Obstacle Spot Checking

OLS

Session 2.2: Data Assessment & Analysis
5 December 2017

AERODROME SAFEGUARDING WORKSHOP
(Cairo, Egypt, 4-6 December 2017)

Presented by:
Michelle Soliman, Aerodrome Ops Inspector
General Civil Aviation Authority, United Arab Emirates
## The Raw Data

<table>
<thead>
<tr>
<th>Obs. ID #</th>
<th>WGS-84 Coordinates</th>
<th>Description</th>
<th>Lit. YIN</th>
<th>Elevation AMSL (m)</th>
<th>Height Above Ground (m)</th>
<th>Pen Amt m</th>
<th>Surface</th>
<th>Survey Date</th>
<th>Shielded By</th>
<th>Action Required</th>
<th>Mitigation Applied</th>
</tr>
</thead>
<tbody>
<tr>
<td>1320</td>
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<td>213.28</td>
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<td>Outer Vertical</td>
<td>11/4/2008</td>
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<td>Obstacle light installed, shielded object</td>
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<td>Obstacle light installed, shielded object</td>
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<td>82.56</td>
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<td>125.64</td>
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<td>58.08</td>
<td>171.23</td>
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<td>49.69</td>
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<td>11/5/2008</td>
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<td>251125.65N 0561349.74E</td>
<td>PYLON</td>
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<td>46.60</td>
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<td>11/5/2008</td>
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<td>1513</td>
<td>245844.59N 0561924.61E</td>
<td>TERRAIN</td>
<td>N</td>
<td>201.91</td>
<td>0.00</td>
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<td>Outer Vertical</td>
<td>2/26/2009</td>
<td>6137</td>
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<td>105.58</td>
<td>640.09</td>
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<td>2/26/2009</td>
<td>Obstacle light to be installed</td>
<td>Obstacle light installed</td>
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</tbody>
</table>

**Calculated Fields Added:**
- Height Above Ground
- Shielded By

**Management Fields Added:**
- Action Required
- Mitigation Applied

**Obstacle light to be installed:**
- Obstacle light installed
- Shielded obstacle
Filtering the Data

- Priorities
- Surface Penetrated
- Amount of Penetration
- Shielding Principles
- Actions Required
- Existing Mitigations (Restrictions)
## Verification Data

### Obstacle Validation Checklist

<table>
<thead>
<tr>
<th>Obstacle Type</th>
<th>WGS84 Coordinates (UTM 46N Coordinates)</th>
<th>Ht AMSL (EGM96)</th>
<th>Pen</th>
<th>Surface (Survey Dates)</th>
<th>Lighting Req’d As per safety study</th>
<th>Lighted As per Survey</th>
<th>Verified by OAT</th>
<th>Marked</th>
<th>Verified by OAT</th>
<th>Warning Spheres Req’d As per safety study</th>
<th>Warning Spheres Installed</th>
<th>Verified by OAT</th>
<th>Remarks</th>
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<tr>
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<td>250715.72N 0562001.87E</td>
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<td>250826.76N 0661626.95E</td>
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</tbody>
</table>
The Results...
Obstacle ID: 3384
Fujairah Tower

CAR Part IX Reference for Lighting Requirement:
Appendix 13 - 13.2.9.8 a) “...lighting may be omitted when...”
ii) “…for a circuit extensively obstructed by immovable objects...procedures have been establish to ensure safety vertical clearance below prescribed flight paths...”

CAR Part IX Reference for Installed Lighting: Appendix 13 - 13.2.10.3.33
Medium Intensity | Type B
High Intensity | Type A

Inspector Comments:
• Flights are not permitted over this area due to established city
• Lighting applied from “ground level” in consideration of surrounding structures
• High Intensity | Type A on top is not required – but no dazzle effect reported

Assessment: Compliant
...in excess of regulation...
No action required

Photos:
15 October 2017

Surface Penetrated: Inner Horizontal
Obstacle Type: Building

Ground Height: 159.45m
CAR Part IX Reference for Lighting Requirement:
Appendix 13 - 13.2.9.8  a) “...lighting may be omitted when...”
ii) “...for a circuit extensively obstructed by immovable objects ...procedures have been establish to ensure safety vertical clearance below prescribed flight paths...”

