



**NATS**

**GREATER WASH TMZ AIRSPACE CHANGE**

**STAKEHOLDER CONSULTATION - FEEDBACK**  
**Issue 2**

## 1. Introduction

From 15<sup>th</sup> July – 21<sup>st</sup> October 2011, NATS conducted a consultation soliciting feedback on proposals to introduce two Transponder Mandatory Zones (TMZs) in the southern North Sea. This consultation period was extended further to the 21<sup>st</sup> November 2011 to allow consideration of a change to the originally proposed ceiling of the TMZs.

The TMZs are proposed as mitigation against the impact that seven large wind farm developments in the area would have on NATS radar systems.

### What is the Issue?

The wind farms will produce primary radar clutter on Air Traffic Control (ATC) radar screens. This clutter can obscure primary returns from aircraft and can interfere with radar tracking resulting in erroneous radar returns. This in turn reduces ATC's ability to observe primary-only aircraft and increases the risk of ATC not detecting a conflict between aircraft and hence is detrimental to safety assurance.

Large numbers of turbines would also lead to saturation of the radar processing systems unless blanked<sup>1</sup>.

### Proposed solution

Blanking of Cromer and Claxby primary surveillance radar (PSR) over the defined wind farm areas will be necessary. Blanking the wind farm areas will eradicate clutter on PSR but will also prevent detection and display of primary returns from aircraft in the areas.

In order to mitigate this loss of surveillance capability it is proposed that Transponder Mandatory Zones are introduced over the areas which are blanked to ensure visibility to ATC (via secondary radar) of all aircraft operating over the wind farms.

The airspace change process requires that consultation is undertaken with the relevant stakeholders. The Consultation Document provided information allowing aviation stakeholders to judge the potential impact of the proposed changes.

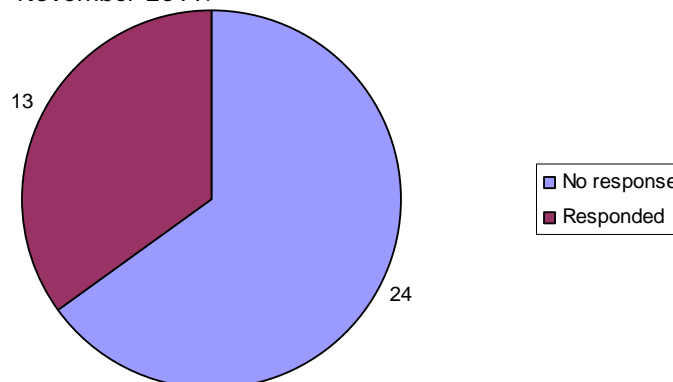
This document provides feedback to stakeholders who participated in this consultation exercise. This will be sent to all stakeholders who participated in the consultation, and will be published on the Environment/Airspace Developments section of the [www.nats.co.uk](http://www.nats.co.uk) website.

This document should be read in conjunction with the stakeholder consultation document. All acronyms and technical terms are explained in full in the stakeholder consultation document. For reference the stakeholder consultation document is available from:

<http://www.nats.co.uk/environment/airspace-developments/>

## 2. Overview of Responses

The Greater Wash TMZ stakeholder consultation was 18 weeks long, commencing on 15<sup>th</sup> July 2011 and closing on 21<sup>st</sup> November 2011.



**Figure 1. All stakeholder responses pie chart**

The initial email distribution of the stakeholder consultation document was sent to organisations

<sup>1</sup> 1000 wind turbine primary returns would saturate the radar signal processing.

representing local flying organisations, airports, heliports & aerodromes, and the National Air Traffic Management Advisory Committee (NATMAC) representatives. The consultees list is given in Appendix 1, on page 22 of the Greater Wash TMZ consultation document.

37 stakeholders were involved in the consultation, of these 13 responded. The number of responses from the consultees are summarised in the pie chart at Figure 1.

