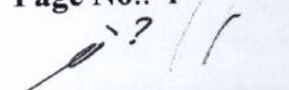


**Part 77****Objects Affecting Navigable Airspace**

This part of the Jordanian Civil Aviation Regulations is hereby adopted under the authority and provision of the Civil Aviation Law No. (41) of 2007, and its amendments.



**Capt. Suleiman Obeidat**  
**Chief Commissioner / CEO**  
**Civil Aviation Regulatory Commission**







## Contents

### Section No.

### Subject

#### **SUBPART- A**

##### **General**

77.1	<a href="#"><u>Applicability.</u></a>
77.3	<a href="#"><u>Definition of Terms</u></a>
77.5	<a href="#"><u>Standards</u></a>
77.7	<a href="#"><u>Kinds of Objects Affected</u></a>
77.9	Reserved

#### **SUBPART- B**

##### **Notice of Construction or Alteration**

77.11	<a href="#"><u>Applicability.</u></a>
77.13	<a href="#"><u>Construction or alteration requiring notice.</u></a>
77.15	<a href="#"><u>Notice of use of light or laser.</u></a>
77.17	<a href="#"><u>Notice of use of weapons.</u></a>
77.19	<a href="#"><u>Notice of use of pyrotechnics.</u></a>
77.21	<a href="#"><u>Form and time of notice and notice requirements.</u></a>
77.23	<a href="#"><u>Additional notice requirements.</u></a>
77.25	<a href="#"><u>Acknowledgment of notice.</u></a>
77.27	<a href="#"><u>Construction or alteration not requiring notice.</u></a>
77.29	Reserved.

#### **SUBPART- C**

##### **Obstruction Standards**

77.31	<a href="#"><u>Applicability.</u></a>
77.33	<a href="#"><u>Standards for Determining Obstructions.</u></a>
77.35	<a href="#"><u>Use of Lights.</u></a>
77.37	<a href="#"><u>Civil airport obstacle limitation surfaces.</u></a>
77.39 Thru 77.41	Reserved.
77.43	<a href="#"><u>Shielding of obstacles</u></a>
77.45	<a href="#"><u>Restriction and Removal of Obstacles</u></a>
77.47 Thru 77.49	Reserved.

#### **SUBPART- D**

##### **Aeronautical Studies of Effect of Proposed Construction on Navigable Airspace**

77.51	<a href="#"><u>Applicability</u></a>
77.53	<a href="#"><u>Initiation of studies</u></a>

- 77.55 [Aeronautical studies](#)
- 77.57 [Discretionary review](#)
- 77.59 [Effective period of determination of no hazard](#)

**SUBPART- E**  
**77.61- 77.99 Reserved**

**SUBPART- F**  
**Establishment of Antenna Farm Areas**

- 77.101 [Applicability.](#)
- 77.103 [General provisions](#)
- 77.105 Reserved
- Appendix-A [Forms](#)
- Appendix-B [Shielding of obstacles](#)

**SUBPART- A**  
**General**

**77.1 Applicability.**

This part:

- (a) Establishes standards for determining obstructions in Jordanian navigable airspace;
- (b) Subject to paragraph (c), prescribes rules for persons within the territorial limits of Jordan, proposing:
  - (1) To construct or alter a structure that could constitute a hazard in navigable airspace; or
  - (2) The use of a structure, lights, lasers, weapons, or pyrotechnics that could constitute a hazard in navigable airspace.
- (c) Sets forth the requirements for notice to the CARC of certain proposed construction or alteration;
- (d) Provides for aeronautical studies of obstructions to air navigation, to determine their effect on the safe and efficient use of airspace;
- (e) Provides for establishing antenna farm areas.
- (f) Provides for establishing an Obstruction Management Committee entrusted with ensuring the implementation of the requirements of this Part.

**77.3 Definition of terms.**

For the purpose of this part:

**Airport:** A defined area on land or other hard surface excluding water (including any buildings, installations and equipment) intended to be used either wholly or in part for the arrival, departure and surface movement of aircraft.

**Airport available for public use:** An airport that is open to the general public with or without a prior request to use the airport.

**Airport reference point:** The designated geographical location of an airport.

**Applicant:** Owner or owner's representative through the concerned authority, or any official authority.

**Ground level at its site:** The highest ground within a 600 m (2000 ft) radius of the site, for the purpose of establishing the maximum height for objects.

**Laser-beam critical flight zone (LCFZ):** Airspace in the proximity of an airport but beyond the LFFZ where the irradiance is restricted to a level unlikely to cause glare effects.

**Laser-beam free flight zone (LFFZ):** Airspace in the immediate proximity to the airport where the irradiance is restricted to a level unlikely to cause any visual disruption.

