



# Ministry of Defence

Air Command Secretariat  
Spitfire Block  
Headquarters Air Command  
Royal Air Force  
High Wycombe  
Buckinghamshire  
HP14 4UE

**Our Ref: FOI2015/11060**

[REDACTED]

5 January 2016

Dear [REDACTED]

Thank you for your email of 3 December 2015 requesting the following information:

*"Please provide a copy of the procedures detailed in the RAF Lossiemouth flying order book, or in any documents held by Air Traffic Control Squadron at RAF Lossiemouth, to address the impacts of wind turbines on the provision of air traffic radar services, in accordance with paragraph 2 of the Acceptable Means of Compliance of Regulatory Article 3236."*

I am treating your correspondence as a request for information under the Freedom of Information Act 2000 (FOIA).

A search for the information has now been completed within the Ministry of Defence, and I can confirm that all the information in scope of your request is held.

The following is an extract from the RAF Lossiemouth Flying Order Book Order 3, paragraph 16b:  
"Application of Service – Visual Flight Rules (VFR). Traffic Service (TS) will be provided on departure and recovery unless aircrew request an upgrade to Deconfliction Service (DS). To reduce R/T loading, ATC will not pass terrain clearance or surveillance cover warnings to RAF Lossiemouth-based aircraft during VFR departures or visual recoveries below the Terrain Safe Level. Whilst flying these profiles, aircrew will remain responsible for their own terrain separation and traffic information will be limited from all around as aircraft transit close to the base of radar cover. Additionally, permanent returns caused by windfarms to the South will not be called to RAF Lossiemouth-based aircraft departing VFR or conducting a visual recovery."

In addition attached at Annex A is an April 2013 document entitled windfarm separation procedures which forms part of the Air Traffic Control Squadron's training package and controller reference material. Two redactions have been applied under exemption 40(1) (personal information). As an absolute exemption there is no requirement to conduct a public interest test.

If you are not satisfied with this response or you wish to complain about any aspect of the handling of your request, then you should contact me in the first instance. If informal resolution is not possible and you are still dissatisfied then you may apply for an independent internal review by contacting the Information Rights Compliance team, 1st Floor, MOD Main Building, Whitehall, SW1A 2HB (e-mail [CIO-FOI-IR@mod.uk](mailto:CIO-FOI-IR@mod.uk)). Please note that any request for an internal review must be made within 40 working days of the date on which the attempt to reach informal resolution has come to an end.

If you remain dissatisfied following an internal review, you may take your complaint to the Information Commissioner under the provisions of Section 50 of the Freedom of Information Act. Please note that the Information Commissioner will not investigate your case until the MOD internal review process has been completed. Further details of the role and powers of the Information Commissioner can be found on the Commissioner's website, <https://ico.org.uk/>.

