



# Obstacle Spot Checking OLS

**Session 2.2: Data Assessment & Analysis**  
**5 December 2017**

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

*Presented by:*  
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*General Civil Aviation Authority, United Arab Emirates*



# The Raw Data

Obs. ID #	WGS-84 Coordinates		Description	Lit Y/N	Elevation AMSL (m)	Height Above Ground (m)	Pen Amt m	Surface	Survey Date	Shielded By	Action Required	Mitigaion Applied
	Latitude	Longitude										
1320	251034.95N	0562045.91E	MAST	N	213.28	45.72	48.40	Outer Horizontal	11/4/2008	6567	Obstacle light to be installed	Obstacle light installed, shielded object
1323	251156.65N	0562017.11E	MAST	N	478.79	174.28	313.91	Outer Horizontal	11/4/2008	6567	Obstacle light to be installed	Obstacle light installed, shielded object
1325	251132.67N	0561356.92E	MAST	N	277.18	82.56	112.30	Outer Horizontal	11/5/2008	6491	Nil	Shielded obstacle
1326	251114.60N	0561402.21E	MAST	N	304.44	125.64	139.56	Outer Horizontal	11/5/2008	6491	Nil	Shielded obstacle
1327	251038.43N	0561444.27E	MAST	N	336.11	58.08	171.23	Outer Horizontal	11/5/2008	6323	Nil	Shielded obstacle
1328	251116.48N	0561352.53E	PYLON	N	286.62	49.69	121.74	Outer Horizontal	11/5/2008	6491	Nil	Shielded obstacle
1329	251125.65N	0561349.74E	PYLON	N	258.99	46.60	94.11	Outer Horizontal	11/5/2008	6491	Nil	Shielded obstacle
1330	251132.26N	0561342.12E	PYLON	N	269.91	37.86	105.03	Outer Horizontal	11/5/2008	6491	Nil	Shielded obstacle
1331	250943.79N	0561543.57E	PYLON	N	186.19	40.35	21.31	Outer Horizontal	11/5/2008	6554	Nil	Shielded obstacle
1332	250934.75N	0561549.54E	PYLON	N	181.99	48.89	17.11	Outer Horizontal	11/5/2008	6554	Nil	Shielded obstacle
1513	245844.59N	0561924.61E	TERRAIN	N	201.91	0.00	37.03	Outer Horizontal	2/26/2009	6137	Nil	Shielded obstacle
1515	250244.66N	0561546.26E	MAST_(L)	Y	804.97	106.58	640.09	Outer Horizontal	2/26/2009		Obstacle light to be installed	Obstacle light installed

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

**Management Fields Added**  
Action Required and Mitigation  
Applied



## Filtering the Data

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



# Verification Data

Obstacle Validation Checklist															
Obstacle Type	WGS84 Coordinates (UTM 40N Coordinates)		Ht AMSL (EGM96)	Pen	Surface (Survey Dates)	Lighting Req'd As per Safety study	Lighted As per Survey	Verified by OAT	Marking Req'd As per Safety study	Marked	Verified by OAT	Warning Spheres Req'd As per Safety study	Warning Spheres installed	Verified by OAT	Remarks
	Latitude	Longitude	m	m		Y/N	Y/N		Y/N			Y/N	Y/N		
Building	250715.72N	0562001.87E	181.15	121.27	Inner Horizontal	Y	Y		N	N	NA	N	N	NA	
Building	250716.21N	0561928.39E	161.93	102.05	Inner Horizontal	Y	Y		N	N	NA	N	N	NA	
Building	250722.47N	0561854.25E	130.17	70.29	Inner Horizontal	Y	Y		N	N	NA	N	N	NA	
Flag Pole	250715.43N	0561700.05E	186.32	126.44	Inner Horizontal	Y	Y		N	N	NA	N	N	NA	
Stadium	250713.18N	0561732.55E	89.76	7.27	Approach 11	Y	N		N	N	NA	N	N	NA	
Building	250717.46N	0562112.15E	180.94	121.06	Inner Horizontal	Y	Y		N	N	NA	N	N	NA	
Mast	250745.86N	0562059.47E	130.25	70.37	Inner Horizontal	Y	N		Y	Y		N	N	NA	
Mast	250959.95N	0561034.01E	829.33	638.44	Approach 11	Y	Y		Y	Y		N	N	NA	
Pylon	250756.76N	0561606.96E	144.8	27	Take off 29	Y	Y		Y	Y		Y	Y		
Pylon	250811.37N	0561613.62E	150.48	32.7	Take off 29	Y	N		Y	Y		Y	Y		
Pylon	250826.82N	0561625.28E	151.39	86.18	Conical	Y	N		Y	Y		Y	Y		
Mast	250833.24N	0561628.00E	178.58	110.33	Conical	Y	N		Y	Y		N	N	NA	
Building	250721.14N	0561914.44E	142.93	83.05	Inner Horizontal	Y	Y		N	N	NA	N	N	NA	
Mast	250641.84N	0562017.67E	83.74	23.86	Inner Horizontal	Y	Y		Y	Y		N	N	NA	
Mast	250701.78N	0561958.84E	67.72	7.84	Inner Horizontal	Y	N		Y	Y	NA	N	N	NA	



