

STANSTED AIRSPACE

Proposal for Implementation of a Transponder Mandatory Zone

Response from Saxon Microlights

Saxon Microlights Office nr Hangar 6 North Weald Airfield North Weald Essex CM16 6HR
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1 Summary of this response

This response represents the views of Joan Walsh and Adrian Sunley, trading as Saxon Microlights. We run a microlight flying school based at North Weald Airfield within the boundary of the proposed TMZ. Our training flights start and end at North Weald Airfield, within the proposed TMZ, and often take place either within the airspace enclosed by the proposed TMZ or close to its boundaries.

The purpose of the proposal is to improve safety to CAT traffic under NATS control within the Stansted CTA by identifying a greater proportion of infringing traffic than at present

We at Saxon Microlights recognise the needs of safety and agree that it is in the interests of both CAT and light aviation to maintain an adequate level of separation between the two classes of airspace user. However, Saxon Microlights oppose this proposal on several grounds, particularly:

- a) the consultation document is inadequate because
 - several important issues are inaccurately represented;
 - no agreed criteria are presented defining risk and safety;
 - a lack of hard facts on which the proposal is based;
 - the statistics quoted are poorly presented and effectively meaningless;
 - ATC operational issues are misrepresented as safety issues;
 - the document prejudices the outcome of the consultation without adequately considering other options;
 - imprecise language is used which fudges the issues;
 - the consultation is run in a manner which potentially fails to meet the minima laid down in HM Government code of practice.
- b) there are safety and environmental issues arising out of the proposal because the proposed TMZ creates bottlenecks for 'non-compliant' light aircraft close to densely populated areas
- c) there are significant issues which the consultation document does not address, such as:
 - the high number of class G airspace users local to the proposed TMZ who cannot fit transponders,
 - the unfair negotiating position they will be in if a TMZ is imposed before letters of agreement are concluded,
 - other procedural or technological options exist which have not been considered by the consultation
- d) no consideration has been given to the financial impact on current users of the airspace of having to fit transponders to be able to continue flying unimpeded, nor to the costs to NATS of providing support for them, nor indeed the costs of enforcing the proposed TMZ
- e) the air traffic growth predictions used to justify the safety case are now incorrect due to the present economic crisis.

We do not believe there would be any significant benefit to Saxon Microlights' operation from the imposition of a TMZ because the cost of fitting and maintaining transponders

would contribute a disproportionate amount to our capital outlay, and may also require the removal of other safety-related equipment from our aircraft.

We have no reason to believe that a letter of agreement would adequately mitigate these objections because the consultation gives no information about the conditions which NATS would wish to impose on 'non-compliant' aircraft operating within the TMZ.

As our aircraft are not suitable for fitting transponder equipment, we cannot support the imposition of a TMZ. However, if a TMZ is to be imposed, then we could only support an amended option two with a segment removed from the southern edge to allow North Weald Airfield and its circuit to remain clear of the TMZ

2 About Saxon Microlights

Saxon Microlights is an Essex-based microlight flying school aimed at the lower-cost end of the market in order to provide affordable flight training to people of average income. It is owned and run by a husband and wife team.

Microlight flight training does not require a licensed aerodrome. After attempting to establish operations at various private airstrips around the county, the school has been provided a base at North Weald Airfield and over the last two years has invested in basic facilities at that location.

North Weald Airfield is within the boundaries of the proposed TMZ section D. Most of our flight training takes place to the east of North Weald, including an area under the Stansted CTA which forms proposed TMZ section C. All lessons start and end at North Weald Airfield.

The airworthiness standard for microlight aircraft (cf BCAF-S, ref 6) specifies maximum empty weights. In common with many microlight aircraft, our aircraft are very close to the maximum empty weights for their type.

Saxon Microlights, like many microlight flying schools, is a small operation with a low budget. We have one Thruster T600N as our main school aircraft and a share in a Cyclone AX3 as a reserve. The total value of our aircraft on the second-hand market would be less than £20,000.

