

**SAFETY OCCURENCE REPORTS – WIND FARMS, WIND TURBINES,
WINDMILLS**

Report ID – asor\Marham - RAF\31 Sqn\Tornado\10\133863

Incident Type - Hazard/Observation

Date – 09/09/2010

Title – Windfarm being erected

Perceived Severity – C - Low

Description - During flying operations in LFA 14 our aircraft routinely observe unlit masts of approximately 150-250ft constructed of thin metal frame supported by guy-wires which are uncharted and very difficult to see. In the last year we noted approximately 20 of these in LFA 14. Through discussion with wind farm owners on SAR procedures it has emerged they plan to erect at least 30 more masts in the next 6 months around the local area. According to OC LFOS there are approximately 14000 wind farm applications currently lodged with regional planning offices and twice as many anemometer mast applications.

Report ID – asor\SARF - RAF202 Sqn D Flt - Lossiemouth\Sea King\11\5961

Incident Type - Hazard/Observation

Date – 26/07/2011

Title – Uncharted Obstructions - meteorological survey masts - MAA
Feedback 12-10 refers

Perceived Severity – A - High

Description - A wind farm is being erected ivo 5308.602N 00108.733E. The wind farm is approx 10nm North of Sheringham on the Norfolk coast. It is approx 3nm by 3nm with approximately 6-7 masts under construction and a White lattice crane approximately 75'-100'. The wind farm is not yet marked on any charts and due to the area being popular for TF let-downs, could become a hazard to aircraft flying in bad weather days.

Report ID – asor\SARF - RAF202 Sqn D Flt - Lossiemouth\Sea King\11\9650

Incident Type - Hazard/Observation

Date – 03/12/2011

Title – Uncharted Obstructions

Perceived Severity – C - Low

Description - Over the course of a 5 day detachment to Glancorse Barracks, Edinburgh, several unlit anemometer masts up to approx. 200 ft AGL were sighted. They were plotted on local area maps for the deployment, however the information has since been lost. The masts were sighted with the closest passing within 500 meters of the aircraft position. None of the crews had to carry out avoiding action during the course of the week. The masts are believed to be anemometers assessing wind with a prospect of erecting wind farms, which are also growing in size, not necessarily in accordance with the latest up to date maps. The observation of the masts was a potential hazard to aircraft low flying as they are not marked and all between approx. 150-250 ft AGL. The masts were thin and difficult to see by day, and would have been near impossible to see at night being unlit.

Report ID – asor\SARF - RAF202 Sqn E Flt - Leconfield\Sea King\11\9990

Incident Type - Hazard/Observation

Date – 15/12/2011

Title – Manual CALFING and CHADING of maps

Perceived Severity – B - Medium

Description - Low level poor weather transit en-route to SAROP using standard route over Lleyn Penninsula. As ac crested over brow of hill a white wind turbine was spotted to the right of the flight path, ht approx 100ft. This turbine appeared to be a new installation which has been placed on a well used poor weather route for rotary based ac. Due to priority of SAROP I could not determine if there were any further turbines to be erected.

Annex C

Report ID – asor\Benson - RAF33 Sqn\Puma\12\11309

Incident Type - Hazard/Observation

Date – 01/02/2012

Title – Unlit obstruction sighted 50 NM radius of Edinburgh

Perceived Severity – C - Low

Description - On a LL Nav route, an uncharted Wind Turbine was spotted at SX 33798112 to the north of out track.

Report ID – asor\SARF - RAF22 Sqn C Flt - Valley\Sea King\12\11748

Incident Type - Hazard/Observation

Date – 09/02/2012

Title – UNCHARTED MAST/OBSTRUCTION

Perceived Severity – A - High

Description - Routinely it is required that the Flight Operations Assistant on a SAR Flight manually adds CALF and CHAD information to maps and charts. This requires that a latitude and longitude or grid reference is read from a booklet, plotted on the relevant chart and the amendment is then physically drawn onto it. This, in isolation, is not a particularly onerous task or one which is prone to error. However, occasionally up to a hundred amendments per cycle are required to be plotted and this must be repeated on up to a dozen copies of some charts. If a chart is used by the aircrew or becomes dog eared, that chart must be replaced and the amendments re-done. On average, over a thousand hand plotted and written amendments are required per month, taking many hours of work. Cumulatively over a period of months of years, the task becomes mindless, very onerous and extremely prone to error.

The increase in the reporting of unmarked maps and the proliferation wind farms is adding to this burden but also has the secondary effect that it is physically very difficult to hand draw multiple obstructions in a localised area on a chart while keeping this important information legible and easily understandable by the aircrew in flight. In basic terms it is a messy way to display important obstruction information to aircrew.

Report ID – asor\SARF - RAF202 Sqn E Flt - Leconfield\Sea King\12\11445

Incident Type - Hazard/Observation

Date – 15/02/2012

Title – Wind Farm construction site spotted

Perceived Severity – C - Low

Description - Aircraft was transiting back from check test flight, and at position TA 080440 a wind farm construction site was spotted. There appear to be 8 wind turbines under construction, and although not yet a vertical obstruction, it was certainly a shock as I was that day's SAR Op Captain, and the location is approx 2nm from my home airfield. This location is not subject to a NOTAM, and nor was I informed informally of this location.