# The Map



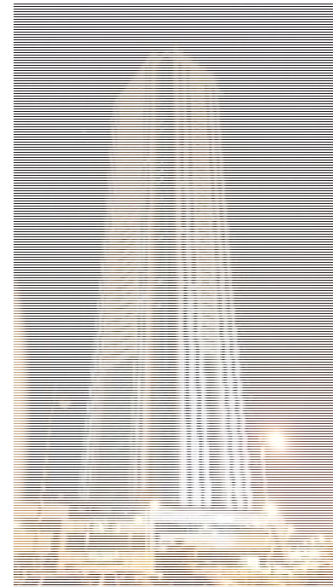
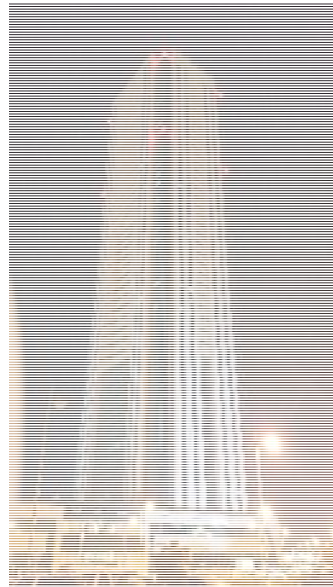
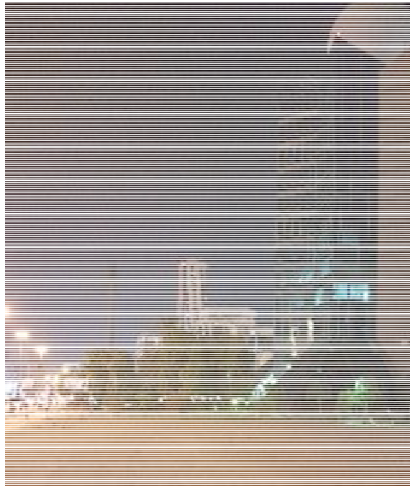
الهيئة العامة للطيران المدني  
GENERAL CIVIL AVIATION AUTHORITY



# The Results...



**Obstacle ID: 3384**  
**Fujairah Tower**



*Photos:*  
*15 October 2017*

**Assessment:**  
**Compliant**

*...in excess of regulation...*  
*No action required*

**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 established 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:**

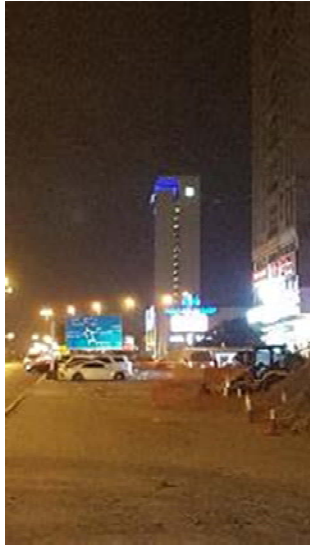
- Flights are not permitted over this area due to established city
- Lighting applied from “ground level” in consideration of surrounding structures
- High Intensity | Type A on top is not required – but no dazzle effect reported

**Surface Penetrated: Inner Horizontal**  
**Obstacle Type: Building**

**Ground Height: 159.45m**



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



*Photos:*  
*15 October 2017*

**Assessment:**  
**Compliant**

*...in excess of regulation...*  
*No action required*

**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

***Aeronautical Study: 19 September 2012***

**Surface Penetrated: Inner Horizontal**  
**Obstacle Type: Building**

**Ground Height: 90.66m**





**Obstacle ID: 4932**  
**Stadium**



United Arab Emirates



**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

*Photos:*  
*15 October 2017*

**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*

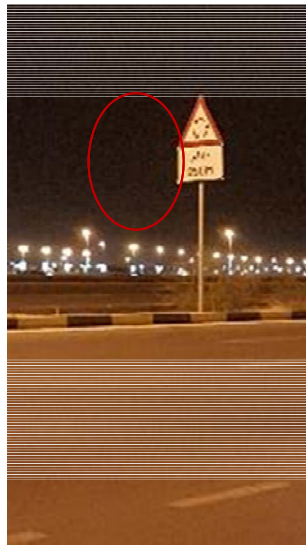
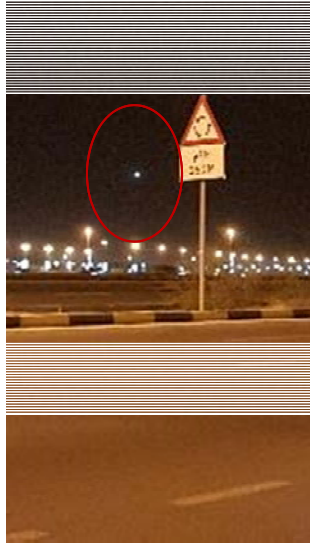
**Aeronautical Study: 28 October 2014**

