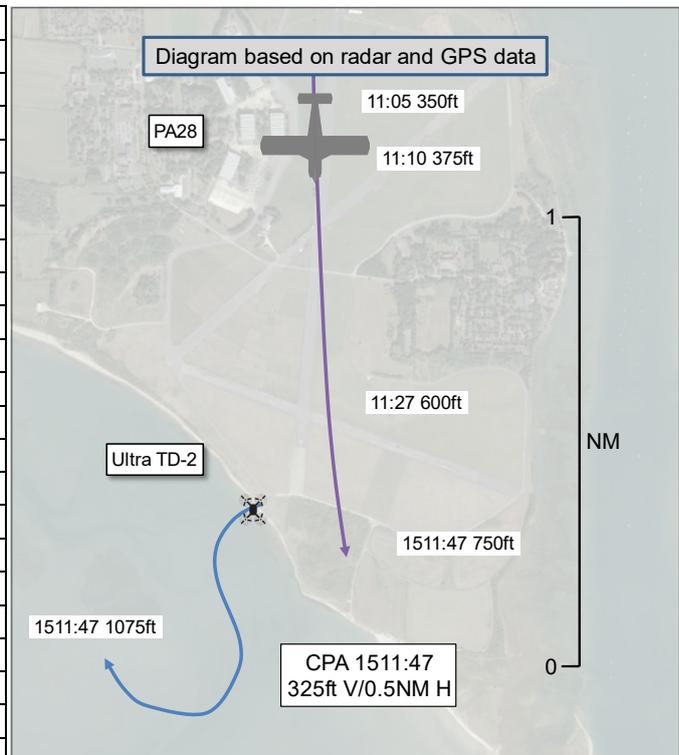


**AIRPROX REPORT No 2022275**

Date: 08 Dec 2022 Time: 1512Z Position: 5049N 00055W Location: Thorney Island

**PART A: SUMMARY OF INFORMATION REPORTED TO UKAB**

Recorded	Aircraft 1	Aircraft 2
Aircraft	Ultra TD-2 UAS	PA28
Operator	Civ UAS	Civ FW
Airspace	London FIR	London FIR
Class	G	G
Rules	VLOS	VFR
Service	None	Listening Out <sup>1</sup>
Provider	N/A	Lee Information
Altitude/FL	1075ft	750ft
Transponder	A, C, S	A, C, S
Reported		
Colours	Red, grey	Blue, white
Lighting	Nav	Anti-col
Conditions	VMC	VMC
Visibility	>10km	>10km
Altitude/FL	1075ft	NK
Altimeter	QNH (1020hPa)	QNH (NK hPa)
Heading	340°	NK
Speed	50kt	95kt
ACAS/TAS	Not fitted <sup>2</sup>	SkyEcho
Alert	N/A	None
Separation at CPA		
Reported	275ft V/~100m H	Not seen
Recorded	325ft V/0.5NM H	



**THE ULTRA TD-2 OPERATOR** reports operating the UAS with a safety pilot and a Ground Control Station (GCS) operator. They were making radio calls on SafetyCom. They did not hear from the other pilot. They were at altitude in the circuit when the other aircraft came in from 600ft (within the NOTAM) which required them to change course. They were downwind left RW29. The other aircraft cut across, heading south.

The pilot assessed the risk of collision as ‘Medium’.

**THE PA28 INSTRUCTOR** reports conducting a ‘biennial check flight’. Neither of the occupants observed another aircraft in proximity.

**THE THORNEY ISLAND AERODROME OPERATOR** reports that [the UAS operator] which reported the Airprox is a civilian company which utilises an old operating strip at Baker Barracks to the south of Thorney Island. The land is leased via DIO Land Management Services but booked via [the base operations] team. [The UAS operator] conducts flights under VLOS within the local Class G airspace. They utilise SafetyCom for all of their transmissions including broadcasting flight profiles. They also submit a NOTAM when active. The [UAS operator]’s Air Safety team [has been invited] to join the regular quarterly Air Safety Working Group.

**THE LEE-ON-SOLENT AFISO** reports that neither they nor their colleague were aware of an Airprox. A check of the watch log and flight strips established that the PA28 departed at around 1448 for a local

<sup>1</sup> The PA28 Instructor reported being in receipt of an AFIS, but more realistically simply listening out at that range from Lee On Solent.

<sup>2</sup> ADS-B Out was fitted.

flight and returned via a right base join for touch-and-go practice before landing at 1544. At that time they were operating RW05 left-hand circuit.

