MOD 0/30

Philip Coppel

From: DE Ops North-LMS7 (Chafer Julian Mr) [Julian.Chafer@DE.MOD.UK]
Sent: 12 March 2008 14:36
To: SPD Ops-Range Controller
Cc: Philip Coppel; Estelle Dehon; Colin Deane
Subject: 20080312-Spadeadam and wind turbines-U
Importance: High
Attachments: 20080311-All three wind farms-U.pdf

Andy,

Further to telephone conversations earlier.....

Firstly, are you aware of any formal or informal assessment of the likely effects of the proposed turbines on one or more of the threat radar/surveillance etc. systems at Spadeadam? As you know, the decision was taken in late 07 that, although the turbines would be a physical obstacle to aircraft using the range, the effect on exercises etc. would be manageable.....perhaps as part of that decision making process someone considered the effects of the turbines on the threat radars etc..?

Second.....please find attached a plan showing the positions of the proposed turbines which I hope is of help. The Steadings turbines will be 125 metres high and the Ray and Green Rig turbines 100m.

<<20080311-All three wind farms-U.pdf>>

VMT

Julian

Julian Chafer FRICS

Head of Safeguarding
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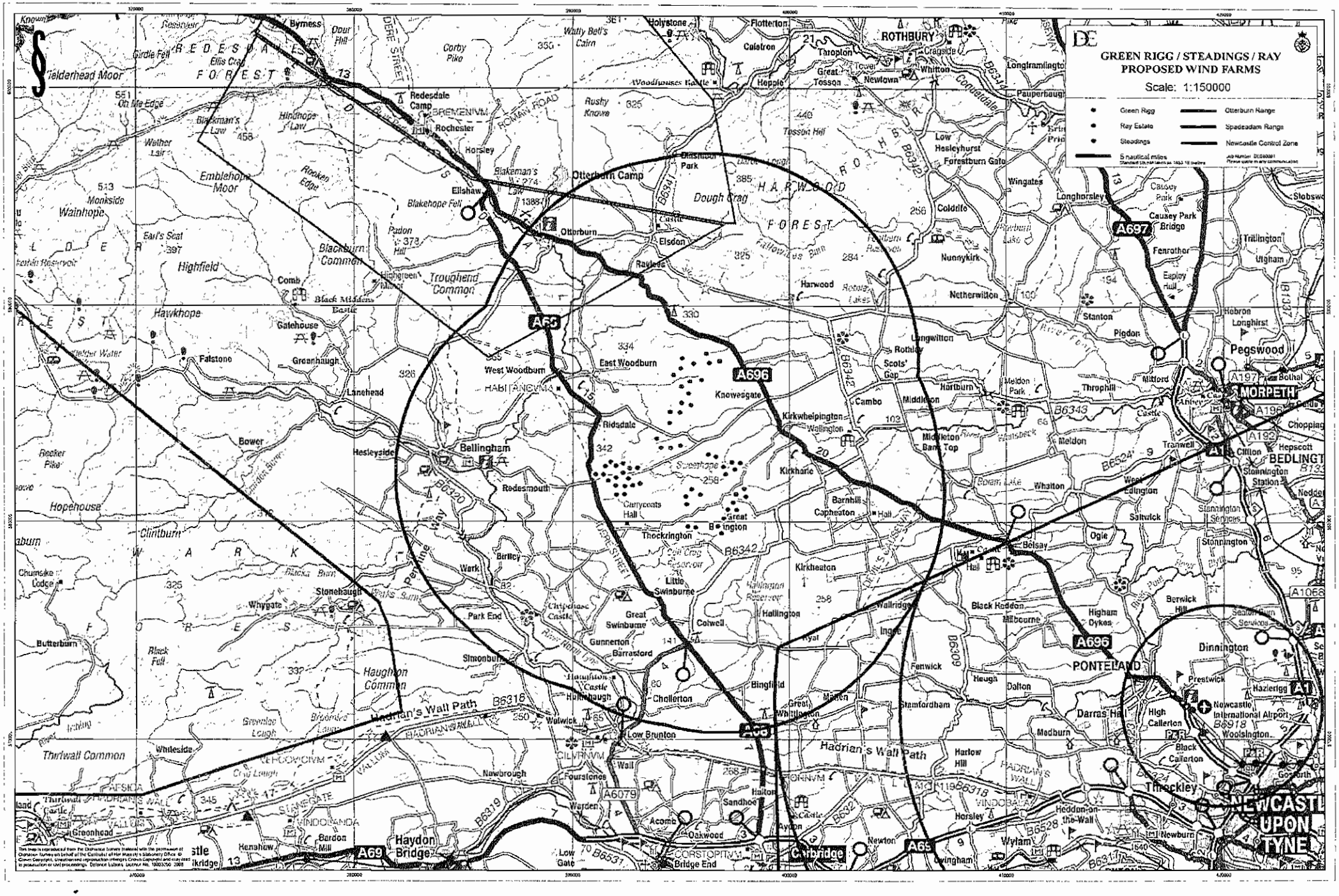
GREEN RIGG / STEADINGS / RAY
PROPOSED WIND FARMS
Scale: 1:150000
Green Rigg
Ray Estate
Steadings
5 nautical miles
Otterburn Range
Spadeadam Range
Newcastle Control Zone
Redesdale Camp
Otterburn Camp
Chesters
Housesteads
Vindolanda
Corbridge
Haydon Bridge
Hexham
Bellingham
Otterburn
Rothbury
Morpeth
Pegswood
Ponteland
Newcastle International Airport
Throckley
Newcastle upon Tyne
A68
A696
A697
A1
A69
A63
A65