3 Understanding of proposal

It is our understanding that the primary reason for this proposal is to increase safety to air traffic under NATS control within the Stansted CTR and CTA by reducing the risk of collision arising out of zone infringement by aircraft which are not recognised by the air traffic controllers. In particular, the proposal aims to provide air traffic controllers with a clearer picture of air traffic outside, but beneath its controlled airspace.

Section 5 of the consultation document states clearly that flight delay and environmental considerations do *not* form part of the case for the proposed TMZ.

Section 5 also indicates that NATS believes that where aircraft operators are unable to fit suitable transponders that 'procedures and letters of agreement' will provide adequate flexibility for such operators to continue to fly within the proposed TMZ.

The following comments on the proposal are made in the light of this understanding.

4 Comments on the proposal

4.1 Issues inaccurately represented by the proposal

4.1.1 “Risk” and “Safety” – no agreed criteria

There are existing, and publicly available criteria for measuring and predicting safety levels. These are published by the CAA and the Airprox Board (doc refs 3 and 4). NATS has chosen to introduce another, internal, system which appears to be different yet again. We, the public, appear to have no way of knowing how this system is derived (cf correspondence copied in Appendix B).

The UK Airprox Board has four levels of incident severity defined by the level of risk of collision (ref 3). The CAA Safety review 2008 lists a variety of levels of ‘occurrence depending on the outcome of an accident, or if no accident occurred then how near an accident was to occurring. NATS are using an internally defined three-level measure of risk (ref 6b).

Overall, there is no agreed level of risk which is considered acceptable and which can be used as a target for NATS to achieve. Comparing this with road safety statistics (approximately 3000 deaths per year) or railway level crossing statistics (ref 5: average 14 deaths per year excluding suicides), controlled airspace infringements would appear to be a very minor source of risk, even accepting the disproportionately greater attention paid to air accidents by the news media.

Without an agreed measure of risk nor an agreed level of acceptable risk, it is not possible to identify whether any extra safety which may or may not be provided by the proposed TMZ can be justified against the cost and inconvenience.

4.1.2 Lack of hard facts

Given the varied criteria by which occurrences which compromise safety are assessed, safety statistics from different sources are very difficult to compare. We are not provided access to the underlying records which are used to derive the statistics. All we have available are averages across the NATS controlled airspace or the whole country depending on the analysis in question.

The consultation document uses emotive images (eg especially figures 2 and 3) and misrepresentative figures (eg. table 1 implying on casual reading that the figure 14112(applies to the month of August only, and choosing peak holiday time for its ‘typical movement figures’). Nonetheless, no indication is given of how many of these are affected by infringing aircraft, nor is any indication given of what proportion would be aircraft not returning SSR altitude information.

4.1.3 Poor use of statistics

A review of the Airprox boards documents in ref 3 shows only a single incident involving GA and CAT traffic in the Stansted controlled airspace during the period from January

2003 to December 2007. By comparison, the same document lists several incidents occurring close to the edges of controlled airspace. This indicates that there is a higher incident risk where aircraft congregate while trying to avoid controlled airspace but this factor is not considered within the consultation.

Not having access to the NATS SSE database, we must seek other sources of information. According to the Fly On Track briefing there were an average of less than 8 of the most serious infringements *nationwide* per year since 2005, but these were reducing with only 3 *nationwide* in 2008. The consultation document (para 7.3) tells us that 30% of highest risk incidents involve aircraft without operating transponders. That implies one single incident across the UK in 2008.

There is an average of 500 next-level reported infringements nationwide, but we are not told what the criteria are for classifying them as such, nor how many of these are at Stansted. The consultation document (para 10.3), however, chooses to tell us that 20% of this arbitrarily-defined risk is from aircraft not fitted with or not operating transponders.

