Stansted CTA, CTR and TMZs

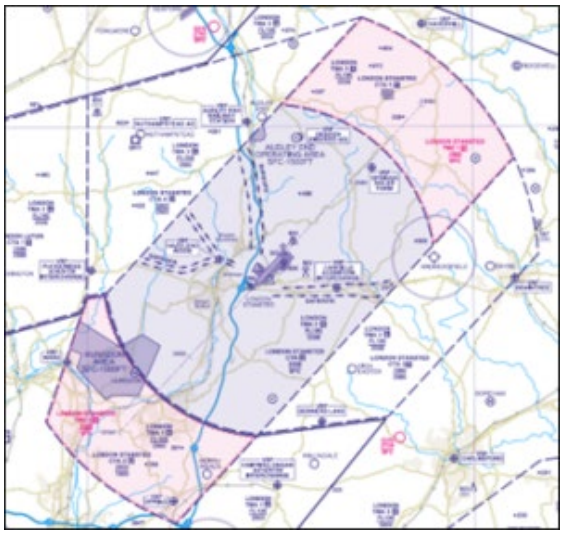
Preventing airspace infringements in the vicinity of Stansted

This infringement update is the sixteenth in a series of narratives focusing on identified infringement 'hot-spots' in the UK. It has been written by members of the Stansted Local Airspace Infringement Team. This narrative has been updated August 2023.

In 2022, there were a total of 110 infringements of the 3 notified airspace types at Stansted: 44 were in the Control Areas (CTA), 23 were in the Control Zone (CTR) and 43 were in the TMZs. Infringement hot-spots have been identified as TMZ-2 and CTA-2.

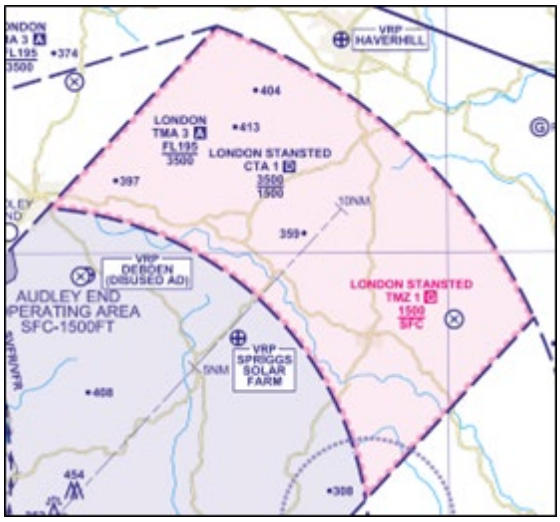
In early 2009, the CAA approved the establishment of two Transponder Mandatory Zones (TMZ) around Stansted Airport resulting from overriding safety concerns in relation to the number, and severity, of airspace infringement risk of the two CTAs adjacent to the CTR reported in previous years. The introduction of the TMZs in September 2009 negated any additional controlled airspace to be introduced but enhanced controller situational awareness and safety.

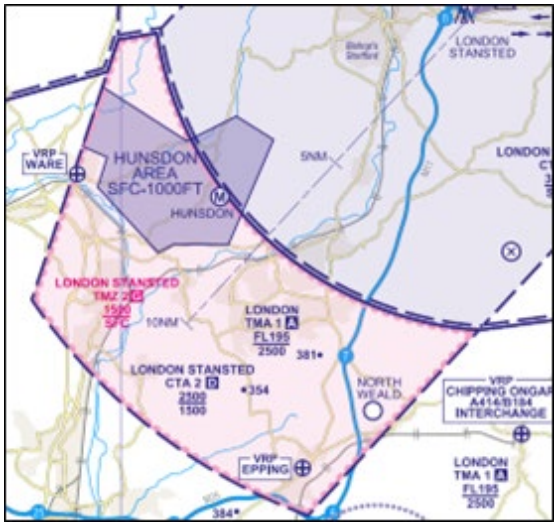
Over ten years later despite many pilots correctly adhering to the requirements, reports of infringements of the TMZ and Stansted controlled airspace continue to be submitted. Why are there still, on average, two infringements of Stansted notified airspace per week?