Report ID – asor\SARF - RAF202 Sqn D Flt - Lossiemouth\Sea King\12\12317

Incident Type - Hazard/Observation

Date – 14/03/2012

Title – Uncharted obstructions

Perceived Severity – A - High

Description - During a Medium Level Navigation sortie the following Uncharted obstructions were found: 250' Mast at NJ 4543 4323; 3 250' Wind Turbines at NJ 557 576, 562 583, 499 570

Report ID – asor\SARF - RAF202 Sqn E Flt - Leconfield\Sea King\12\12500

Incident Type - Hazard/Observation

Date – 20/03/2012

Title – Uncharted Wind Turbine

Perceived Severity – C - Low

Description - A single wind turbine has been erected just outside the Leconfield perimeter - TA 02814493 - approx 150'.

Report ID – asor\SARF - RAF22 Sqn A Flt - Chivenor\Sea King\12\15066

Incident Type - Hazard/Observation

Date – 10/06/2012

Title – Unmarked Wind Turbine near Boscastle

Perceived Severity – C - Low

Description - During a 500' transit returning from a SAROP, the aircraft flew in close proximity to an unmarked wind turbine at position SX 1567 9109. Whilst the turbine was between two sets of marked powerlines, the height of the turbine (Est 250' agl) exceeded the height of the tallest powerlines, posing a hazard if crossing in poor weather.

Report ID – asor\SARF - RAF202 Sqn D Flt - Lossiemouth\Sea King\12\16890

Incident Type - Hazard/Observation

Date – 27/07/2012

Title – Uncharted Vertical Obstruction

Perceived Severity – A - High

Description - During a routine SAR training sortie an Uncharted 250ft Wind Turbine was spotted at Grid Ref NJ 10255573

Report ID – asor\Lossiemouth - RAFXV(R) Sqn\Tornado\12\17664

Incident Type - Hazard/Observation

Date – 20/08/2012

Title – Uncharted Obstruction

Perceived Severity – C - Low

Description - Single wind turbine located at N58 19.05 W006 42.55.

Report ID – asor\SARF - RAF202 Sqn D Flt - Lossiemouth\Sea King\12\17831

Incident Type - Hazard/Observation

Date – 25/08/2012

Title – UNMARKED WHIP AERIAL

Perceived Severity – A - High

Description - During a low level navex, a whip aerial style vertical obstruction similar to the anemometer masts placed ivo new wind turbines was observed at NH543626. It appeared to be approximately 200ft high and appeared to be

unlit. This obstruction was not marked on the 1:250,000 map used for navigation.

Report ID – asor\SARF - RAF202 Sqn D Flt - Lossiemouth\Sea King\12\17987

Incident Type - Incident

Date – 02/09/2012

Title – UNMARKED VERTICAL OBSTRUCTION

Perceived Severity – A - High

Description - DURING A TRANSIT TO THE CAIRNGORMS AND RECOVERY FROM ABERDEEN FOLLOWING SAROP, WHIP STYLE AERIALS WERE OBSERVED IN THE FOLLOWING LOCATIONS: NJ 2353 4689 & NJ 3808 4857. BOTH MASTS WERE APPROXIMATELY 200FT HIGH, WERE NOT MARKED ON THE 1:250,000 MAP USED FOR NAVIGATION AND WERE EXCEEDINGLY DIFFICULT TO SPOT. THE SECOND OF THE 2 MASTS IS IN THE VICINITY OF AN EXISTING WIND FARM.

Report ID – asor\Benson - RAF28 (AC) Sqn\Merlin\12\18725

Incident Type - Hazard/Observation

Date – 25/09/2012

Title – Notification of Unmarked Obstruction

Perceived Severity – D - Negligible

Description - In the direction contained within the Benson Flying Order Book (Temp Order 2003), this is notification of an unmarked obstruction for inclusion within the Digital Vertical Obstruction File. During the transit from Chepstow to Lydbrook, two co-located unmarked obstructions were encountered at: N51 43 75 W002 36 75. The obstructions were a wind turbine (estimated height 300') and a 'whip aerial' (estimated height 200').

Report ID – asor\Lossiemouth - RAF617 Sqn\Tornado\12\20810

Incident Type - Hazard/Observation

Date – 27/11/2012

Title – Uncharted Obstruction

Perceived Severity – B - Medium

Description - Small Whip aerial 200ft high with red light on top at 54 10.638N 004 54.370W very like masts found in and around wind farms and future wind farm sites. Uncharted Obstruction report submitted.

Report ID – asor\SARF - RAF202 Sqn D Flt - Lossiemouth\Sea King\12\17987

Incident Type - Incident

Date – 02/09/2012

Title – UNMARKED VERTICAL OBSTRUCTION

Perceived Severity – A - High

Description - DURING A TRANSIT TO THE CAIRNGORMS AND RECOVERY FROM ABERDEEN FOLLOWING SAROP, WHIP STYLE AERIALS WERE OBSERVED IN THE FOLLOWING LOCATIONS: NJ 2353 4689 & NJ 3808 4857. BOTH MASTS WERE APPROXIMATELY 200FT HIGH, WERE NOT MARKED ON THE 1:250,000 MAP USED FOR NAVIGATION AND WERE EXCEEDINGLY DIFFICULT TO SPOT. THE SECOND OF THE 2 MASTS IS IN THE VICINITY OF AN EXISTING WIND FARM.

