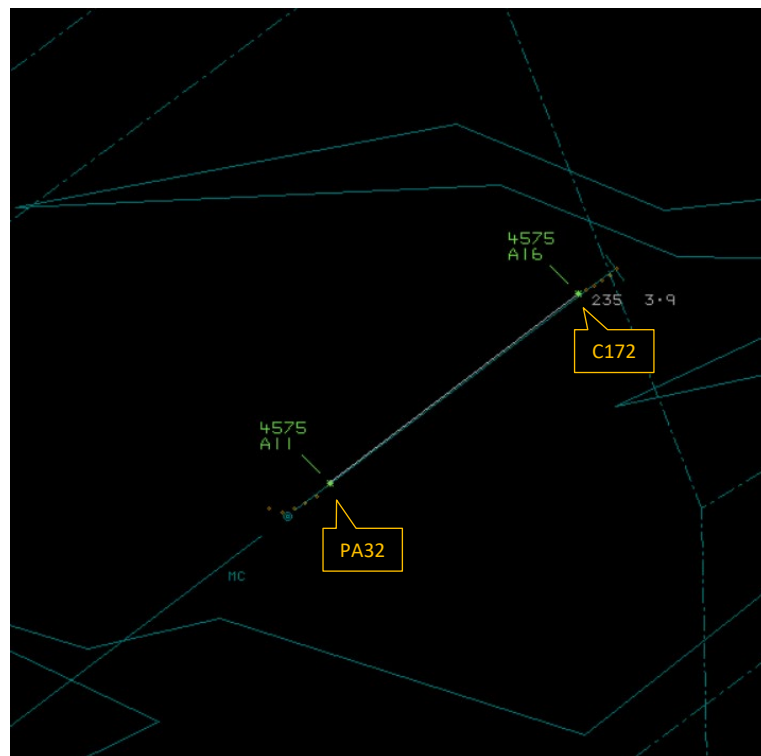


Figure 2 – 1111:48

At 1111:55 the controller repeated the instruction to the PA32 pilot *“turn left immediately towards the north”*, to which the PA32 pilot replied, *“sorry, say again”*. The controller repeated the instruction for the third time *“I say again, turn left north immediately, traffic inbound on the ILS on final”*, to which the PA32 pilot replied, *“turning left”* (Figure 3).

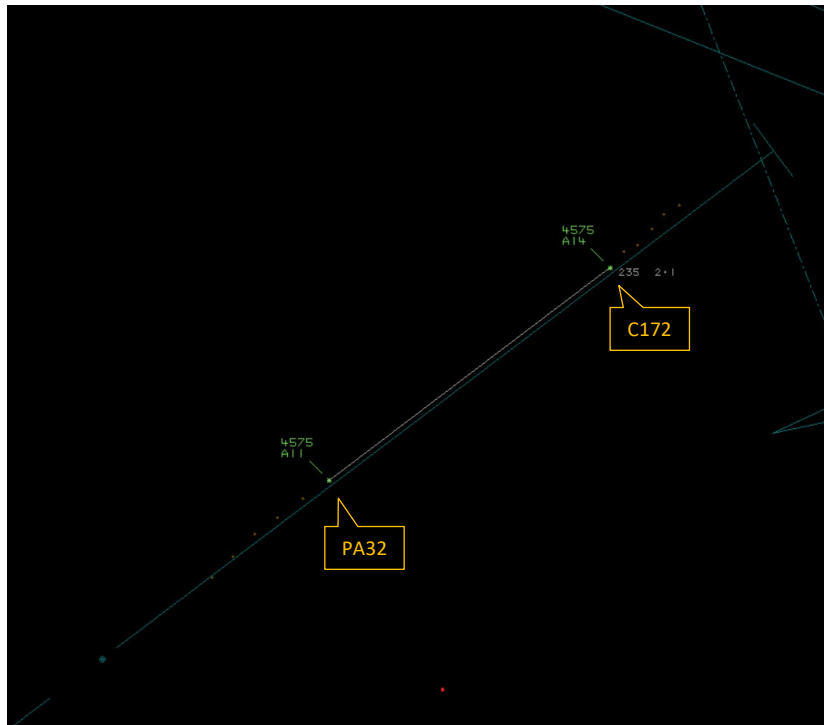


Figure 3 – 1112:10

The controller then advised the C172 pilot, at 1112:18 *“that PA32 now on the crosswind leg northbound”*, to which the C172 pilot replied *“yep, we’ve got him sir – thanks”* (Figure 4).