The consultation requested feedback on three possible options for the proposed TMZs. These were:

- Option 2a – 1nm buffer around the blanked areas
- Option 2b – 2nm buffer around the blanked areas
- Option 2c – 5nm buffer around the blanked areas

The responses (support /no objection /object) to each option are summarised in Figure 2. This shows that option 2c (5nm buffer) was not supported and had the highest number of objections. Options 2a & 2b were more popular, both receiving some support and a few objections. Option 2a being the smallest proposed TMZ received the most support.

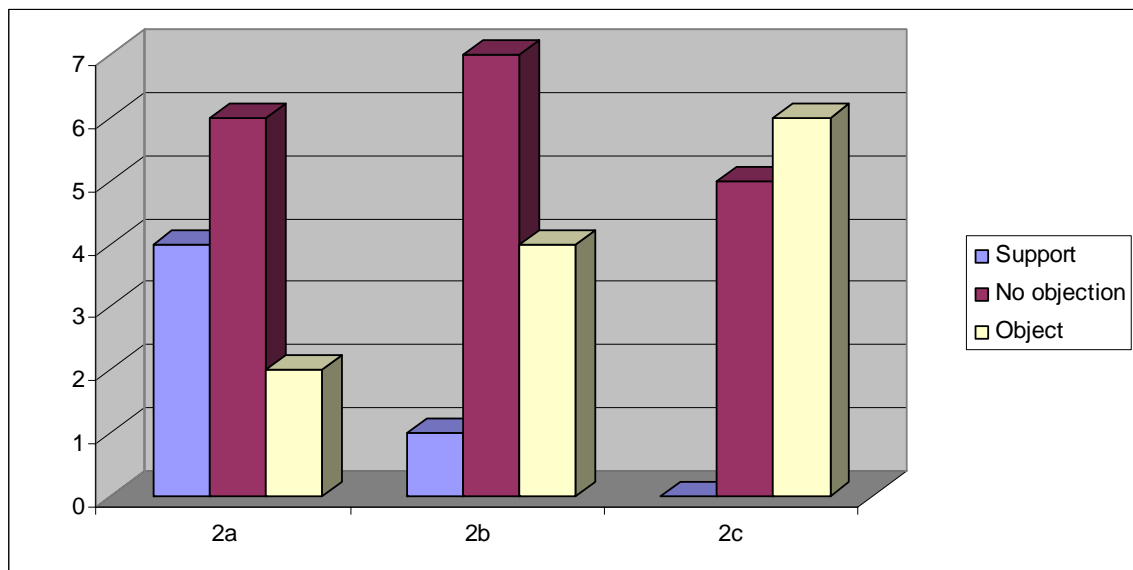


Figure 2. Responses to each option

### 2.1 Key themes arising from objections

#### Theme 1: opposition to TMZs generally

Some stakeholders expressed opposition to the use of TMZs in Class G airspace generally, since this can limit the freedom of non-transponder equipped aircraft. This theme also includes those who expressed opposition since they are unwilling or unable to fit transponders in their aircraft.

The TMZs proposed are designed purely to mitigate the impact of the blanking of primary radar over the wind farm areas. They are not part of any wider plan “to turn huge areas of the airspace which is still class G into TMZs”. Moreover the areas in question are over the sea, and are very infrequently used by general aviation flights. The vast majority of flights over the areas in question are either commercial helicopters servicing the North Sea gas fields, or Military aircraft on training sorties. Both of these groups are equipped with and operate transponders.

Many light aircraft, gliders, paragliders etc. have limited/no electrical power supply which makes fitting a transponder impractical. As a result of this some stakeholders are opposed to all TMZs on principal. However due to the offshore location of the two TMZs proposed there is virtually no requirement for this type of aircraft to fly in the airspace in question. This was acknowledged in the consultation by representatives of three GA organisations.

**Theme 2: Use of the coastline as visual reference**

General Aviation flights and military flights do commonly fly up and down the coastline either using it as a visual navigational reference, or for sightseeing purposes. When following a line feature such as the coast pilots should keep to the right of the line feature .