CAR Part IX Reference for Installed Lighting:
Appendix 13 - 13.2.10.3.28
Medium Intensity  |  Type A and C

Inspector Comments:
- Flights are not permitted over this area due to established city
- Lighting applied from “ground level” in consideration of surrounding structures
- Medium intensity Type A lighting on top of tower and medium intensity Type C on corners of mall structure

Assessment: Compliant
...in excess of regulation...
No action required

Aeronautical Study: 19 September 2012
Ground Height: 90.66m

Obstacle ID: 3291
Millennium – Fujairah Mall
(Fujairah Commercial Complex)

Photos:
15 October 2017
Obstacle ID: 4932
Stadium

CAR Part IX Reference for Lighting
Requirement:
Appendix 13 - 13.2.9.7

CAR Part IX Reference for Installed Lighting:
Appendix 13 - 13.2.10.3.29
High and Medium Intensity | Type A

Inspector Comments:
• High and Medium intensity lighting further to aeronautical study
• Lighting on approach side flash simultaneously
• Lighting on other side is not exactly synchronised

Assessment:
Compliant
Reference: 13.2.10.3.17
“High-intensity obstacle lights, Type A...located on an object shall flash simultaneously.”
Action: Follow up with stadium to review synchronisation of lighting

Aeronautical Study: 28 October 2014

Surface Penetrated: Approach 11
Obstacle Type: Building

Ground Height: 29.94m

Photos:
15 October 2017
Obstacle ID: 4936
Flag Pole

CAR Part IX Reference for Installed Lighting:
Appendix 13 - 13.2.10.3.29
High Intensity | Type A

CAR Part IX Reference for Marking Requirement:
Appendix 13 - 13.2.9.8 c)
“...marking may be omitted when...lighted by high intensity obstacle lights by day...”

Inspector Comments:
• High intensity lighting on top of flag pole
• Marking not required

Assessment:
Compliant
No action required

Photos:
15 October 2017

Aeronautical Study: 1 June 2015

Surface Penetrated: Inner Horizontal
Obstacle Type: Flag Pole
Ground Height: 121.05m
Obstacle ID: 4422 and 4423
Masts

CAR Part IX Reference for Installed Lighting:
Appendix 13 - 13.2.10.3.29
High Intensity | Type A

CAR Part IX Reference for Marking Requirement:
Appendix 13 - 13.2.9.7

Photos:
15 October 2017

Assessment:
Compliant
No action required

Surface Penetrated: Approach 11
Obstacle Type: Mast

Ground Height: 112.81m

Inspector Comments:
• Obstacle 4422 is critical and shields other objects
• Marking and lighting observed at distance
Obstacle ID: 4258
Pylon

CAR Part IX Reference for Installed Lighting:
Appendix 13 - 13.2.10.3.26
Medium Intensity | Type B

CAR Part IX Reference for Overhead Cable Marking:
Appendix 13 - 13.2.9.11

CAR Part IX Reference for Obstacle Lighting Requirement:
Appendix 13 - 13.2.9.5

CAR Part IX Reference for Obstacle Marking Requirement:
Appendix 13 - 13.2.9.5

Inspector Comments:
• Obstacle is lit and marked as required
• Overhead wire is marked

Photos: 15 October 2017
Assessment: Compliant
No action required

Surface Penetrated: Take-Off 29
Obstacle Type: Pylon & Overhead Wires
Ground Height: 59.34m
Obstacle ID: 2029
Ultra Tech-Star Cement

CAR Part IX Reference for Installed Lighting:
Est. 45m to 150m above Ground Level
Appendix 13 - 13.2.10.3.26
Medium Intensity  |  Type B

Inspector Comments:
• Obstacle is well lit and visible
• Lighting does not flash simultaneously

CAR Part IX Reference for Lighting Requirement: Appendix 13 - 13.2.9.10
“...should be marked and/or lighted if an aeronautical study indicates...

Assessment:
Compliant
Reference: 13.2.10.3.17
“....medium intensity obstacle lights, Types A and B ...located on an object shall flash simultaneously.”
Action: Follow up regarding synchronisation of flashing lights

Surface Penetrated: Conical
Obstacle Type: Building

Photos:
17 October 2017
Obstacle ID: 2023
Pan Emirates Cement

Photos:
17 October 2017

CAR Part IX Reference for Lighting Requirement:
Appendix 13 - 13.2.9.10
“...should be marked and/or lighted if an aeronautical study indicates...