There were many comments raised in the responses to the CAA mode S consultation (ref 2, A4) showing clearly that accident, infringement and airprox statistics do not support the assertion that extra SSR surveillance is needed.

Bearing in mind that Stansted is only one of 15 airports contributing to NATS statistics, these figures are vague to say the least, yet the consultation document proposes a significant change to airspace rules around Stansted airport affecting many aircraft and costs to their operators on the basis of them.

4.1.4 Operational issues reported as safety issues

The consultation document makes many references to 'loss of separation'. This looks to any lay reader of the document as a dangerous situation, perhaps akin to a road vehicle, crossing a double white line in the road in the face of oncoming traffic, or even a lorry crossing the central reservation of a dual carriageway. In reality, it refers to a failure of air traffic control to maintain a wide (several miles) statutory separation between traffic flying under their control from other traffic known to them. A loss of separation of itself is not necessarily a safety issue in the same league as, say, a TCAS trigger or an airprox where a risk of collision may exist.

At paragraph 7.4 and elsewhere, the consultation document refers to the need for controllers to divert aircraft under their control around unknown aircraft which have infringed, presumably unintentionally, their controlled airspace. The fact that the aircraft's presence is known and only the height is unknown indicates that this is an operational issue, not a safety issue. The controller has done his job and successfully avoided a risk.

The issue in question is that NATS does not trust pilots of aircraft operating under the CTA not returning altitude SSR responses to maintain altitude below the CTA and wishes to be able to remove the statutory assumption that they are doing so. This may be a valid argument, but it must be made on the basis of known and published facts as argued here in the preceding paragraphs, not on assertions based around operational, not safety, grounds.

4.1.5 Prejudged outcome

In the final paragraph of section 10.4, the consultation document makes an assertion about behaviour on the part of pilots intending to avoid the TMZ that has no basis. The unfounded assertion is then used to justify the imposition of a TMZ under the entire Stansted CTA. As the type of infringement referred to is unintentional on the part of the pilots in question, these would remain just as likely whether or not a TMZ is imposed.

The consultation document (eg at paragraphs 7.5 and 8.6) suggests that investment by NATS in further CAIT would reduce risk due to unintentional infringements. It just depends on NATS's willingness to fund such development.

At section 9.1, the consultation document makes the invalid assumption that the only alternative to a TMZ is to do nothing. At the final paragraph of that section it makes the assumption that a TMZ will be imposed under at least part of the CTA.

4.1.6 Imprecise language

There are many examples of ambiguous or imprecise language within the consultation document. These are open to an interpretation by the reader which may be different to that intended by the authors. As such, they cannot be relied on to shed light on the subject matter and certainly not to inform a decision as important as this. Examples are:

“... may be infringing...” (para 7.2)

“... this can lead to... which in turn can result in...” (para 7.4)

“... would provide... This could be... this would give...” (para 7.5)

“... could be aircraft...” (para 8.9)

This imprecision continues into the tables and figures of section 8. They choose the busiest month and represent them as ‘typical’ (8.12 and 8.14). Additionally, there is no indication as to which portions of the flights shown are within the height band of the CTA and which have climbed above into the LTMA, or indeed descended into class G airspace. In other words, the reader cannot tell which flights are affected by the proposed changes.

4.1.7 Approach to consultation

This consultation period has been set to the minimum allowed by the HM code of practice, notwithstanding that the code also requires that longer consultations periods should be considered. We are not given any reason why only the minimum period is feasible or sensible.

There are several private airstrips under the TMZ whose users will be affected but which are not listed. It is unlikely that they have received full and timely notification of this consultation.

If it is found necessary to impose a TMZ around Stansted Airport, it is likely that TMZs will be imposed around other airports such as Luton. The consultation fails to indicate the general strategy which NATS intends to apply to the introduction of further TMZs

The consultation document fails to identify costs and benefits to the stakeholders who need to operate within or near to the proposed TMZ, relying simply on a poorly-founded assertion that a TMZ is necessary to improve an undefined level of safety within the TMZ boundaries.