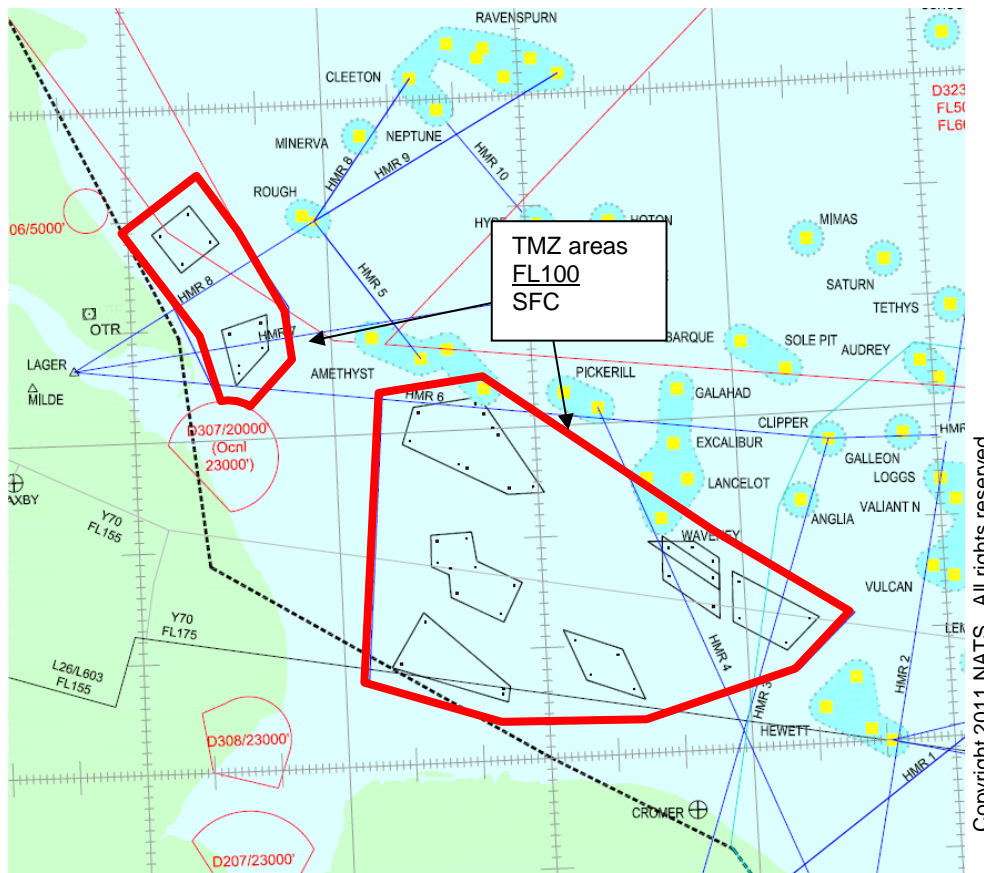
Option 2c in particular would have resulted in the TMZ extending beyond the coastline inland, and hence would have interfered with this practice for non-transponder equipped aircraft. Some stakeholders objected to option 2c on these grounds.

Option 2b will not impinge on the coastline and will leave at least 1.37nm between the coastline and the TMZ at its closest point. Non-transponder equipped aircraft will still be able to use the coastline as a navigational reference, and by following the coast they will automatically be keeping clear of the proposed TMZs.