Annex D

Report ID – asor\Benson - RAF78 Sqn\Merlin\13\1342

Incident Type - Hazard/Observation

Date – 15/02/2013

Title – Uncharted Obstruction SX 33798112

Perceived Severity – C - Low

Description - On a LL Nav route, an uncharted Wind Turbine was spotted at SX 33798112 to the north of out track.

Report ID – asor\Marham - RAF2(AC) Sqn\Tornado\13\1701

Incident Type - Hazard/Observation

Date – 27/02/2013

Title – Uncharted Obstruction

Perceived Severity – C - Low

Description - An uncharted and unlit wind farm was encountered at position 55 52N 002 18W. The aircrew assessed them as up to 300' high from base to the blade tips.

Report ID – asor\Odiham - RAFODI - 18 Sqn\Chinook\13\2718

Incident Type - Hazard/Observation

Date – 02/04/2013

Title – Uncharted wind turbine.

Perceived Severity – D - Negligible

Description - A brand new uncharted 300' wind turbine spotted at SX 2700 6200, Liskeard. The weather was good so it was spotted with 3 miles to go.

Report ID – asor\SARF - RAF202 Sqn A Flt - Boulmer\Sea King\13\5284

Incident Type - Hazard/Observation

Date – 17/06/2013

Title – Uncharted Obstructions

Perceived Severity – A - High

Description – Whilst returning from some training with the Durham police, 2 x masts were observed at the following locations: 1) N5436.54 W00131.00 (NZ31312386) and 2) N5438.68 W00131.30 (NZ30962783). Both were estimated to be between 280-300' high and appeared unlit. They were both very thin masts (believed to be wind farm sighting masts) that were difficult to see in daylight and would have been extremely difficult to see at night, hence the high severity.

Report ID – asor\Marham - RAF\2(AC) Sqn\Tornado\13\7417

Incident Type - Hazard/Observation

Date – 13/08/2013

Title – 3 x Unmarked Obstructions

Perceived Severity – C - Low

Description - 3 unmarked obstructions were noted at positions:

1. 55 20.618N 003 50.071W whip Aerial approx 300ft
2. 55 02.097N 003 51.040W Single mast approx 200ft
3. 2 Single wind turbines 54 59.670N 004 35.381W approx 250ft

Report ID – asor\SARF - RAF\202 Sqn D Flt - Lossiemouth\Sea King\13\7525

Incident Type - Hazard/Observation

Date – 15/08/2013

Title – Uncharted obstruction

Perceived Severity – A - High

Description - Rescue 137 spotted an uncharted obstruction at NO 220 307, a whip aerial 180' in height. Also, at NJ 420 210, the charts only show a single wind turbine, where now there are 8.

Report ID – asor\SARF - RAF\202 Sqn D Flt - Lossiemouth\Sea King\13\8282

Incident Type - Incident

Date – 07/09/2013

Title – Uncharted Obstruction

Perceived Severity – A - High

Description - The crew of Rescue 137 spotted an Uncharted Obstruction at NJ 7295 2470, a single wind turbine 300' in height. It is of particular concern as it is on the Inverurie Heli Lane into Aberdeen. The crew also noticed that at NJ 421 216 is marked as a single turbine but is now developed into a windfarm with over 10 turbines.

Report ID – asor\Coningsby - RAF\ATC - CON\13\8585

Incident Type - Incident

Date – 13/09/2013

Title – Breaking of Coordination

Perceived Severity – C - Low

Description - During the afternoon I was controlling in the LARS position I was providing a Basic Service to 2 Civil aircraft and a Deconfliction Service to RRR1391 an A109 returning to High Wycombe. Having identified and applied service to RRR1391 I gave a control instruction to climb to his requested transit altitude of 5000 feet 1013 (Barnsley QNH) and called the primary contact believed to be the Wind farm at Bicker. Having established that the pilot was happy to continue against that contact I continued scanning for confliction. I spotted an aircraft indicating 060 on C and wearing a Cranwell sqwk 2630 and so rang them for coordination. Cranwell stated that their traffic was maintaining 6000 feet 1013 (Barnsley QNH) and coordination was agreed that their traffic would maintain 6000 feet and I would climb not above 5000 feet. This information was then passed to the pilot of RRR1391. As the two tracks were approximately 2.5 NMs from each other the Cranwell traffic started to descend and avoiding action was initiated with a 90 degree turn as the best form of escape, The landline was opened to Cranwell they acknowledged that their aircraft had drifted below the agreed coordination but was now climbing back above. This was passed on to the pilot of RRR1391 who informed me that once the aircraft indicated 1000 feet above he was happy to turn back on track against it.

Report ID – asor\Marham - RAF\9 Sqn\Tornado\13\11836

Incident Type - Hazard/Observation

Date – 09/12/2013

Title – Uncharted Wind Turbine; DAAT-CFIT-LL

Perceived Severity – C - Low

Description - Title Amended by MRM OM Original Title - Uncharted Wind Turbine. During a daytime route recce at low level for a night EO sortie a

uncharted wind turbine was found at location 53 02.215N 003 33.963W. It was deemed to be approximately 200'.

Annex E

Report ID – asor\Lossiemouth - RAF XV(R) Sqn\Tornado\14\263

Incident Type - Hazard/Observation

Date – 13/01/2014

Title – Report of unmarked obstruction; DAAT-CFIT-LL

Perceived Severity – A - High

Description - An unmarked 3 bladed wind turbine was sighted at 56D 39.65N 002D 42.37W (approx). No GPWS warning was given. After flight, the TAMPA was checked for chart and DVOF data but there was neither indication of an obstruction on the mapping nor in the DVOF file.