Transponder Mandatory Zones

TMZs 1 & 2 are co-incident with the lateral boundaries of CTA-1 (north-east) and CTA-2 (south-west) of the Stansted CTR. They are Class G airspace from the surface to 1,500 feet AMSL and are subject to UK SERA.6005 and therefore are notified airspace in relation to airspace infringements.





Access to the Stansted TMZs, without ATC approval, requires a serviceable Mode S Elementary transponder to be operated at all times and to its full extent. Within the TMZs, pilots are recommended to obtain a service from Farnborough LARS North (132.800 MHz) or maintain a listening watch on Stansted Radar (120.625 MHz) and make use of the Frequency Monitoring Code (FMC) of 7013.

The Air Navigation Service Provider (ANSP) facilitates access into the TMZ for those pilots whose aircraft do not meet the transponder requirement. The UK AIP publishes the requirements to operate within the TMZ in GEN1.5 (AIRCRAFT INSTRUMENTS, EQUIPMENT AND FLIGHT DOCUMENTS) paragraph 5.3.1(f); these requirements are reproduced in the various commercial flight guides.

If you wish to operate in a Stansted TMZ without a serviceable Mode S transponder or without any form of transponder, access may still be granted subject to specific ATC approval from either:

- Farnborough Radar on 132.800 MHz between 0800 hours and 2000 hours UTC; or
- Stansted Radar on 120.625 MHz at other times.

The procedures for Farnborough Radar to co-ordinate with Stansted Radar may result in short delay so an awareness of this fact in the pre-flight planning stage should be remembered and incorporated into your

Threat and Error Management (TEM). Make a call with sufficient time to allow for a delay in receiving a clearance.

TMZ Infringements

When an unknown aircraft is detected within a TMZ there is a significant workload increase for the controller including a set procedure to be followed with co-ordination. Although Class G airspace, all un-identified primary only or Mode A-only returns will be treated as an airspace infringement; air traffic controllers must maintain separation of 3NM laterally or 3,000 feet vertically (when the altitude is indicated) between the infringing aircraft and any aircraft to which they are providing a service. If necessary 'Avoiding Action' may be passed to arriving and departing aircraft if already airborne or departing aircraft may be held on the ground and delayed depending upon the position of the unknown aircraft. A 'Loss of Separation' is recorded when it's not possible to maintain 3NM laterally or 3,000 feet vertically from the unknown aircraft.

If you intend to visit any of the airfields near the TMZs, it is a good idea to review the arrival and departure procedures online and in VFR flight guides; you may be required to obtain a specific briefing from the airfield operators to ensure compliance of the agreed local ATC procedures. When you PPR/book into the aerodrome, ask the ANSP staff of any specific procedures that need to be followed.

Further information relating to the Stansted TMZ can be found in UK AIP EGSS AD2.2.7

Stansted Controlled Airspace

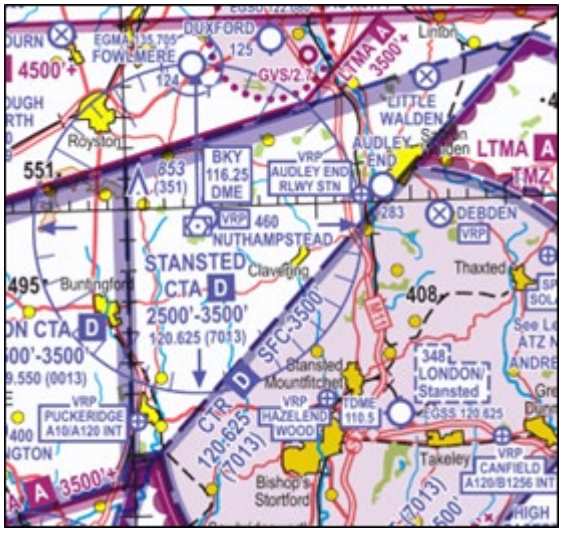
Although many pilots comply with the TMZ procedures, there are still reported infringements of CTA-1 and CTA-2 when pilots have climbed from the TMZ into the CTAs or flown through the corner of the CTR boundary.