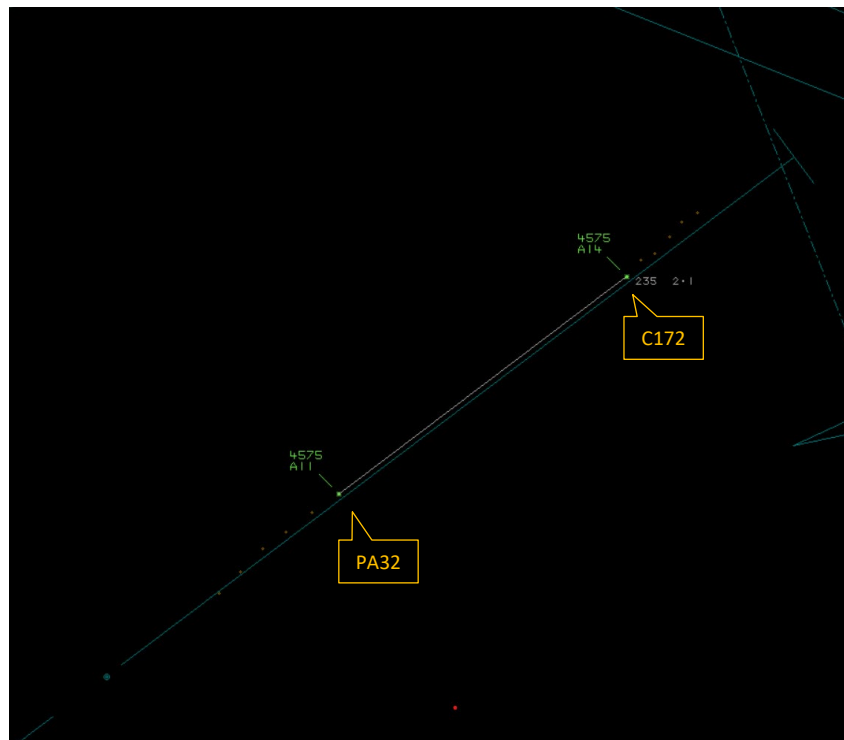


Figure 4 – 1112:20

Then at 1112:25 the PA32 pilot advised *“we’ll be turning towards Burnham”*, to which the controller responded, *“no you won’t. Continue north until instructed”*, which was acknowledged by the PA32 pilot.

CPA occurred at 1112:39 with the aircraft separated by 0.7NM laterally and 200ft vertically, with the PA32 already in a turn away from final approach to the north (Figure 5).