Report ID – asor\Cranwell - RAF ATC - CRN\14\629

Incident Type - Hazard/Observation

Date – 22/01/2014

Title – Cranwell Radar Vector Chart Review - Height Discrepancies

Perceived Severity – C - Low

Description - The following is an extract of the recommendations of a recently submitted Safety Survey that highlighted several discrepancies with the current Cranwell Radar Vector Chart. AIDU will require time to check and implement the required changes to the RVC and so this DASOR is submitted to highlight those issues in the interim. Cranwell ATC has implemented the corrected obstacle clearances based on the findings of the safety survey on a temporary overlay on all consoles to ensure safe operating separation from terrain can be maintained; "Recommendations Due to not having the tools, skill-set or the training required to ascertain the RVC in respect of terrain, the RVC will be checked in relation to spot heights and obstacle clearance on the UK low flying chart Sheet 2. It will have to be assumed that the extant RVC with respects to terrain is accurate and legal. 1. After investigation I have discovered 6 anomalies, these are highlighted below along with suggested remedial action. a. The RVC in the vicinity of the wind farm 075° 36 nm (Skegness array) is 3 feet too low. I have 3 recommendations to mitigate this issue: i. Raise the sector south of the line to 1400 feet. ii. Move the line south to a bearing of 090° starting at the 24 nm point to 40 nm. (If a 3 nm avoid is required) iii. Move the same line so it is just south of the wind farm. (If you do not require a 3 nm avoid) b. My second observation is that the top of Belmont Mast 034° 21.7 nm has been removed, I recommend that the sector is reduced to 2400 feet. c. Two wind turbines roughly 305° 35 nm (Situated south of Wickersley) are within 3 nm of lower ground, if the avoid of these obstacles is 3 nm then I suggest another sector line to be inserted. 320°

ranging from 16 nm to 40 nm. If this section was added then that should be at the height of 1600 feet, the remainder of the Northern section can remain at 1500 feet. d. The wind turbine in the vicinity of Netherthorpe 308° 32 nm will require the northern portion of the RVC is raised to 1600 feet in that sector. If the additional sector in point (c) was implemented, it would include the following wind turbine therefore making this recommendation irrelevant. e. The Sector in the west of our radar map is currently 2100 feet. If we are to avoid obstacles by 3 nm there is a Wind Turbine 280° 42 nm situated near Wirksworth and Middleton. If the avoid of this turbine is 3 nm then I suggest that that portion of the RVC is raised to 2200 feet. f. There is an obstacle near Horncastle 050° 17 nm which is within 3 nm of the lower sector. If we are to avoid this obstacle by 3 nm then I suggest that the arc south of that obstacle is to be moved south west by 3 nm so the arc is 13 nm from Cranwell. In the interim, on direction from SATCO. A new dynamic overlay has been created for display on the Radar Screens at Cranwell with new RVC heights to provide >1000' sepn against the obstacles highlighted in this SS. Yet again It should be stated that none of the personnel involved in this change have had any training or the skill-sets required." The required changes to the RVC have been submitted to AIDU.

Report ID – asor\SARF - RAF\202 Sqn D Flt - Lossiemouth\Sea King\14\762

Incident Type - Hazard/Observation

Date – 26/01/2014

Title – Uncharted Obstruction

Perceived Severity – A - High

Description - SRG 137 spotted 4 Uncharted Wind Turbines at NJ 778 553, approx 200 ft AGL

Report ID – asor\Linton-on-Ouse - RAF\ATC - LIN\14\803

Incident Type - Hazard/Observation

Date – 27/01/2014

Title – RVC ANOMALIES

Perceived Severity – A - High

Description - SATCO had received a letter from ATM Force Command in January 2014, dated 18 September 2013. The letter stated that a previous DASOR had been submitted for anomalies with Radar Vector Charts (RVC) at another unit and recommendations had been made for units to conduct independent checks. These were to include comparison of RADAR overlays with Mil Flip documents; to superimpose the RVC onto a Mil low Fg/UK

Special Air Chart; to conduct an assurance check of the controlling displays and to ensure they are the latest version and that they all matched. Finally, advise AIDU of any anomalies for amendment. The AIDU Website was checked and more than one RVC for Linton on Ouse was found. The RVC link from the Home Page still shows a version dated 30 Jun 11, whereas the link from UK AIP/UK MIL AIP AIRAC has a version dated 12 Dec 13. ATC Linton on Ouse had been using a RVC dated 14 Dec 13 which does not appear anywhere on the Website. All RADAR Consoles were and remain matched as they were immediately dynamically edited to reflect the extant RVC; dated 12 Dec 13. Following a request to AIDU, we received the updated change to Watchman RADAR mapping (an incorrect one was sent initially). I started to overlay the current Low Flying Chart. Several RVC Sectors had changed but the author could not confirm why a Sector had been extended 6° from the 025° Radial to the 031° Radial. Additionally another Sector to the North East had been changed from a 13D arc to a 12D arc impacting on a TACAN procedure to RW21RH, the main instrument RW. Ac would enter an area of high ground (2200') when flying the published procedure down to 2000'. No new obstructions can be found by the author to support the change. Locally controllers are aware of the RVC height and are briefed to descend ac iaw with the RVC. A 1700ft 3nm circle adjacent to the RW21 centreline is also of concern as the height, originally 1600ft, as well as position has been changed both by range and bearing from the RADAR head over the period Jun 11 to Dec 13. Only a spot height of 565ft can be found. Evidence is in place that the AIDU mapping information is gained from the Digital Vertical Obstruction File (DVOF) and Digital Terrain Elevation Data (DTED). This investigator has no access to these files or information and therefore is not in a position to assure that the RVC is or has been correct or accurate. Whilst the reason for change is published on each plate, there is no explanation for example as to why it is a new chart. E.G. a new Wind Farm or aerial system erected or simply a recalculation of an elevation that affects plates etc. As the controller given this task to complete, I do not have the expertise or tools required and I am in no way qualified to offer any substantive level of assurance to the accuracy of the documents or their contents produced by AIDU. Through the methodology adopted and with little assurance of the accuracy of this method, I can offer only that there appear to be no obstructions that would compromise the 1000' safety margin that the current RVC protects.