Yours sincerely



Secretariat 3a  
Air Command

Part 1: Proposal	
<b>Details of Change</b>	<p>Ref A: ATC Safety Survey 03/09                      Ref B: MMATM                      Ref C: Cap 493                      Ref D: CAP 774</p> <ol style="list-style-type: none"> <li>1. The purpose of this safety assessment is to formally identify and adjust, where necessary, the current local procedures for calling and avoiding the Cairn Uish and Ballindalloch wind farms as highlighted in Ref A. This safety survey highlighted a number of recommendations, which were subsequently employed to ensure that best efforts were being made to maintain standard separation.</li> <li>2. Recommendations that we implemented from Ref A include:                             <ol style="list-style-type: none"> <li>a. All radar screens should display 5nm range rings around the Cairn Uish and Ballindalloch wind farms, measured from the centre of the wind farm return.</li> <li>b. Lossiemouth radar controllers should aim to achieve 5nm separation between primary returns of the wind farms and aircraft under their control on a De-confliction Service (DS) iaw Ref C&amp;D</li> <li>c. Lossiemouth radar controllers should aim to achieve a gap between the primary returns of the wind farms and an aircraft under their control under a Traffic Service (TS), whilst remaining aware that they are unable to turn such aircraft below terrain safe levels (TSL) iaw Ref C&amp;D.</li> <li>d. Lossiemouth radar controllers should be reminded of the risk of the wind farm primary radar returns masking the radar returns of other aircraft operating in the vicinity and limit service accordingly iaw Ref D.</li> </ol> </li> <li>3. At present the SID23 South rolls out on a final heading of 220°. Where wind strengths are low this will allow prescribed separation requirements to be maintained. During such times where a stronger wind is blowing aircraft may drift closer to the primary radar returns, the SID ensures collision avoidance criteria is satisfied, but possibly not prescribed separation. for any ac climbing out IFR and requiring a DS.</li> <li>4. It is also necessary to remove ambiguity from the calling of traffic prior to letting aircraft depart the SID on own navigation. In order to prevent coercing the aircraft captain into a course of action that would potentially place him in confliction the following phraseology is to be used only after the captain has requested own navigation. <b><i>“callsign, traffic (position), no direction, no height believed to be in the vicinity of wind farms, own navigation.”</i></b> This should only be used where the aircraft in question is in receipt of a TS. Any aircraft under a DS should maintain the SID (outbound), or be positively vectored to adhere prescribed separation. The above phraseology also applies when calling traffic to transits close to the wind farms.</li> <li>5. Aircraft departing VFR from Lossiemouth are automatically placed under a BS, unless the pilot requests otherwise. If aircraft anticipate</li> </ol>

	requiring a DS they need to be aware of the perceived risk from wind farms and depart IFR where applicable.
<b>Date for implementation</b>	ASAP
<b>Key Stakeholders</b>	SATCO STAN(F) 202 Sqn

<b>Part 2: Hazard Analysis</b>						
<b>Hazard</b>	Wind farms to the south of the airfield.					
<b>Undesirable Event</b>	Loss of prescribed separation against unknown primary radar contacts in the vicinity of known wind farms					
<b>Causal Factor</b>	Non squawking ac is masked by primary returns from the wind farm.					
<b>Pre-Existing Barriers</b>	SID 23 South is designed to achieve prescribed separation for DS traffic on climb-out.					
<b>Pre-Existing Mitigations</b>	<p>Traffic information and avoiding action provided iaw Ref D.</p> <p>Controllers vector ac and achieve a gap on the primary radar returns when providing a TS.</p>					
<b>Consequence</b>	Prescribed separation lost.					
<b>Worst Credible Consequence</b>	Loss of separation with a non squawking aircraft in the vicinity of either Cairn Uish or Ballindalloch wind farms.					
<b>Pre-mitigated Safety Risk Assessment</b>	<b>Sev</b>	4	<b>Prob</b>	Probable	<b>Risk</b>	C
<b>Potential Additional Control Measures</b>						
<p>A 5nm ring can be drawn round both Cairn Uish and Ballindalloch wind farms, measured from the centre of the wind farm return.</p> <p>Traffic information called to ac informing them that the primary contacts are in the vicinity of known wind farms.</p>						
<b>Control Measures for implementation</b>	A.					
<b>Post-mitigated Safety Risk Assessment</b>	<b>Sev</b>	4	<b>Prob</b>	Remote	<b>Risk</b>	D

<b>Part 3: Action Plan</b>				
<b>Ser No</b>	<b>Actions Required</b>	<b>Action Lead</b>	<b>Due Date</b>	<b>Date Completed</b>
1	5nm range rings to be added to radar maps	GRMS	ASAP	Complete
2	Training package updated and standards bulletin article ref calling of traffic/windfarms	UTO/UStanO	Asap	Complete

<b>PART 4: Key Stakeholders Comments</b>			
STAN (F) and 202 Sqn content.			
<b>Name/Appt</b>		<b>Date</b>	Feb 13

<b>Part 5: BM Unit Cdr Comments</b>			
SATCO approved.			
<b>Name/Appt</b>	Sqn Ldr [REDACTED] SATCO	<b>Date</b>	Feb 13

**Part 9: Closure**

All additional mitigations implemented and added to order books. SA closed.

**Name/Appt**

██████ / USMO

**Date**

**Apr 13**