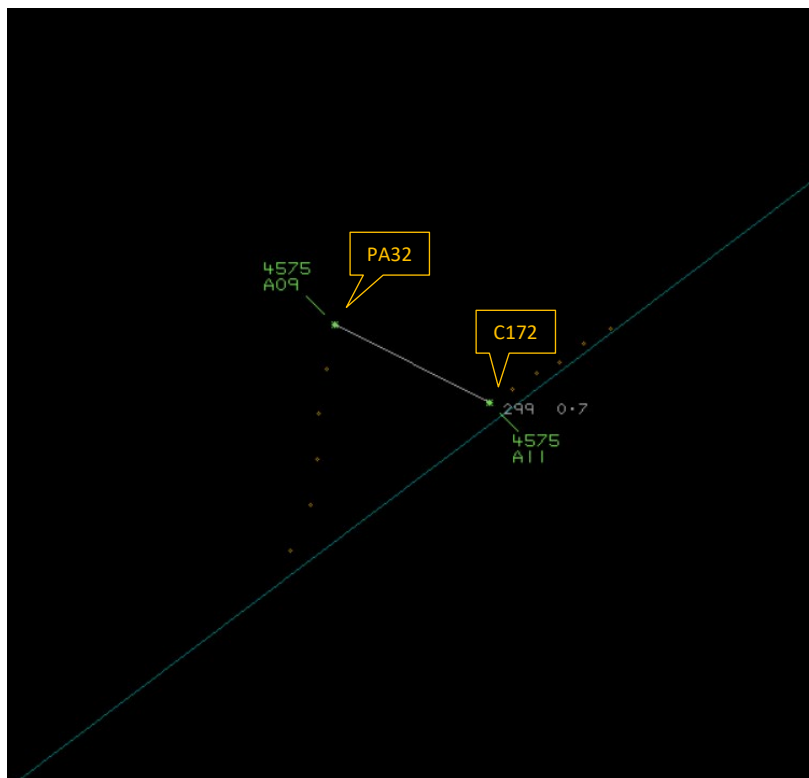


Figure 5 – CPA 1112:39

ATSI had access to reports from both pilots and the Southend Tower controller, together with the Southend RTF recordings and the unit investigation report from Southend ATC. Screenshots have been taken from area radar replay and do not represent the picture available to the Southend controller(s) on the day.

The pilot of the C172 was instructing a student in simulated IMC conditions and had been maintaining a visual look-out from the cockpit. They were aware of the presence of the PA32 and after having been given updated Traffic Information by the Tower controller, reported spotting the PA32 *“as the aircraft indeed flew in front of us some distance away and proceeded in a southerly (sic) direction”*.

The pilot of the PA32 made a number of negative statements in their report with regards to the conduct of both Southend ATC and the C172 pilot, none of which are supported by analysis of the radar and RTF replays by ATSI.

The Southend controller’s report was a statement of fact and did not add anything further to the event other than opine that the presentation of the two aircraft gave them cause to believe that this was an Airprox. Traffic Information passed by both Southend Director and Tower controllers and the instruction to the PA32 pilot to turn to the north were all issued in a timely manner. The ATC unit investigation report noted that the Tower controller had maintained visual contact with both aircraft and been alerted to the potential conflict. They did not remember referring to the Aerodrome Traffic Monitor to ascertain exact aircraft levels but believed that sending the C172 around might have exacerbated the situation.

The pilot of the PA32 on more than one occasion, did not fully readback instructions and information passed by Southend ATC, although this was not always challenged by ATC. They also did not respond to the first instruction to continue approach after having reported on long final. Finally, it took three attempts by ATC before the PA32 pilot responded to the instruction to turn to the north and away from final approach, up which they had been flying, directly towards the inbound C172.

The pilot of the PA32 did not comply with ATC instructions to fly a right-hand circuit, and to remain “not above” 1000ft altitude. The pilot flew the aircraft through the overhead and up final approach into conflict with the opposite direction C172. Both the traffic avoidance advice issued by the tower controller, and the sighting of the PA32 by the pilot of the C172 after having received updated Traffic Information contributed to deconflicting both aircraft.

CAP493 Manual of Air Traffic Services Section 2 Chapter 1 states:

2.1 Aerodrome Control shall issue information and instructions to aircraft under its control to achieve a safe, orderly and expeditious flow of air traffic with the objective of:

(1) Preventing collisions between:

(a) aircraft flying in, and in the vicinity of, the ATZ;

(b) aircraft taking-off and landing.

Note: Aerodrome Control is not solely responsible for the prevention of collisions. Pilots and vehicle drivers must also fulfil their own responsibilities in accordance with R of A Regulations

UKAB Secretariat

The C172 and PA32 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 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.²

Summary

An Airprox was reported when a C172 and a PA32 flew into proximity at Southend Airport at 1112Z on Sunday 13th June 2021. The C172 pilot was operating under IFR in VMC and the PA32 pilot was VFR in VMC, both pilots in receipt of an Aerodrome Control Service from Southend.