Report ID – asor\Benson - RAF78 Sqn\Merlin\14\3016

Incident Type - Hazard/Observation

Date – 24/03/2014

Title – Windfarm under construction

Perceived Severity – B - Medium

Description - On approaching a turn point on the M1, the NHP noticed a wind farm of approximately 6 turbines which had not been briefed and, on inspection, were not charted. The crew verified their position and continued

en-route past the wind farm which, on closer inspection, appeared to be under construction. The wind farm is approximately centred at SP 777 519, consisted of 6 turbines with more sites prepared and each turbine was approximately 300' AGL. Their location corresponds with a 197' 1/4 mil marked mast which could not be identified which, in the crews estimation, was likely to be the anemometer mast used when sighting the wind farm.

Report ID – asor\Benson - RAF\78 Sqn\Merlin\14\3441

Incident Type - Hazard/Observation

Date – 03/04/2014

Title – 2 Uncharted Obstructions - SX30786921 & SX37509860.

Perceived Severity – C - Low

Description - An uncharted obstruction was noted at SX30786921. The obstruction was a G/S/U windmill approx 150' AGL. An uncharted obstruction was noted at SX37509860. The obstruction was a G/S/U mast approx 170' AGL.

Report ID – asor\SARF - RAF\22 Sqn A Flt - Chivenor\Sea King\14\4007

Incident Type - Hazard/Observation

Date – 18/04/2014

Title – Unmarked single wind turbine

Perceived Severity – C - Low

Description - During transit for a routine training sortie, a single wind turbine was noted in position SS509299 (approx 5nm East of Bideford, Devon) at a height of 270' AGL, which was unmarked on both 25k and 250k maps of the area. Report sent to Yeovilton Ops and AIDU.

Report ID – asor\Boulmer - RAF\BOU - [REDACTED]\14\5588

Incident Type - Hazard/Observation

Date – 12/05/2014

Title – Engineering Reporting Culture

Perceived Severity – A - High

Description - On Thursday 1 May I was informed by AFC that there was an issue with the Benbecula T 92 radar; [REDACTED]

[REDACTED] The site had been informed of this a day earlier on the 30 Apr. I informed the site that they needed to raise a performance change [REDACTED]

[REDACTED] I am concerned that the site had the information 24 hrs earlier and failed to raise a performance change and inform ops of the issue even though they had carried out engineering works to try and rectify the fault. The site sent a copy of the performance change log; as instructed; to the ANC, this information was omitted from the DES and the ops brief and was only included after I had informed the ANC of the need to include this information.

[REDACTED] This fault was originally identified in mid April. The site carried out engineering activities, raised a job card and added detail to the DES for the fault but failed to raise a performance change and inform ops of the [REDACTED]

[REDACTED] The job card details all of the details [REDACTED] but the site failed to see this fault as a safety issue. A performance change was raised and the brief was changed only after my intervention. Both of these incidents were dealt with by sites and they both carried out engineering activities but failed to inform ops of the change in performance [REDACTED] and failed to inform the Eng CoC. [REDACTED]

[REDACTED]

These issues was compounded by the convoluted Eng reporting process as defined in the AP600, RRH to ESM to ANC to SD.

Report ID – asor\Lossiemouth - RAFXV(R) Sqn\Tornado\14\4954

Incident Type - Hazard/Observation

Date – 16/05/2014

Title – Unmarked Obstruction

Perceived Severity – C - Low

Description - Whilst flying at 250 feet in LFA 14, the crew of ALIEN 1 observed 2 wind turbines which were not marked on their charts. The location was marked and upon recovery other charts were checked. No obstruction is listed in that location on any mapping available through TAMPA. Position 5830.426N 00409.597W, 2 turbines visually assessed at approximately 200 feet

Report ID – asor\OOA RAF MPA\1564 Flt - MPA\Sea King\14\5876

Incident Type - Hazard/Observation

Date – 10/06/2014

Title – INCORRECT OBSTRUCTION HEIGHT INFO ON CHART
AMENDMENT DOC 06/14

Perceived Severity – C - Low

Description - There are now 3 wind turbines approx 5nm South of Mount Pleasant A/F (IVO Mare Harbour). These have been incorporated into the MoD DGC CHAD for 1:50 000 map H792 Sheet 22 Ed 2, with heights listed as 61ft agl (84ft amsl) in CHAD 6/14. However, these turbines actually extend up to approx 200ft agl as observed on a local area recce. Furthermore, the new 1:250 000 Falkland Is Range and Avoids MAP GSGS 5563 lists these turbines as 200ft agl (276ft amsl), which is believed to be correct. The Flight Safety hazard here is that these obstructions are close to the commonly used poor weather helo route into Mount Pleasant A/F and, if this was to be used in conditions of low cloud and poor visibility, helo crews would naturally be using the 1:50 000 map for navigation and obstruction avoidance - but it is this map which contains the wrong obstruction height info and could lead to helo crews colliding with 200ft turbines which they have marked on their maps as 61ft agl. This hazard was spotted on pre flight planning.