## Factual Background

The weather at Southampton was recorded as follows:

METAR EGGH 081520Z 01003KT CAVOK 03/M02 Q1010=  
METAR EGGH 081450Z 01004KT CAVOK 03/M01 Q1010=

The relevant NOTAM was noted as follows:

Q) EGGT/QWULW/IV/BO /W /000/011/5049N00055W002  
A) EGGT B) 2212051200 C) 2212091700  
D) 05 1200-1700, 06-09 0800-1700  
E) UAS OPR WI 1NM RADIUS OF 504843N 0005516W (THORNEY ISLAND, WEST SUSSEX). MAX HGT 1000FT AGL. FOR INFO 07743 545371. 2022-12-0091/AS4.  
F) SFC G) 1100FT AMSL

## Analysis and Investigation

### UKAB Secretariat

The TD-2 UAS and PA28 pilots shared an equal responsibility for collision avoidance and not to operate in such proximity to other aircraft as to create a collision hazard.<sup>3</sup> 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.<sup>4</sup> During the flight, the remote pilot shall keep the unmanned aircraft in VLOS and maintain a thorough visual scan of the airspace surrounding the unmanned aircraft in order to avoid any risk of collision with any manned aircraft. The remote pilot shall discontinue the flight if the operation poses a risk to other aircraft, people, animals, environment or property.<sup>5</sup>

## Summary

An Airprox was reported when an Ultra TD-2 UAS and a PA28 flew into proximity at Thorney Island at 1512Z on Thursday 8<sup>th</sup> December 2022. Both pilots were operating in VMC, the UAS pilot under VLOS and not in receipt of a FIS, the PA28 pilot under VFR and listening out on Lee Information.

## **PART B: SUMMARY OF THE BOARD'S DISCUSSIONS**

Information available consisted of reports from both pilots, radar photographs/video recordings, GPS data, a report from the AFISO involved 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.

Board members quickly agreed that the UAS operator had taken effective action when they had seen the PA28 and wondered to what degree the PA28 Instructor and pilot had assimilated the UAS activity NOTAM. Whilst a NOTAM does not require other traffic to remain outside the promulgated vertical and lateral dimensions, members agreed that the biennial check flight presented the perfect opportunity for the Instructor to demonstrate Threat and Error Management, particularly with regard to the UAS NOTAM, including perhaps contacting the UAS operation using the phone number provided. In the event, it appeared to the Board that this had not been done (**CF2**). Members noted that although the NOTAM correctly described the UAS as a 'UAS', this particular UAS had a 10m wingspan and 350kg

<sup>3</sup> (UK) SERA.3205 Proximity.

<sup>4</sup> (UK) SERA.3225 Operation on and in the Vicinity of an Aerodrome.

<sup>5</sup> Regulation (EU) 2019/947 as retained (and amended in UK domestic law) Under the European Union (Withdrawal) Act 2018 - UAS.SPEC.060 Responsibilities of the remote pilot (2)(b).

maximum weight. The Board wondered whether SafetyCom could be used as a means of contact, perhaps promulgated in a NOTAM, and saw no barrier to such use, provided the UAS radio was operated by a suitably qualified person (a holder of an FRTOL). Members surmised that the PA28 Instructor had been using the airfield at Thorney Island to practice a PFL, noted that a disused airfield can often be used for such practice by other pilots and that a lower risk, and perhaps more realistic, option would have been to use a field in the open. This option also added the benefit of potentially being able to descend to a lower height before commencing a go-around, whilst remaining 500ft clear of persons, vessels, vehicles and structures. The PA28 Instructor had been operating in receipt of a FIS that did not require the aircraft to be monitored (CF1) and, the Board surmised, had not been aware of the UAS operation (CF3). Similarly, the UAS operator had not been aware of the PA28 until sighted (CF3). The Board was not able definitively to ascertain why the PA28 TAS had not alerted on the UAS ADS-B out signal (CF4) but noted that portable TAS were highly sensitive to placement and that an antenna inside the aircraft would inevitably suffer from a higher degree of signal blanking than an external antenna. The PA28 Instructor reported not seeing the UAS (CF5) but, as the Board initially agreed, the UAS operator had seen the PA28 in good time and taken effective action, albeit whilst being concerned by the proximity of the PA28 (CF6). Turning to risk, some members felt that normal procedures had applied in that pilots are not required to avoid the lateral and vertical limits described within a NOTAM in Class G airspace, and the UAS operator had correctly discharged their obligations with regard to avoiding other aircraft. However, the majority felt that normal operation could better be described as a pilot remaining outside a NOTAM until the associated activity had been identified and then entering if necessary whilst affording an appropriate degree of consideration for the NOTAM activity, and thus safety had been degraded. The Board agreed, however, that in this case any risk of collision had been averted by the UAS operator; Risk C.