The controlled airspace complex comprises the CTR and 4 CTA, levels depicted below. All airspace is Class D. The Class A London Control Area (LTMA) is contiguous from the upper CTA levels to FL195.

Structure	Airspace Class	Level (AMSL)	Aerodromes Within/Below
Stansted Control Zone (CTR)	D	Surface – 3,500 feet	Hunsdon
Stansted CTA-1	D	1,500 feet – 3,500 feet	North Weald
Stansted CTA-2	D	1,500 feet – 2,500 feet	
Stansted CTA-3	D	2,500 feet – 3,500 feet	Andrewsfield, High Easter
Stansted CTA-4	D	2,500 feet – 3,500 feet	Audley End, Nuthampstead
LTMA-1	A	2,500 feet – FL195	
LTMA-3	A	3,500 feet – FL195	

CTA-1 and TMZ-1 northeast of the Stansted CTR

CTA-2 and TMZ-2 southwest of the Stansted CTR



CTA-4west of the Stansted CTR adjoins the Luton CTA

CTA-3 east of the Stansted CTR

Navigation

Stansted has 15 Visual Reference Points (VRPs); all are signposted in UK AIP EGSS AD2.22.6; changes made in 2023 are now depicted on the latest VFR charts. For those pilots who use radio navigation techniques to navigate by, or as a back-up to visual navigation, there are 3 VOR/DME nearby to assist with cross-referencing positions from notified airspace boundaries:

NAVAID	ID	FREQUENCY	NOTES
Barkway VOR/DME	BKY	116.250 MHz	Under CTA-4 and 4NM from the CTR boundary
Brookmans Park VOR/DME	BPK	117.500 MHz	2NM from the boundary of CTA-2 and TMZ-2.
Lambourne VOR/DME	LAM	115.600 MHz	2.5NM from the boundary of CTA-2 and TMZ-2 and inside the Stapleford ATZ.

If routeing between the Stansted and Luton CTRs, flying below altitude 2,500 feet direct between the VOR/DME of BPK and BKY, keeping to the west of the Ware and Puckeridge A10/A120 Interchange VRPs will ensure that you will not infringe Stansted controlled airspace.

In Threat and Error Management (TEM) terms, infringing controlled airspace is a 'Threat' then perhaps the 'Error Management' is utilising these NAVAIDs to assist with navigation.

Preventing an airspace infringement

The Airspace and Safety Initiative website provides extensive advice on how to avoid the risk of infringing airspace. Airspace infringements can be avoided by effective pre-flight planning, sound inflight decision making underpinned by the application of TEM. Below are some general Threats and Errors for Stansted Airspace and those that are more specific to aerodromes positioned within or beneath it.

Threat	Error	Error Management
Infringing a CTA	Descending too late or climbing too early after departure or transit beneath a CTA	Plan your climb and descent using a geographical limit point; when joining and departing beneath a Stansted CTA, ensure you are 200 feet below controlled airspace. For example, when inbound to Andrewsfield, ensure you are at or below altitude 2,300 feet prior to transiting below CTA-3, or conversely, ensure you do not climb above altitude 2,300 feet until you have passed Braintree VRP on departure.
Infringing a TMZ	Entering a TMZ without a serviceable Mode S transponder operating to its maximum capability.	Double check your transponder is operating fully prior to departure, and again prior to entering the TMZ. Combat confirmation bias and include a transponder check even if you checked your transponder was operating on departure. No transponder? Obtain a permission or, if operating at Hunsdon or North Weald, route via designated Areas of Operation.