PART B: SUMMARY OF THE BOARD’S DISCUSSIONS

Information available consisted of reports from both pilots, radar photographs/video recordings 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 PA32 pilot. They had been given a clearance limit of not above 1000ft, which they climbed above (**CF1**). They then flew an irregular downwind pattern which put them into a direct conflict with the C172 which was on final approach and ahead of them in the circuit (**CF2 & 3**). When they were instructed to turn north, the PA32 pilot either did not hear the transmission or did not assimilate it (**CF6 & 8**), either way they did not turn as instructed, according to the controller’s initial call, and it was only with subsequent calls that they did eventually initiate the turn. The geometry of the instance was such that the PA32 pilot should have given way to the C172, they did not do this and members could only surmise that they had not been able to assimilate the Traffic Information (concerning the emerging conflict with the C172) that was being passed to them (**CF4**). The PA32 pilot could have used this information to cue their lookout and hence visually acquire the C172 earlier, however it seemed apparent that they did not see the other aircraft until a late stage (**CF10**). Some members wondered if the PA32 pilot was familiar with flying in a visual circuit with full Aerodrome Control as it seemed that they were reluctant to adhere to the controller’s instructions (**CF5**). Members agreed that the PA32 pilot could not have maintained full situational awareness for this portion of their

¹ (UK) SERA.3205 Proximity.

² (UK) SERA.3225 Operation on and in the Vicinity of an Aerodrome.

flight (CF7) which, notwithstanding their responsibility to act on the information contained in the transmissions from the controller, resulted in a likely misappreciation of the C172's position and their duty to safely avoid it.

The Board then turned to the actions of the C172 pilot. They had been passed Traffic Information from the Southend controller and reported visual with the PA32. The C172 was equipped with SkyEcho but the pilot did not report receiving any warnings concerning the PA32 (CF9), Board members wondered why there was warning was reported as it could have been expected to alert; some thought it might be that, because the pilot had reported visual, they had not registered (or needed to register) information from their SkyEcho. Additionally members noted that any information received EC would have been supplementary as they were visual with the traffic in good time.

The Board then looked at the actions of the Southend controller. They had identified the PA32 pilot's track conflicting with the C172 inbound and, after passing Traffic Information to both aircraft, made repeated attempts to ensure the PA32 pilot 's flight path was altered to increase the separation between the aircraft despite the PA32 pilot not turning when first instructed.

Finally, the Board considered the risk involved in this Airprox. The Southend controller had passed Traffic information to the C172 pilot and they had seen the PA32. As such, the Board determined that there was no risk of collision, but they considered that safety had been degraded and consequently, the Board assigned a Risk Category C to this Airprox.

PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK

Contributory Factors:

	2021088			
CF	Factor	Description	ECCAIRS Amplification	UKAB Amplification
Flight Elements				
• Regulations, Processes, Procedures and Compliance				
1	Human Factors	• Flight Crew ATC Clearance Deviation	An event involving a deviation from an air traffic control clearance.	
2	Human Factors	• Use of policy/Procedures	Events involving the use of the relevant policy or procedures by flight crew	Regulations and/or procedures not complied with
• Tactical Planning and Execution				
3	Human Factors	• Action Performed Incorrectly	Events involving flight crew performing the selected action incorrectly	Incorrect or ineffective execution
4	Human Factors	• Monitoring of Environment	Events involving flight crew not to appropriately monitoring the environment	Did not avoid/conform with the pattern of traffic already formed
• Situational Awareness of the Conflicting Aircraft and Action				
5	Human Factors	• Flight crew response to communications	An event related to the flight crew taking the incorrect action following communication	
6	Human Factors	• Monitoring of Communications	Events involving flight crew that did not appropriately monitor communications	
7	Contextual	• Situational Awareness and Sensory Events	Events involving a flight crew's awareness and perception of situations	Pilot had no, late or only generic, Situational Awareness
8	Human Factors	• Understanding/Comprehension	Events involving flight crew that did not understand or comprehend a situation or instruction	Pilot did not assimilate conflict information
• Electronic Warning System Operation and Compliance				
9	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				
10	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

Degree of Risk: C.