Philip Coppel

From: DE Ops North-LMS7 (Chafer Julian Mr) [Julian.Chafer@DE.MOD.UK]
Sent: 14 March 2008 06:06
To: Philip Coppel
Cc: Colin Deane
Subject: 20080313-Spadeadam and wind turbines-U

Philip,

Please see message below.

Thanks

Julian

Julian Chafer FRICS

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From: Andrew Coleman [mailto:rangecontroller@spadeadam.raf.mod.uk]
Sent: 13 March 2008 14:45
To: DE Ops North-LMS7 (Chafer Julian Mr)
Subject: release-authorised.RE: Release-authorised: 20080312-Spadeadam and wind turbines-U

Julian,

No, I was not aware of any formal study of the effect on threat radar ops, at least nothing that was discussed with me or my immediate colleagues. The threat radars have, hitherto not been a factor nor were they when the developers visited some time ago. The focus of attention was the Watchman

Thank you for the plan. The location represents an area down which aircraft coming off tankers from the east use with some regularity. They are smack bang in the way of radars postioned to the east and North of the Range and in my opinion they represent a significant change to an already well populated "clutter map".

Hope this helps.

AJC

-----Original Message-----

From: DE Ops North-LMS7 (Chafer Julian Mr) [mailto:Julian.Chafer@DE.MOD.UK]

Sent: 13 March 2008 11:06

To: SPD Ops- Range Controller

Cc: Philip Coppel; Estelle Dehon; Colin Deane

Subject: Release-authorised: 20080312-Spadeadam and wind turbines-U

Importance: High

Andy,

Further to telephone conversations earlier.....

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<< File: 20080311-All three wind farms-U.pdf >>

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News

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2008

June: CAS is delighted to welcome Pete Brown on board as our new sales executive. Pete will help build on our successful Workpro range of products.

A month for congratulations to CAS employees. Congratulations to CAS Sales director Clare Brannigan who raised almost £750 for Breakthrough Breast Cancer by doing a sponsored walk - in the rain. Well done Clare.

Also well done to our own "Deep Diving Dare Devil" Support Analyst Marc Forrest who spent an evening diving with the sharks at Deep Sea World in South Queensferry. Marc has some pretty impressive photo and video evidence of his escapade.

Above the water, congratulations also go to CAS Managing Director (Dave Wells) who qualified as an RYA Day Skipper - or is it Dazed Kipper ?

May: Kerry Leishman represented CAS by taking part in the ScotlandIS program to raise the profile of the computing industry and to highlight career opportunities to school pupils. The program was aimed at third-year school pupils studying for Standard Grades and was held at Edinburgh University.