4.2 Unintended consequences

4.2.1 Environmental issues arising from bottlenecks around the proposed TMZ

As identified in the previous paragraph, an effect of the proposed TMZ would be to increase the amount of light aircraft traffic through the bottlenecks it will create. The consultation document considers only the effects of CAT within the controlled airspace. An examination of the aviation charts for the area shows the bottlenecks, however, are close to local towns, particularly:

- Epping;
- Loughton,
- Chigwell,
- Waltham Abbey,
- Hertford,
- Saffron Waldon,
- Haverhill,
- Halstead,
- Braintree and
- Chelmsford.

Inhabitants of these towns are likely to perceive an increase in light aircraft traffic particularly on pleasant weather days when they are more likely to be in their gardens and VFR recreational pilots are more likely to be flying at relatively low heights compared with commercial traffic.

This is an environmental impact which the consultation has failed to consider (section 11.4).

4.2.2 Safety issues arising from bottlenecks around the proposed TMZ

An examination of the UK Airprox history involving GA aircraft (cf Ref 3) indicates that there has been only one incident reported which involved a light aircraft and CAT within controlled airspace (cf para 4.1.3 above). Many more of the incidents and airproxes involving light aircraft were outside controlled airspace but close to the boundaries

The proposed TMZ will have the effect of encouraging light aircraft pilots who for whatever reason do not have or operate altitude reporting transponders to cluster in the already congested areas around the edges of the airspace. Existing bottlenecks for light aircraft will be squeezed even tighter and increase yet further the risk of airborne collision between VFR traffic. The bottlenecks which would be created are close to towns. This increases the chances that a collision would result in debris landing on or near densely built-up areas.

The proposal is intended to improve safety, but by making a marginal reduction (if any) to the risks to CAT in controlled airspace, it inadvertently creates a significant increase in risk to light VFR traffic and, indirectly, to people living and working around its boundaries

4.3 Issues not covered by proposal

4.3.1 Class G airspace users who cannot fit transponders

The consultation document acknowledges (at para 5.5) that there are users of class G airspace who cannot fit transponders, yet does not consider the matter further other than to say that LoA will cover the issue.

A high proportion of the microlight aircraft are low cost types operated by owners on no more than average income. Some of these aircraft have a value less than the cost of a suitable transponder. Many others, like those operated by Saxon Microlights are at or close to the maximum empty weight and either could not take the extra weight of a transponder fit or would have to remove other equipment, such as strobe lights or radio, in order to save the weight.

Most of the earlier microlight aircraft, which still form the majority on the register, do not have an electrical system capable of running a transponder.

An examination of the G-INFO database shows that there are over 200 microlight aircraft registered within the postcode areas surrounding the proposed TMZ. In addition many light aircraft are either not fitted with transponders or are fitted with equipment only capable of mode-A returns.

The consultation document has not described what NATS propose as suitable conditions for such aircraft to operate within the area of the proposed TMZ other than to say they must be 'safe and practical'. Agreements must be reached between NATS and airspace users *before* any TMZ is imposed. It is not sufficient to impose the TMZ and then force local airspace users to negotiate from a position of a ban.

4.3.2 NATS monopoly on class G airspace if TMZ imposed

There is a requirement on NATS to carry out a consultation before proposing a TMZ for CAA agreement. Once a TMZ has been agreed, however, the authority and the power over this airspace revert to NATS. The consultation document offers the hope of a reasonable letter of agreement for affected parties, yet no clue is given about what NATS would offer within such a document.

Once a TMZ has been imposed, the affected airfields and aircraft operators will have to negotiate from a very weak position: accept the LoA, fit a transponder or move away. By failing to consider this dilemma adequately within the consultation document, NATS has done little to inspire confidence from the local stakeholders.