Report ID – asor\Barkston Heath - RAF\703 NAS\Tutor\14\6328

Incident Type - Hazard/Observation

Date – 10/06/2014

Title – Incorrect Feature Representaion on Chart

Perceived Severity – D - Negligible

Description - The turnpoint was a windfarm which was depicted on the map by two individual wind turbine symbols. This turnpoint has been seen by the instructor many times before and was familiar. On this flight, there were approximately ten extra turbines erected with one or two more still under construction.

Report ID – asor\Barkston Heath - RAF\703 NAS\Tutor\14\6544

Incident Type - Hazard/Observation

Date – 10/06/2014

Title – Unmarked Windfarm Sighted

Perceived Severity – C - Low

Description - During a medium to low level navigation landaway to Duxford an unmarked wind farm (approx 7 wind turbines 250ft AGL) was spotted during an IP to grid demonstration. The A/C was manoeuvred clear of the turbines which were close to the grid area directly on the planned route. On return from

the sortie, flight planning were informed of the turbines who elected to inform the LFBC. At the request of the LFBC this DASOR is being completed. The wind farm was previously reported at 5210 N 00045W, however a more accurate assessment of the position shows the turbines to be located at 5209.1N 000 50.8W (near the town of Hartwell).

Report ID – asor\Barkston Heath - RAF\703 NAS\Tutor\14\6544

Incident Type - Hazard/Observation

Date – 10/06/2014

Title – Unmarked Windfarm Sighted

Perceived Severity – C - Low

Description - During a medium to low level navigation landaway to Duxford an unmarked wind farm (approx 7 wind turbines 250ft AGL) was spotted during an IP to grid demonstration. The A/C was manoeuvred clear of the turbines which were close to the grid area directly on the planned route. On return from the sortie, flight planning were informed of the turbines who elected to inform the LFBC. At the request of the LFBC this DASOR is being completed. The wind farm was previously reported at 5210 N 00045W, however a more accurate assessment of the position shows the turbines to be located at 5209.1N 000 50.8W (near the town of Hartwell).

Report ID – asor\SARF - RAF\22 Sqn A Flt - Chivenor\Sea King\14\7342

Incident Type - Hazard/Observation

Date – 10/07/2014

Title – Unmarked Obstruction

Perceived Severity – D - Negligible

Description - An unmarked wind turbine was noted at position SS 225 109 / 50 51.52N 004 29.42W, NE of Bude. The height of the mast was estimated to be 250ft.

Report ID – asor\Barkston Heath - RAF\703 NAS\Tutor\14\8143

Incident Type - Hazard/Observation

Date – 28/07/2014

Title – Increase in Number of Reported Wind Turbines

Perceived Severity – C - Low

Description - During a low level navigation sortie departing from Durham Tees Valley and returning to RAF Barkston Heath an increased number of wind turbines to that reported on the 1/4 mil chart was observed. At location N5355 W0028 (0.5nm West of Middleton on the Wolds) a single wind turbine is marked, there are now three wind turbines operating in that area. The turbines were avoided visually and the aircraft returned to Barkston Heath without incident. Flight Planning staff were informed and this DASOR raised.

Report ID – asor\SARF - RAF\202 Sqn D Flt - Lossiemouth\Sea King\14\8251

Incident Type - Hazard/Observation

Date – 28/07/2014

Title – Uncharted Wind Turbine

Perceived Severity – A - High

Description - An Uncharted Wind Turbine up to 300'agl was spotted at Grid Ref HY 544 318 (Eday Island, Orkney)

Report ID – asor\Barkston Heath - RAF\674 AAC\Tutor\14\8686

Incident Type - Incident

Date – 12/08/2014

Title – BKH Tutor in CWL MATZ

Perceived Severity – C - Low

Description - I was the RA controller when I received a land line call from CGY with traffic information on a low level squawk. The information was passed on the aircraft NE of CWL tracking southbound through the gap between CWL & CGY not above 500' routing towards Donnington wind farm. I said that I had no traffic to affect and hung up. Approx 5 mins later I noticed the same low level squawk now inside the MATZ, I phoned CGY and asked for traffic information, they informed me it was a BKH track requesting a hand over for visual recovery, I asked the controller to route him southbound immediately. The ac had already informed CGY App that he was free calling, the ac continued to track westbound directly towards the CWL cct. The ac eventually called App when he was inside 2nm, I asked the ac to take up a southerly track to remain clear of the CWL vis cct. The ac, now identified as BKH 39, recovered visually back to BKH.

Report ID – asor\Lossiemouth - RAF\XV(R) Sqn\Tornado\14\9110

Incident Type - Hazard/Observation

Date – 26/08/2014

Title – UNCHARTED OBSTRUCTION; DAAT CFIT-LL

Perceived Severity – C - Low

Description - Whilst low flying in LFA 14, 3 wind turbines were noticed at approximate position 56 11.900N 005 36.400W on the southern tip of a small island about 20nm South of Oban. The turbines are approximately 150ft tall.