Attendees had the opportunity to design computer games, build robots, experiment with the latest advanced computers and learn how hackers break into computers. There was also a mock "Dragons Den", for young technology entrepreneurs who want to turn their own inventions into businesses.

April: April was an outstanding month during which CAS, along with our Scottish Partner – Real Time, signed a contract for the development and support of a Children's Panel electronic rota management system for the Scottish Government.

Also during this months CAS won contracts for the supply of our increasing successful Workpro-Complaints system to two additional Ombudsman organisations. The ink is still wet on the contracts so stand by for further details soon.

March: During the month of March CAS were delighted to receive a number of new contracts including support and maintenance to the Scottish National War Memorial, our Gunfire Noise Analysis Tool (GNAT) for the British Army, the United States Air Force in Germany, and the Northern Ireland Ombudsman.

March: The Public Services Ombudsman for Wales (PSOW) has awarded CAS a contract to supply an intranet to be used throughout the organisation.

February: RAF Spadeadam has placed orders with CAS for a number of exciting projects including the integration of a new radar and new threat systems.
Also this month the Scottish Children's Reports Administration (SCRA) awarded CAS a contract to pilot new technology and software in the Hearings rooms to assist panel members in recording the outcome of hearings.

January: Waterwatch, the public complaints body for the water industry in Scotland, has awarded CAS a 2 year contract for the support and maintenance of their systems plus additional hardware and software.

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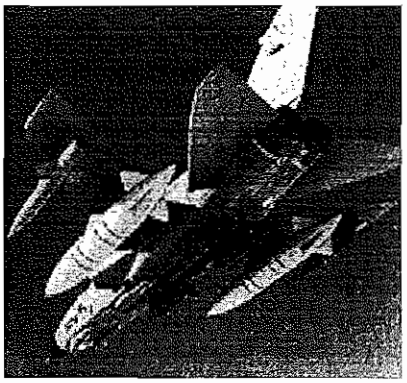
Defence

Electronic Warfare - **RAF Spadeadam**



The Mission Critical Spadeadam Integrated C3 System (SPICCCS) is based at the UK's only Electronic Warfare Tactics Range at RAF Spadeadam. The system allows the scheduling of aircraft onto the range area, helps control the engagements throughout the mission and records all aircraft and threat events in real-time. At mission end, the recorded data are collated into a Post Mission Report which is transmitted to the aircrew base and is available for debriefing purposes as soon as the aircrew land.

Participating aircraft are identified by IFF mode C "squawk" so there are no requirements for any special on-board pods.

A range of ground based threat simulators and instrumented weapons systems are capable of emitting across the whole electronic spectrum and can simulate anything from simple jamming to sophisticated "double-digit" Surface-to-Air and Artillery systems.

Debrief material is transmitted directly to the aircrew home base, via standard telephone lines, within 20 minutes of the end of the training sortie and can be replayed on a standard desktop PC.

By fusing the threat system pointing data and emission information with the aircraft position data and ground observations, CAS have created a powerful, ultra-realistic and cost effective training environment which, through timely feedback to participating aircrew, helps maximise the benefit of every flying hour.

The distributed nature of the systems architecture ensures that constituent subsystems can be enhanced and upgraded with minimal impact to the overall system, thereby ensuring maximum flexibility to incorporate new equipment interfaces and facilities.

The Mission Critical SPICCCS system is based on a number of functional sub-systems :

- SCHEDULING
  - To ensure that the number of aircraft actually flying remains manageable
  - To ensure that the threat scenarios, required by the aircrew, are set-up and available
- RADAR INTERFACE
  - Takes in data from a number of Secondary Surveillance Radars (SSRs) and establishes best position fix for aircraft
- THREAT INTERFACE
  - Real-time communication between Range Control Centre and ground based Threats
  - Allows threat operators to be instructed on which aircraft are to be engaged
  - Allows unmanned threats to be command driven from SPICCCS
  - Allows threat pointing, event and signal data to be recorded