The consultation document offers no route for local aviation stakeholders to review, and if necessary appeal, any LoA before a TMZ is imposed. NATS must be required to agree LoA which are proportionate and practical. Any TMZ must not be activated unless and until these are in place.

If the agreed LoA include limited validity or review periods, it is necessary that procedures are in place to prevent NATS tightening restrictions over time without further consultation

4.3.3 Other options not considered by consultation

As identified in section 4.1 above, we do not believe the safety case is made out. However, if additional monitoring of traffic below the CTA is required, there are several options which have not been considered by the consultation document. The following are not suggested as complete list of alternatives, but are illustrative of options which could have been considered but have not been.

The consultation document points out that infringements add to the workload of controllers. One option not considered by this consultation is to recruit more control staff to spread the load, particularly to assign staff to monitor primary returns for potential infringements

Other technical solutions may be possible – the military appear to have little difficulty identifying the height of non-reporting air traffic. The consultation should consider the use of passive height-finding radar. Given the possibility that unintentional infringements by ‘non-compliant’ aircraft can be expected to continue even after any imposition of a TMZ, some form of passive detection would appear to be a better solution.

The consultation document mentions (at para 7.5) and subsequently ignores, the option of improving CAIT to recognise and track primary contacts. This could be supported by an initiative to encourage operators of aircraft which do not give a clear primary return to fit lightweight radar reflectors. This is similar to common practice among operators of small boats in the busy sea lanes of the Channel.

If it is considered necessary to protect the CTA from infringement by ‘non-compliant’ aircraft, then a flight information service could be provided and an MRRA introduced for traffic passing beneath or near to report height and intentions without the need to fit or upgrade transponder equipment.

Finally, it is not self-evident why the consultation document rejects without considered reason, any possibility of a TMZ of smaller dimensions than the CTA segments.

4.4 Budget

If a TMZ is imposed, to be effective it must also be enforced. NATS must budget for this. If no budget is made for enforcement and it is not enforced, then any TMZ will discriminate against those aircraft operators who do seek to remain within the rules and in favour of the mavericks who don't.

The consultation document identifies (para 9.1) a possible crossing service for ‘non-compliant’ aircraft. This will require equipment and staff. Failing that, NATS can expect extra workload as pilots make a radio call to Stansted ATC to announce their position and request a basic service. Either way, NATS must budget for extra costs.

4.5 Changed circumstances since consultation document written

The consultation document was written before the current economic crisis was recognised. It is based on traffic growth predictions which are now recognised to be invalid. NATS should review the expected traffic growth at Stansted and review the safety implications of the revised predictions.

5 Effects on Saxon Microlights

5.1 Benefits to Saxon Microlights

We are aware of no significant benefit to Saxon Microlights, our students or our PPL club members from this proposal.

5.2 Adverse effects on Saxon Microlights

Given that our operation is intended to provide low cost flight training for people on no more than average income, we find the additional investment required to fit transponders would force us to increase our charges. This could force some of our student pilots to give up flying, with the knock-on effect on our business turnover and profitability.

Microlight flying is intended as a cheap and simple form of aviation. This is reflected in the syllabus for the microlight NPPL. Operating with the extra complexity involving a TMZ and the use of transponders will extend the training period before students can fly solo and finish training for their licence. This will add significant extra workload to the new pilots and extra costs to the overall training course.

At present, our normal school aircraft is fitted with strobe lights to add conspicuity under the 'see and be seen' regime of VFR flight, especially on dull days or in evening light conditions. We anticipate that it would be necessary to remove those in order to save enough weight to fit a lightweight transponder system. Overall, we believe this would reduce the safety of our pilots.

The only other option offered by this consultation is to operate under restrictions embodied in a letter of agreement. It is impossible for us to comment on such a document because we have been given no idea what NATS would be prepared to agree to. We must, therefore, assume the worst.