Report ID – asor\SARF - RAF202 Sqn E Flt - Leconfield\Sea King\14\9858

Incident Type - Incident

Date – 11/09/2014

Title – Unsatisfactory Equipment - AMMWAS tablet

Perceived Severity – B - Medium

Description - As part of a categorisation check, I was the captain between the seats, and had asked the crew to conduct a LL route recce for the night sortie. As I had the capacity between the seats, I took control of the AMMWAS tablet to assist with hazard warning/avoidance, especially with the poor visibility due to haze. The first issue was that despite turning the tablet on 30 mins before I needed it (the first part of the sortie was overwater, therefore no need to waste the battery) It took 25 mins for the tablet to pick up a valid GPS signal. (I have done another sortie where it didn't get a valid GPS signal for the whole 1.30). More disturbing though was that it regularly warned us about small telegraph type wires, but did not warn us about the 250'+ wires or at all (ie did not flash red when it came within either the 3 nm range or 1 nm range arc). It also failed to warn about several wind farm masts that were marked on it. On one occasion I got the crew to fly directly at one of the turbines, it correctly alerted us with 3 miles to go, we turned away so that it was now outside the arc, then turned back but this time it did not alert at all, even when it came within the 1 nm arc. This does not give me confidence that it will alert obstructions, and people may place too much reliance on it and forsake basic map reading skills. I delayed submission of this DASOR as I wanted to check that the settings were correct and needed to confirm this with the settings on use at Boulmer and Lossiemouth.

Report ID – asor\SARF - RAF202 Sqn E Flt - Leconfield\Sea King\14\9975

Incident Type - Hazard/Observation

Date – 18/09/2014

Title – Unmarked Wind Turbine

Perceived Severity – C - Low

Description - During a low level transit due weather an unmarked wind turbine was noted at grid TA026506 (Sheet 106). It appeared to be unlit and extended vertically to approximately 150ft agl. This turbine is particularly noteworthy due to its close proximity to the recognised poor weather route used by Leconfield-based SAR helicopters recovering to base from the coast along the Bridlington to Beverley railway line.

Report ID – asor\Marham - RAF\ATC - MRM\14\11848

Incident Type - Incident

Date – 05/11/2014

Title – Unauthorised penetration of Marham Matz

Perceived Severity – B - Medium

Description - As the App/ Dir UT with Screen, I was aware after receiving traffic information on a pair of F15's operating at Sculthorpe. They were working 2000' to FL200 with Swanick Mil East. Due to poor Radar performance, and 2 kingairs flying IFR under a DS in the Marham RTC, a 12 mile gap had to be flown between the operating F15's and Swaffham Wind farm (which can't be deemed). The 2 F15's then left their operating area of sculthorpe at approximately 2000ft indicated on Mode C. Then were heading approximately SW and then penetrated the MATZ to the north. An urgent call was made to Swanick Mil, who advised us that the F15's had just jumped frequency to Lakenheath. At the same time Lakenheath called saying that the aircraft had just called them in the Marham Matz, and they wanted a transition request. They were advised to climb their A/ to 3000ft, whilst avoiding action was given to the kingairs in the RTC. Standard separation was always maintained.

Report ID – asor\SARF - RAF\202 Sqn E Flt - Leconfield\Sea King\14\11903

Incident Type - Hazard/Observation

Date – 06/11/2014

Title – Uncharted Wind Turbine

Perceived Severity – C - Low

Description - Whilst conducting an airstest, a 225 ft uncharted wind turbine was sighted at TA 0422 4878.

Report ID – asor\SARF - RAF\202 Sqn E Flt - Leconfield\Sea King\14\12776

Incident Type - Hazard/Observation

Date – 27/11/2014

Title – Obstructions not marked on 1:50000 maps

Perceived Severity – B - Medium

Description - On return from a routine training sortie in visibility of ~1500m, SRG128 transited at low level on standard 'bad weather' route from Bridlington to Leconfield. Navigation was completed primarily using a pre-prepared 1:50000 map, along with AMMWAS (Aircraft Moving Map Wires Alert System) for situational awareness and wire avoidance. During this relatively short navigation route, there were 2 occasions where significant obstructions were not displayed on the 1:50000 map. The first was a 125ft AGL (estimated) wind turbine 100m N of position N54:01.08 W000:21.82. The second was a wind turbine very close to Leconfield - approximately 1nm N of E Flt dispersal, to the WSW of Decoy Wood and W of a railway line. Despite not being evident on the 1:50000 map, the second turbine was highlighted on the AMMWAS. The fact that there are significant obstructions close to our operating base which are not shown on the map used for low level / poor weather navigation is very concerning.

Report ID – asor\Lossiemouth - RAF XV(R) Sqn\Tornado\14\13452

Incident Type - Hazard/Observation

Date – 15/12/2014

Title – Uncharted windmills; DAAT CFIT-LL

Perceived Severity – C - Low

Description - Whilst low flying in NLFA 1D a pair of unlit windmills were noted at approximate position N57 30.000 W002 32.000. The windmills appeared to be about 300ft high.

Annex F

Report ID – asor\SARF - RAF202 Sqn E Flt - Leconfield\Sea King\15\45

Incident Type - Hazard/Observation

Date – 05/01/2015

Title – Uncharted wind turbines.