Inspector Comments:
• Facility is closed – no lighting observed

Assessment:
Compliant

Action: Assess facility in relation to flight procedures, elevations and surrounding area and confirm whether some lighting is required or not

Surface Penetrated: Conical
Obstacle Type: Building
Obstacle ID: 1203
Du Comms Tower – Dibba Road

Photos:
17 October 2017

Assessment:
Not Compliant
Action: Contact Du and arrange for necessary maintenance

CAR Part IX Reference for Installed Lighting:
Est. <45m above Ground Level
Appendix 13 - 13.2.10.3.20
Low Intensity | Type A or B (fixed red)

Inspector Comments:
• Lighting was not serviceable
• Marking observed

Surface Penetrated: Inner Horizontal
Obstacle Type: Comms-Mast
Obstacle ID: 1202  
Etisalat Comms Tower – Dibba Road

Photos:  
17 October 2017

Assessment:  
Compliant

CAR Part IX Reference for Installed Lighting:
Est. 45m to 150m above Ground Level
Appendix 13 - 13.2.10.3.26
Medium Intensity | Type B (flashing red) | Top
Low Intensity | Type B (fixed red) | Intermediate Level

Inspector Comments:
• Lighting – Low and Medium Intensity Type B observed at night
• Marking observed

Surface Penetrated: Inner Horizontal
Obstacle Type: Comms-Mast
Obstacle ID: ID-2987 (LOCAL)
Comms Tower – Airport Road near Julphar Pharmaceuticals

Photos:
17 October 2017

Assessment:
Compliant
Action: Has been added to OMRK verification checking – to included in next survey

CAR Part IX Reference for Installed Lighting:
Est. 45m to 150m above Ground Level
Appendix 13 - 13.2.10.3.26
Medium Intensity | Type C (fixed red)

Inspector Comments:
• Lighting – Medium Intensity Type C observed at night
• Marking observed
• Obstacle not included on survey data

Surface Penetrated: Not included on May 2017 Survey
Obstacle Type: Comms-Mast
Obstacle ID: 2031
Comms Towers at Army Camp

Photos:
17 October 2017

CAR Part IX Reference for Installed Lighting:
Est. <45m above Ground Level
Appendix 13 - 13.2.10.3.20
Low Intensity | Type A or B (fixed red)

Est. 45m – 150m above Ground Level
Appendix 13 - 13.2.10.3.26
Medium Intensity | Type B (flashing red)

Assessment:
Compliant
Action: Verify survey

Inspector Comments:
• Lighting – smaller mast – Low Intensity Type A or B observed at night
• Lighting – larger mast – Medium Intensity Type B observed at night
• Marking observed on both towers from a distance
• Only one of the comms towers appears to be included in the survey data
• Lighting applied from “ground level” in consideration of surrounding structures

Surface Penetrated: Conical
Obstacle Type: Comms-Mast
Obstacle ID: 2032
Comms Tower – RAK Bank

Photos:
17 October 2017

Assessment:
Compliant
Action: Review requirement for marking

CAR Part IX Reference for Installed Lighting:
Est. <45m above Ground Level
Appendix 13 - 13.2.10.3.20
Low Intensity | Type A or B (fixed red)

CAR Part IX Reference for Lighting Requirement: Appendix 13 - 13.2.9.10
“...should be marked and/or lighted if an aeronautical study indicates...

Inspector Comments:
• Lighting observed
• No marking is observed

Surface Penetrated: Conical
Obstacle Type: Comms-Mast
<table>
<thead>
<tr>
<th>Obstacle Description</th>
<th>Obstacle #</th>
<th>Obstacle Location (Latitude)</th>
<th>Obstacle Location (Longitude)</th>
<th>Penetrating of the OLS (m)</th>
<th>Surface Penetrated</th>
<th>Lighting Type</th>
<th>Marking Confirmed as required (Yes/No)</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flag Pole</td>
<td>4936</td>
<td>250715.43 N</td>
<td>0561700.05 E</td>
<td>126.44</td>
<td>Inner Horizontal</td>
<td>Flashing White High Intensity - Type A</td>
<td>Not Required</td>
<td>CAR Part IX Reference for Marking Requirement: Appendix 13 - 13.2.9.8 c) “…marking may be omitted when...lighted by high intensity obstacle lights by day…”</td>
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<tr>
<td>Mast</td>
<td>4422</td>
<td>250958.97 N</td>
<td>0561033.95 E</td>
<td>671.76</td>
<td>Approach 11</td>
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<tr>
<td>Pylon</td>
<td>4258</td>
<td>250756.76 N</td>
<td>0561606.96 E</td>
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<td>Take-Off 29</td>
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<td>Yes</td>
<td>Overhead Wires have Warning Spheres</td>
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