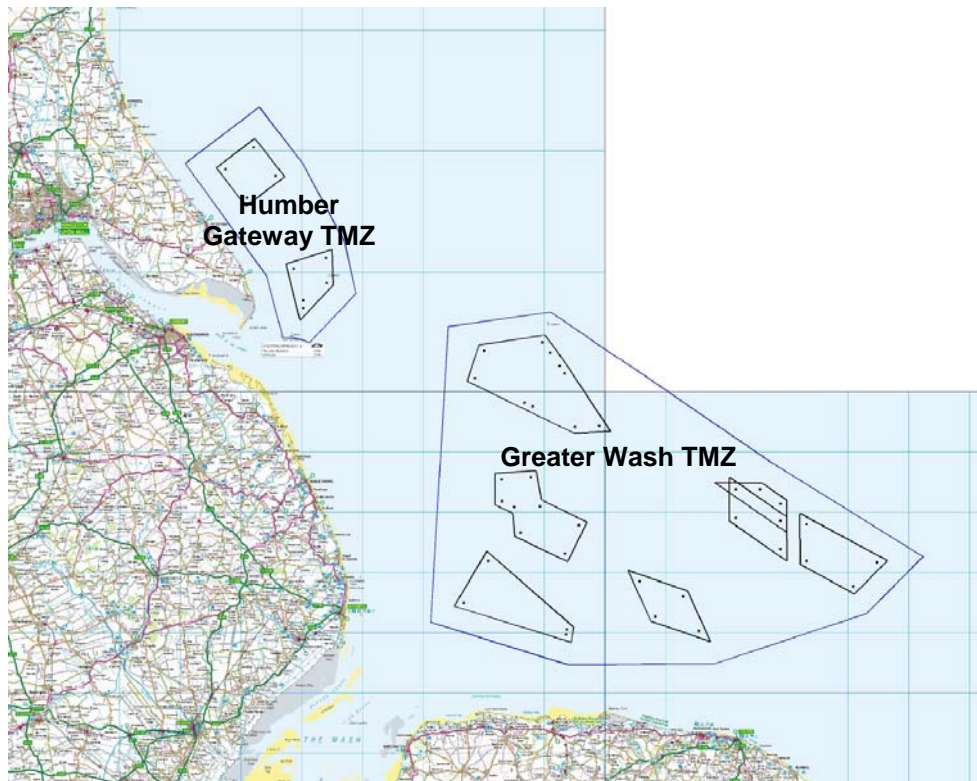
**3. Summary of intended airspace change proposal**

As a result of careful consideration of all consultation responses, NATS will proceed with an airspace change proposal (ACP) to the CAA. The basis of this proposal will be for the introduction of 2 new TMZs as per Option 2b (2nm buffer), as shown in Figure 3. The proposed TMZ will extend from the surface to FL100. The TMZ with 2nm buffer strikes the best balance between the competing needs of the ATC requirement for a buffer around the blanked areas, and the GA community's desire for TMZs to be as small as practical, and not to impinge on the coastline.

This solution will allow non-transponder equipped GA aircraft to continue to fly along the coastline.



**Figure 3 TMZ with 2nm buffer around blanked areas (Airspace background)**



**Figure 4 TMZ with 2nm buffer around blanked areas (OS background)**

Two TMZs related to offshore wind farms (Thanet TMZ and London Array TMZ) were approved by the CAA DAP on the 9<sup>th</sup> September 2011 (during the Greater Wash consultation period). These TMZs have a buffer of 2km around the blanked areas, however the aircraft operating in the vicinity of these TMZs does not include the same high proportion of fast military jets as is common in the Anglia Radar area of responsibility.

A typical military fighter (e.g. Eurofighter Typhoon - cruise speed 400kts) flying at 400kts will cross the 2nm buffer in 18 seconds (24 seconds at 300kts). A civil aircraft flying at the Class G airspace speed limit below FL100 of 250kt, will cross the 2nm buffer in 29 seconds.