- ELECTRONIC WARFARE THREAT CO-ORDINATOR
  - Dedicated plan position view allowing threats to be co-ordinated against mission aircraft
- RANGE CONTROLLER
  - Dedicated plan position display allows total control of range assets
- ADMINISTRATION
  - Allows range and system parameters to be modified
- REAL-TIME EVENT LOGGING
  - Records in real-time :
    - Aircraft Positions
    - Aircraft Flight Level and Height
    - Threat pointing data (Azimuth, Elevation and Range)
    - Threat signals
    - Threat events
    - Operator observations
- DEBRIEF SYSTEM
  - Brings together all recorded data and sorts by mission and aircraft
  - Allows data editing for enhanced debrief
  - Transmits data to aircrew home base for analysis using EGPMR

>>EGPMR

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Defence

Electronic Warfare

In 1982 CAS were approached by the UK Ministry of Defence with a request to install a computer at RAF Spadeadam. Over the years this single computer has "grown" into a sophisticated Command and Control System, called SPICCCS, which now co-ordinates all of the training assets at the RAF Spadeadam Electronic Warfare Tactics Range near Carlisle. CAS also developed a C3 system for use at the Multinational Aircrew Electronic Warfare Tactics Facility (MAEWTF) at the Polygone Range in Germany. The Polygone C3 system, called EPICCCS, is used by the three signatory nations (USA, Germany and France) who operate the facility.

The mission critical SPICCCS and EPICCCS systems provide a realistic EW training environment which allows aircrew to develop, and practice, the tactics necessary to ensure mission success and survival. The systems provide Command, Control and Communications (C3) facilities which link a Range Control Centre with ground based Threat Equipment. CAS systems allow aircraft/threat engagements to be controlled and, also record event and position data for post mission analysis.

To complement the SPICCCS system, CAS provide a Post Mission Debrief Systems (EGPMR) which allows missions to be replayed and the effectiveness of the tactics analysed. Similarly the EPICCCS system uses the, ACS developed, EPICCCS Replay System (ERS). This allows Polygone participants to replay and analyse their missions.

RAF Spadeadam

Polygone

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Case Study

Command, Control and Communications System

Customer

The Royal Air Force (RAF) operates the only low level land-based Electronic Warfare (EW) Tactics Range in Europe. The Range is located at RAF Spadeadam and straddles the border between England and Scotland. The role of the Range is to provide an environment which enables aircrews from all NATO countries to develop, evaluate and practice the EW tactics necessary to defeat ground based anti-aircraft systems.

Business Issues

The RAF needed a system to support operations at RAF Spadeadam and one which would help maximise the training value of missions flown at the range. The need was for a system which would :-

- ensure that the resources needed to fulfil the aircrew training requirements were available and in place when the aircrew arrived
- help co-ordinate the threats on the range to ensure that the training requirements of the aircrew were met
- provide timely and accurate feedback to the aircrew

The system would also have to be flexible enough to cope with the ever changing threat scenarios that aircrew were likely to come up against when they were deployed in hostile territories.

CAS solution

CAS worked closely with the RAF to understand their objectives and develop a Command, Control and Communications (C3) system. The system, which has been in use since 1982, is a key element in the provision of the EW training environment necessary to allow aircrew to develop, and refine, the tactics which are essential to mission success and survival in a hostile electromagnetic environment. A range of ground based threat simulators and instrumented weapon systems simulate every possible threat to aircraft. These threat systems feed back data, in real-time, to a co-ordination centre, where it is fused with positional information from the various tracking radars and displayed and recorded. Within 20 minutes of the mission ending this processed data is waiting at the aircrew's home base for immediate replay and analysis. This timely distribution of post mission information, coupled with the ability to replay the mission whilst it is still fresh in the pilots mind, maximises the value of the training sortie.

Benefits

CAS have created a powerful, ultra-realistic and cost-effective training environment which, through timeous feedback to participating aircrew, helps maximise the benefit of each flying hour.

John Gilbert, Squadron Leader - Officer Commanding Operations at RAF Spadeadam 1989 to 1999, comments, "During my ten years working closely with CAS, I have nothing but praise for their professionalism and work ethic. The company was always flexible and responsive to the fluid, and at times rapid changes, that our operational needs dictated. Given the "moving goal-post syndrome" that such fluid situations result in, it was most refreshing to work with a company that worked within the spirit of a contract and not to the letter. Their innovative and professional attitude to the Service's requests have always resulted in robust, flexible and cost-effective solutions."