**Surface Penetrated: Approach 11**  
**Obstacle Type: Building**

**Ground Height: 29.94m**



**Obstacle ID: 4936**  
**Flag Pole**



*Photos:*  
*15 October 2017*

**Assessment:**  
**Compliant**  
*No action required*

**CAR Part IX Reference for Lighting Requirement:**  
Appendix 13 - 13.2.9.8

**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

***Aeronautical Study: 1 June 2015***

**Surface Penetrated: Inner Horizontal**  
**Obstacle Type: Flag Pole**

**Ground Height: 121.05m**



## Obstacle ID: 4422 and 4423 Masts



Photos:  
15 October 2017

**Assessment:**  
**Compliant**  
*No action required*

**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 Intensity | Type A

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

**Inspector Comments:**

- Obstacle 4422 is critical and shields other objects
- Marking and lighting observed at distance

**Surface Penetrated: Approach 11**  
**Obstacle Type: Mast**

**Ground Height: 112.81m**



**Obstacle ID: 4258**  
**Pylon**



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



*Photos:  
15 October 2017*

**Assessment:**  
**Compliant**  
*No action required*

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

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

**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

**Surface Penetrated: Take-Off 29**  
**Obstacle Type: Pylon & Overhead Wires**

**Ground Height: 59.34m**



**Obstacle ID: 2029**  
**Ultra Tech-Star Cement**



Photos:  
17 October 2017

**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**



**Obstacle ID: 2023**  
**Pan Emirates Cement**



**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



*Photos:*  
*17 October 2017*

**Assessment:**

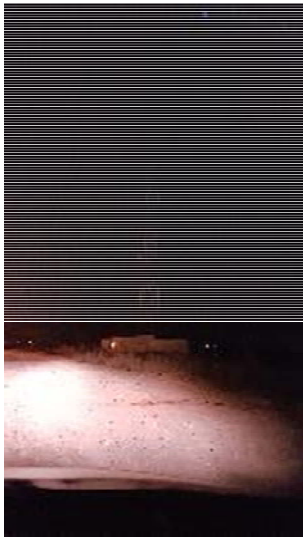
**Compliant**

*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**



**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)

**Obstacle ID: 2031**  
**Comms Towers at Army Camp**



*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...”

**Assessment:**

**Compliant**

*Action: Verify survey*

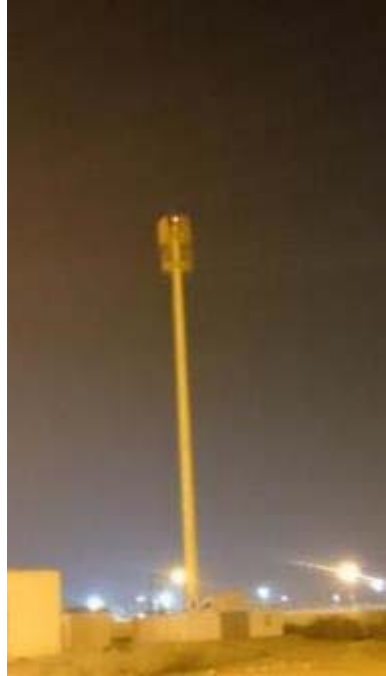
**Inspector Comments:**

- 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**



# The Final Report (GCAA)

Obstacle Description	Obstacle #	Obstacle Location (latitude)	Obstacle Location (longitude)	Penetrating of the OLS (m)	Surface Penetrated	Lighting Type	Marking Confirmed as required (Yes/No)	Comments
Flag Pole	4936	250715.43 N	0561700.05 E	126.44	Inner Horizontal	Flashing White High Intensity - Type A	Not Required	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..."
Mast	4422	250958.97 N	0561033.95 E	671.76	Approach 11	Flashing White High Intensity - Type A	Yes	
Pylon	4258	250756.76 N	0561606.96 E	27	Take-Off 29	Flashing Red Medium Intensity - Type B	Yes	Overhead Wires have Warning Spheres
Mast	1256	250701.78 N	0561958.84 E	7.84	Inner Horizontal	Flashing Red Medium Intensity - Type B	Yes	