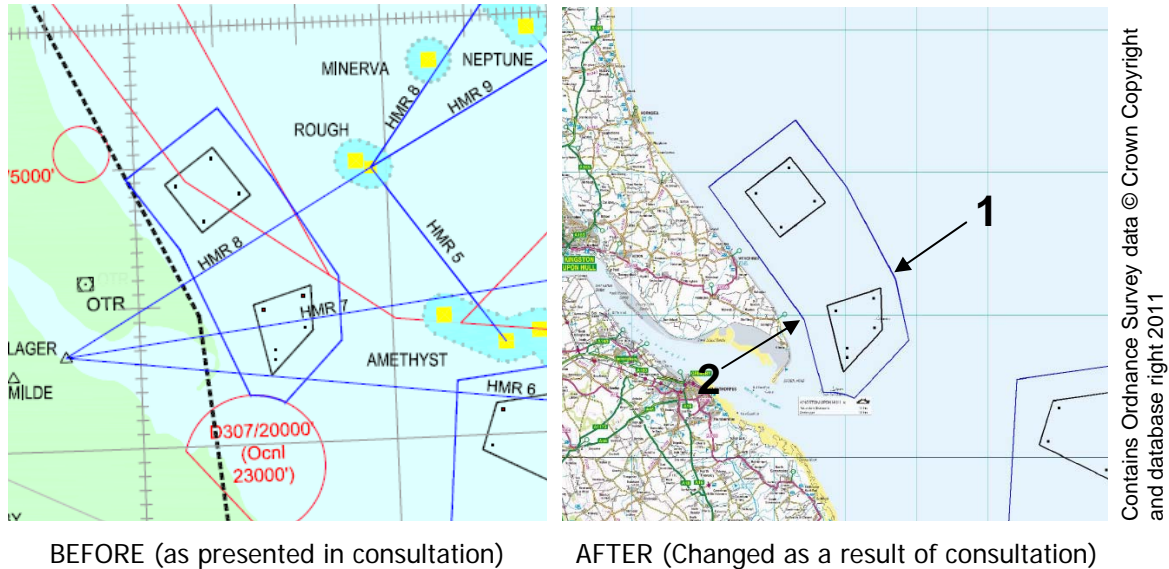
The ATC requirement is that a buffer of at least 2nm is necessary to provide sufficient time for ATC to recognise that a primary only aircraft has penetrated the TMZ before it disappears from the radar screen (within the blanked area). Option 2a (1nm buffer) although popular with General Aviation stakeholders (due to the smaller size of TMZ), does not, on balance, provide sufficient lateral buffer. i.e. it does not give sufficient time to identify a primary-only aircraft which is inadvertently entering the TMZ, before it disappears off the radar.

**Changes made as a result of consultation**

The purpose of consultation is to identify issues which may not have come to light previously. Three changes have been made to the design as a result of feedback from consultation.

1. Following feedback from the MOD the NE edge of the Area 1 TMZ has been moved so that it is aligned with the boundary of D323B.
2. Following feedback from GA, the SW edge of the Area 1 TMZ has been moved to give a wider corridor for non-equipped VFR flights to fly along the coastline. Northbound VFR traffic will be able to follow the coastline observing 'ANO Rules of the Air Rule 16, Right-hand traffic rule'. At its closest point to the coast the TMZ is 2.53km (1.37nm) from the coastline.
3. The ceiling of the TMZ presented in the consultation was FL65. As a result of feedback this has been raised to FL100. If the ceiling were FL65, non-transponder equipped aircraft could over-fly the TMZ (e.g. at FL70). In this case ATC would observe a primary return with no altitude information entering the TMZ. Hence if providing a deconfliction service they would have to assume that this aircraft was infringing the TMZ and would attempt to provide 5 miles separation from the return, for traffic receiving a service. Above FL100 transponder

carriage is mandatory<sup>2</sup>. Hence if the TMZ extends up to FL100, over-flight of the TMZ by non equipped aircraft would not be permitted. The consultation was extended to allow further feedback to be solicited on the raising of the ceiling to FL100, since this option was not presented at the outset of consultation. Of the 13 respondents to the first round consultation, 77% responded to the extended consultation. There were no objections to the proposal for the TMZ ceiling to be FL100.



**Figure 5 Changed areas**

**4. Further correspondence & feedback**

In the event that a representative organisation wishes to present **new** evidence or data to the Director of Airspace Policy, for consideration prior to making his regulatory decision regarding this proposal, the representative organisation must submit, in writing, the information to the following address:

The Director (Greater Wash TMZ ACP)  
 Directorate of Airspace Policy  
 CAA House  
 45-59 Kingsway  
 London WC2B 6TE

<sup>2</sup> For all but a few exceptions of aircraft (see UK AIP GEN 1-5-14)