North Weald

(See hot-spot narrative 38: North Weald Aerodrome)

Threat	Error	Error Management
Infringing TMZ-2	Not turning on transponder prior to departure	Don't rush your departure. Double check your transponder again once lined up. Think Lights Camera Action – landing lights, transponder on **fully**, no traffic on final or runway. No transponder? Route via the Area of Operation via Epping VRP.

Threat	Error	Error Management
Infringing CTR	Flying wide visual circuits on Runway 20 or turning late after departure from Runway 02	Ensure to turn prior to reaching the water tower which lies just within the CTR. If there's traffic ahead, continue a normal pattern at circuit height rather than extending downwind.
Infringing CTA-2	Planning to transit overhead North Weald aerodrome	North Weald is a busy aerodrome with a visual circuit height of 1,200 feet. You are likely to encounter circuit traffic and may instinctively climb into the CTA to avoid. If able, plan your route to avoid overflying North Weald. Maintain situational awareness by using North Weald Radio frequency on 123.530 MHz

Andrewsfield

Threat	Error	Error Management
Infringing CTR	Flying outside of the boundaries of the Andrewsfield (LFA).	The LFA ceiling is 1,500 feet AMSL; "Take 2" and operate no higher than altitude 1,300 feet. Make use of a VFR moving map device for lateral situational awareness

Audley End

Threat	Error	Error Management
Infringing CTR	Not making use of squawk 7010 in Audley End Area of Operation	Implement a limit point check to ensure 7010 is set prior to entry

Hunsdon

(See hot-spot narrative 35: Hunsdon Microlight Site)

Threat	Error	Error Management
Infringing CTR	Flying outside of the boundary of the Area of Operation	Remain west of the powerlines and keep circuits "tight" to remain within the area. "Take 1" from the area ceiling of 1000 feet AMSL.
Infringing TMZ-2	Flying outside of the Area of Operation when not equipped with Mode S Transponder	Remain east of the powerlines and north of the bodies of water at Stansted Abbots. Alternatively, request a TMZ permission from Farnborough or Stansted Radar.

In addition, pilots are strongly encouraged to:

Use a Moving Map which will provide a profile along your planned route showing the controlled airspace boundary and associated visual and aural warnings as you approach the airspace. When flying in proximity to Stansted controlled airspace, and if able to, **Take 2**.

Obtain an air traffic service from Farnborough North on channel 132.800 MHz.

Use a Frequency Monitor Code (FMC). Rather than squawking 7000/2000, if you do not want to obtain a service from ATC, use an FMC appropriate to the direction of flight; the Stansted FMC is 7013 with Stansted Radar (120.625 MHz). There are a further 3 FMCs in use in the vicinity of Stansted's controlled airspace. Review the chart at ENR6.80 to understand the boundaries of the areas; this information is also replicated in AIC Y100/2022.

Airport	ATSU	Channel	FMC
Luton	Luton Radar	129.550 MHz	0013
Southend	Southend Radar	130.780 MHz	5050
London City	Thames Radar	132.700 MHz	0012

Use the correct QNH. Obtain the Stansted QNH from the ATIS (127.180 MHz) or monitor Stansted Radar (120.625 MHz). ATIS also available on Clacton VOR (on frequency 114.550 MHz/channel 92Y).

Make a Detailed Plan. Build in your climb and descent points when planning your route. Use satellite imagery to know what VRPs look like and what airspace lies above them or close by. Prepare a PLOG listing frequencies of useful adjacent ATSU/aerodromes that may need to be called such as:

Stapleford ATZ	Stapleford Radio	122.805 MHz
Andrewsfield ATZ	Andrewsfield Radio	130.555 MHz
Earls Colne ATZ	Earls Colne Radio	122.430 MHz
Duxford ATZ	Duxford Information	122.080 MHz
North Weald	North Weald Radio	123.530 MHz

If appropriate – **request a clearance**. If for any reason a climb into the CTA, or a turn into the CTR is (or may be) required then a clearance must be obtained from Stansted Radar before entering controlled airspace.

Air Traffic Controllers are there to help. If in doubt, contact Stansted Radar on 120.625 MHz for assistance