Safety Barrier Assessment³

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

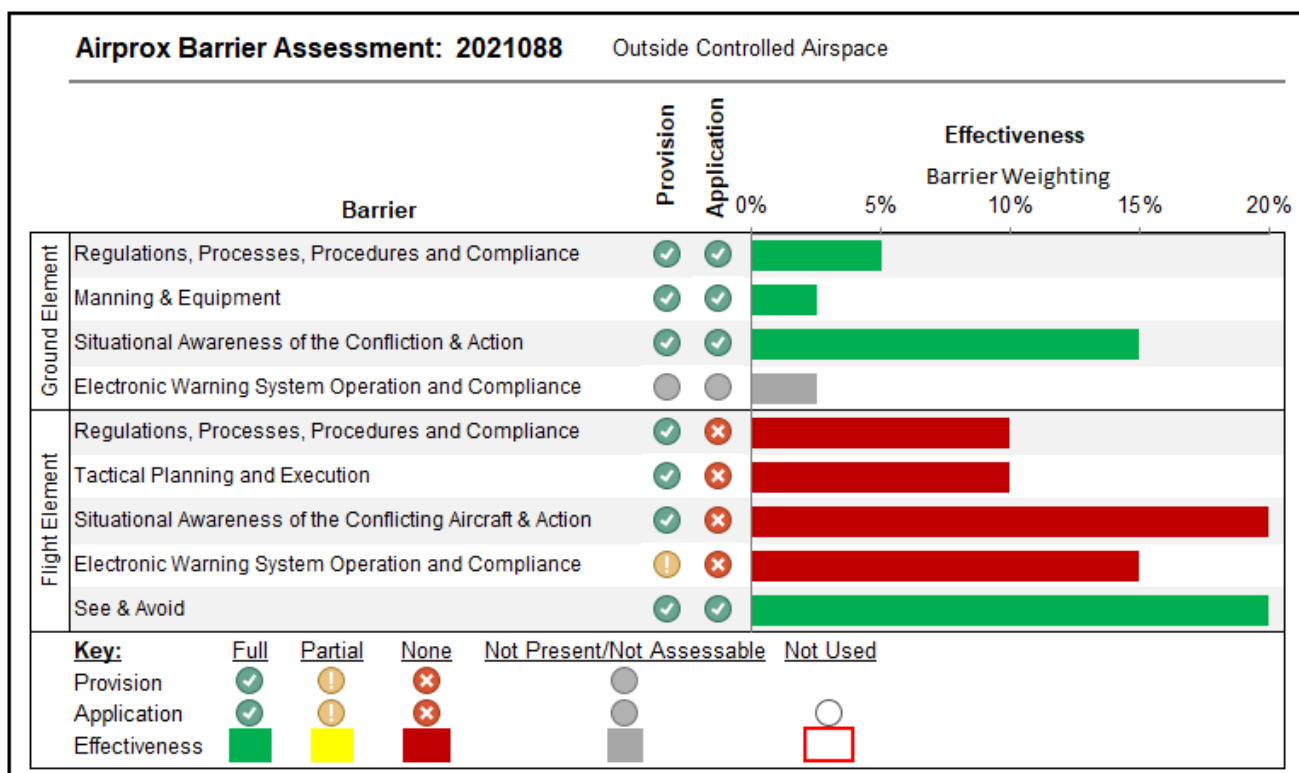
Flight Elements:

Regulations, Processes, Procedures and Compliance were assessed as **ineffective** because the PA32 pilot did not conform with the instructions from the Southend Tower Controller, and they broke their clearance limit.

Tactical Planning and Execution was assessed as **ineffective** because the PA32 pilot did not conform with the C172 already established ahead in the circuit. The PA32 pilot did not correctly fly the circuit pattern.

Situational Awareness of the Conflicting Aircraft and Action were assessed as **ineffective** because the PA32 pilot did not assimilate the communications from the C172 pilot or the Tower controller and therefore did not conform with the controller’s instructions.

Electronic Warning System Operation and Compliance were assessed as **ineffective** because the C172 pilot’s Sky Echo did not alert as expected.



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