6 Acceptable ways forward if TMZ is imposed

Saxon Microlights preferred outcome is that no TMZ is imposed, but if one is imposed that it has the minimum dimensions possible. We would propose a variation on the option two (sections B and D only) whereby the southern edge of section D of the proposed TMZ be drawn as a continuation of the southern edge of proposed section C as illustrated in figure 1 below. This is similar to the segment already absent from northern edge of section D. Although of no significant benefit to Saxon Microlights, a similar segment excluded from the southern portion of section B would no doubt benefit the glider operations at Wethersfield.

Even disregarding the disproportionate cost of fitting transponders to our microlight aircraft, it is unlikely that we will be able to incorporate the equipment in our present fleet due to the weight restrictions on microlight aircraft. Our main aircraft would need other safety equipment removing in order to stay within weight limits; our reserve aircraft has no spare weight capacity at all. Where the CAA to approve a concession to microlight airworthiness rules to permit the weight of a transponder to be considered as an extra weight allowance on the maximum empty weight then this objection would no longer apply.

We would hope that a suitable arrangement can be made such that our training operation can proceed unaffected. We already train our student pilots to operate the radio to a level sufficient to deal with the air/ground service provided at North Weald Airfield. We would propose that we remain in contact with North Weald Radio while carrying out training flights within an agreed distance of any TMZ and pass a message via them if we anticipate entering the TMZ.