Perceived Severity – C - Low

Description - S128 was recovering to Leconfield along a "foul weather route" (in order to familiarise a visiting pilot with it) when two uncharted wind turbines were seen in close proximity to the route. The first was at grid TH 042560 and was approximately 225 ft high, while the second was at grid TH 028448 and was approximately 150 ft high.

Report ID – asor\SARF - RAF202 Sqn E Flt - Leconfield\Sea King\15\1428

Incident Type - Hazard/Observation

Date – 11/02/2015

Title – Uncharted Wind Turbine

Perceived Severity – B - Medium

Description - On a routine training sortie from Leconfield, a 250ft wind turbine was sighted at TA0714 5393. This was not plotted on any chart.

Report ID – asor\SARF - RAF22 Sqn A Flt - Chivenor\Sea King\15\1600

Incident Type - Hazard/Observation

Date – 17/02/2015

Title – Unmarked Obstacle

Perceived Severity – D - Negligible

Description - Unmarked Wind Turbine 300' 5042.268N 00425.044W

Report ID – asor\SARF - RAF22 Sqn A Flt - Chivenor\Sea King\15\2411

Incident Type - Hazard/Observation

Date – 09/03/2015

Title – Multiple Obstructions marked as Single Obstructions on 1/4 Mill Special Air Chart

Perceived Severity – C - Low

Description - A No of multiple wind/aerial "farms" are marked as single obstructions on SAC Sheet 1 at the following locations: 2 aerals ivo ST 458411, 2 wind turbines ivo SS 280158, 3 wind turbines ivo SS 301133, 2 wind turbines ivo SS 513212 and 3 wind turbines ivo SS 518441. Marking these as multiple obstructions rather than single ones makes for easier visual navigation in their vicinity. Furthermore, marking them as multiple obstructions reduces concern that one has possibly discovered an unmarked obstruction, with the concomitant responsibility to plot position, estimate height and then report it to DGC. Of note, the aerals ivo ST 458411 are marked as unlit when in fact they do have obstruction lights on the top of them. Whilst the FS risk here is perceived as pretty low, this chart inaccuracy issue is being raised via DASOR iaw HQ 2Gp FS staff guidance.

Report ID – asor\Lossiemouth - RAF\XV(R) Sqn\Tornado\15\3756

Incident Type - Hazard/Observation

Date – 15/04/2015

Title – Unmarked Obstacle; DAAT CFIT-LL

Perceived Severity – C - Low

Description - An unmarked obstruction was found at 57D 19.175N 002D 52.585W. It was a large wind turbine under construction and was not shown on the ac 1:500k or 1:250k mapping. After landing, TAMPA was checked and the obstruction was not present in the DVOF, nor in the latest CALF.

Report ID – asor\Shawbury - RAF\705 NAS\Squirrel\15\3848

Incident Type - Hazard/Observation

Date – 20/04/2015

Title – Low Flying Chart Amendments

Perceived Severity – B - Medium

Description - Whilst conducting a low level route recce a number of obstruction inaccuracies were identified on the current Sheet 3 1:250 000 map. The Map series used was: Series M5219 - Air Sheet 3 Edition 30-GSGS. Suggested amendments are as follows: Mast obstruction listed at SH 334 373 moved to SH 350 363 and re listed as a wind turbine with similar height markings (251 / 160); Two new Wind Turbines to be added at SH 468 465 and SH 468 468 indicating an obstruction height of 150' AGL (3rd turbine

under construction at the site was observed); Mast (Lit) currently listed at SH 546 727 (Menai Bridge, Anglesey) 596 / 350 does not exist and should be removed.; Sheet 114 1:50 000 map: Domestic wires become suspended wires across a valley feature at point SH 557 737 to SH 559 737.

Report ID – asor\Lossiemouth - RAF\XV(R) Sqn\Tornado\15\3941

Incident Type - Hazard/Observation

Date – 21/04/2015

Title – Uncharted obstruction LFA14. DAAT CFIT-LL.

Perceived Severity – C - Low

Description - Whilst low flying in LFA 14, a single windmill was noticed IVO N5651 W00231. The windmill was approximately 300ft high.

Report ID – asor\Lossiemouth - RAF\ATC - LOS\15\4179

Incident Type - Incident

Date – 27/04/2015

Title – PSYCHO Level Bust. DAAT: MAC

Perceived Severity – C - Low

Description - Whilst acting as APR controller PSYCHO had been released on SID23S climbing FL 240. On departure PSYCHO were identified and instructed to Climb FL120 initially. This was due to a civil track at FL154 climbing that was now in PSYCHO's projected track. PSYCHO read back FL120 and passing FL35 requesting own Nav. Own Nav was given and the traffic in the vicinity of the wind farms called. As the Civil Traffic climbed through FL174 PSYCHO were instructed to climb FL140. PSYCHO responded by telling me they were now passing FL170. With PSYCHO's new track they passed roughly 8 miles behind the civil traffic and instructed to climb FL240. Once through the Civil traffic's level and clear of the previously called traffic PSYCHO were silently handed over to SWANWICK Mil.

Report ID – asor\846 NAS\846 NAS HQ\Merlin\15\4320

Incident Type - Hazard/Observation

Date – 28/04/2015

Title – Uncharted Obstruction

Perceived Severity – C - Low

Description - Uncharted obstruction (wind turbine) was sighted at grid SX 3450 9980, height 250' AGL. Reported to Yeovilton Air Ops upon landing.