## **PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK**

### Contributory Factors:

	2022275			
CF	Factor	Description	ECCAIRS Amplification	UKAB Amplification
<b>Ground Elements</b>				
<b>• Situational Awareness and Action</b>				
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
<b>Flight Elements</b>				
<b>• Tactical Planning and Execution</b>				
2	Human Factors	• Pre-flight briefing and flight preparation	An event involving incorrect, poor or insufficient pre-flight briefing	
<b>• Situational Awareness of the Conflicting Aircraft and Action</b>				
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
<b>• Electronic Warning System Operation and Compliance</b>				
4	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
<b>• See and Avoid</b>				
5	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
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<sup>6</sup>

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

### Ground Elements:

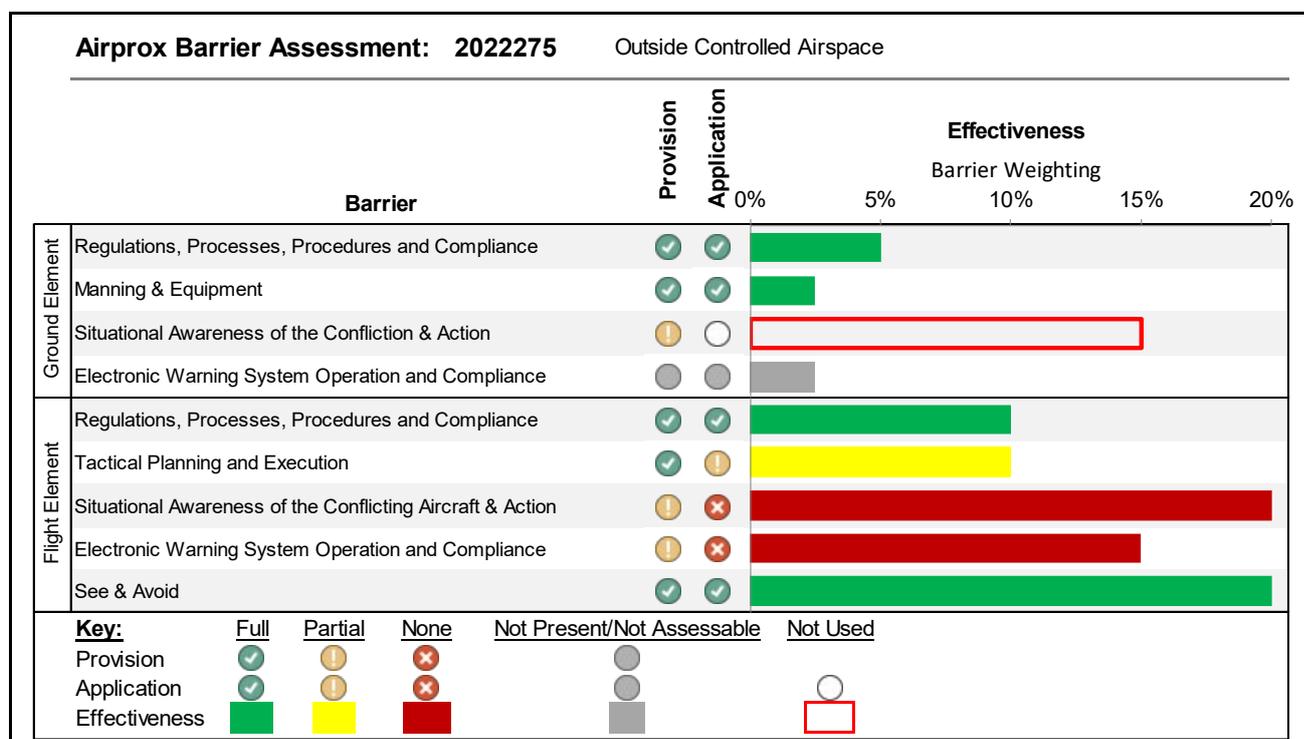
**Situational Awareness of the Confliction and Action** were assessed as **not used** because the AFISO was not required to monitor the PA28.

### Flight Elements:

**Tactical Planning and Execution** was assessed as **partially effective** because the PA28 crew had not included the NOTAM activity in their plan.

**Situational Awareness of the Conflicting Aircraft and Action** were assessed as **ineffective** because the UAS operator was not aware of the PA28 until sighted and the PA28 crew appeared to be unaware of the UAS operation.

**Electronic Warning System Operation and Compliance** were assessed as **ineffective** because the PA28 TAS did not alert when it could have been expected to do so.



<sup>6</sup> The UK Airprox Board scheme for assessing the Availability, Functionality and Effectiveness of safety barriers can be found on the [UKAB Website](#).