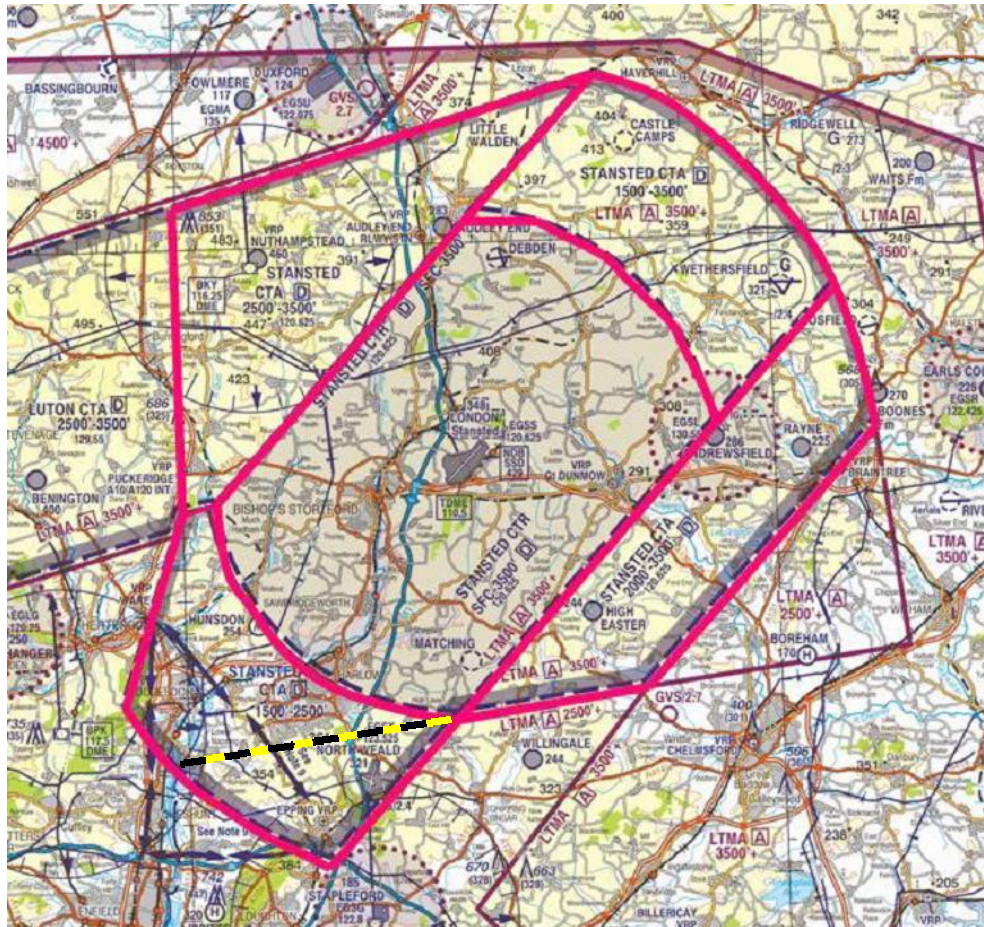


Figure 1: proposed alternative boundary to section D of proposed TMZ

Appendix 1 – Reference Documents

1	CAA Guidance on Airspace Change Process	http://www.caa.co.uk/docs/33/CAP725.PDF
2	Responses to Mode-S consultation	http://www.caa.co.uk/docs/810/Summary%20of%20Responses%20Document.pdf
3	Airprox board GA books	http://www.airproxboard.org.uk/default.aspx?catid=423&pagetype=68&gid=945
4	CAA Safety Review 2008	http://www.caa.co.uk/docs/33/CAP780.pdf
5	Hansard – railway level crossing safety	http://www.publications.parliament.uk/pa/cm200708/cmhansrd/cm071113/text/71113w0004.htm
6	Fly On Track background briefings	a) http://flyontrack.co.uk/content/important.asp and b) http://www.flyontrack.co.uk/content/statistics.asp#ID1
7	BCAR Section S	http://www.caa.co.uk/docs/33/CAP482.PDF
8	DfT road accident statistics	http://www.dft.gov.uk/pgr/statistics/datatablespublications/accidents/casualtiesmr/rcgbmainresults2007
9	DfT Aviation Safety	http://www.dft.gov.uk/pgr/aviation/safety/

APPENDIX 2 – query re numbers of risk events and consultation response

To: StanstedTMZ@nats.co.uk
Subject: Infringement numbers rather than percentage
From: Joan Walsh <joan@saxonmicro.co.uk>
Date: Thursday, 22 January 2009 12:29:13

Dear Sirs,

I am reading the consultation document with a view to making a submission as I operate a small microlight flight training business which would be directly affected by the outcome. Before I formulate my comments, however, I would be grateful if you could provide some further information:

On reading the consultation document I find it goes a lot on percentages of infringements but not on absolute numbers, nor does it identify what how many infringements actually lead to known failure of separation requirements, and how many of these led avoiding action or to an airprox.

I think these absolute figures could inform discussion in a way which the consultation fails to do, leaving us to speculate and debate around the emotional aspects rather than the genuine safety aspects.

best regards

Joan Walsh

CFI Saxon Microlights

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Joan Walsh

www.SaxonMicro.co.uk

To: Joan Walsh <joan@saxonmicro.co.uk>
Subject: Re: RG76 Infringement numbers rather than percentage
Cc: Stansted TMZ <StanstedTMZ@nats.co.uk>
From: Stansted TMZ <StanstedTMZ@nats.co.uk>
Date: Wednesday, 4 February 2009 10:48:15

Dear Ms Walsh

Proposed Stansted Transponder Mandatory Zones - Consultation

Thank you for your response to the Stansted Transponder Mandatory Zone (TMZ) stakeholder consultation.

The percentages referenced in the consultation document are percentage of the

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risk index arising from different types of infringer and are not meant to indicate a ratio of the absolute numbers. NATS controllers take as much action as possible to maintain or restore standard separation following a detected airspace infringement. Details of assessed Airproxes are published independently by the UK Airprox board and relevant information can be sourced directly from that organisation

Your comments are valued, and we appreciate you taking the time to consider the proposal. Your response has been recorded and will be included in submissions to the Civil Aviation Authority.

The consultation will close on 7th April 2009, after which all comments and suggestions will be collated and considered. A Feedback Report will be published on the NATS website shortly after the consultation closes.

Yours sincerely

Stansted TMZ Consultation Team