**Laser-beam sensitive flight zone (LSFZ):** Airspace outside, and not necessarily contiguous with, the LFFZ and LCFZ where the irradiance is restricted to a level unlikely to cause flash-blindness or after-image effects.

**Normal Flight Zone (NFZ):** Airspace not defined as LFFZ, LCFZ or LSFZ but which must be protected from laser radiation capable of causing biological damage to the eye.

**Notice of construction or alteration:** The notification presented to the CARC by any applicant about any construction or alteration of any structure prior to the release of any construction or alteration license.

**Obstacle:** All fixed (whether temporary or permanent) and mobile objects, or parts thereof, that are located on an area intended for the surface movement of aircraft or that extend above an obstacle limitation surface intended to protect aircraft in flight, the height of the objects under consideration include any extensions to the existing ones.

**Obstacle limitation surfaces:** Imaginary surfaces established within the boundary or in the vicinity of airports for the purpose of defining the volume of airspace that should ideally be kept free from obstacles to ensure safe operation of aircrafts, in compliance with the requirements established in CARC Publication AN 14-I.

**Obstruction Management Committee:** A committee formed by the CARC entrusted to ensure implementation of the requirements of this Part.

**protected flight zones:** Airspace specifically designated to mitigate the hazardous effects of laser radiation.

**Runway:** A defined rectangular area on a land airport prepared for the landing and take-off of aircraft.

**Threshold:** The beginning of that portion of the runway usable for landing.

**Visual Flight Guide:** A guide, forming part of the AIP, that provides essential airport information for pilots performing VFR operations.

**Visual runway:** A runway intended for the operation of aircraft using Non-instrument visual approach procedures.

### **77.5 Standards.**

(a) The standards, as prescribed in 77.33, established in this part for determining obstructions to air navigation, are used by the CARC in:

- (1) Developing technical standards and guidance in for determining obstructions to air navigation
- (2) Imposing requirements for public notice of the construction or alteration of any structure where notice will promote air safety.

(b) The standards used by the CARC in the establishment of flight procedures and aircraft operational limitations are not set forth in this part but are contained in other publications of the CARC.

### **77.7 Kinds of objects affected.**

This part applies to:

(a) Any object of natural growth, terrain, or permanent or temporary construction or alteration, including equipment or materials used therein, and apparatus of a permanent or temporary character; and



(b) Alteration of any permanent or temporary existing structure by a change in its height (including appurtenances), or lateral dimensions, including equipment or materials used therein.

(c) Mobile objects that penetrate the obstacle limitation surfaces defined in CARC Publication AN 14-I.

(d) Except as otherwise provided in this Part, no structure shall be erected, altered, or maintained, and no tree shall be allowed to grow in any zone created by this Part to a height in excess of the applicable height limit herein established for such a zone.

(e) A project on an airport, close to the airport or under the approaches which may need a construction management strategy upon request from the CARC to ensure construction does not impact the safe operation of that airport. It should address in particular, but not limited to, the use of cranes or other tall equipment, activities likely to produce dust or smoke or temporary lighting. A construction management strategy for a project on an airport, as well as any significant construction project in the vicinity of an airport, shall include an Operational Safety Plan during Construction.

### **77.9 Reserved.**

## **SUBPART- B**

### **Notice of Construction or Alteration**

### **77.11 Applicability.**

(a) This subpart requires each applicant proposing any kind of construction or alteration described in Sec. 77.13 (a) to obtain approval of the CARC by submitting a form of a notice, as specified in 77.21. The notice shall specify the locations, coordinates (in WGS 84 and ED 50), heights, and the natural ground level above mean sea level of the construction or alteration for which notice is required and prescribe the form and manner of the notice. It also requires supplemental notices one week before the start, and upon the completion of, certain construction or alteration that was the subject of a notice under Sec. 77.13 (a).

(b) Notices received under this subpart provide a basis for:

(1) Evaluating the effect of the construction or alteration on operational procedures and proposed operational procedure;

- (2) Determining the possible hazardous effect of the proposed construction or alteration on air navigation;
- (3) Determining the requirements for marking and lighting of constructions or alterations, in accordance with CARC Publication AN 14-I;
- (4) Determining other appropriate measures to be applied for continued safety of air navigation; and
- (5) Charting and other notification to airmen (NOTAM) of the construction or alteration.

### **77.13 Construction or alteration requiring notice.**

(a) Each applicant who proposes the construction or alteration of a structure, shall notify the CARC in the form and manner prescribed in Sec. 77.21 if:

(1) Any construction or alteration is:

- (i) Of more than 15 meters in height above ground level at its site within a 5000 meters radius of an airport; or
- (ii) Of more than 40 meters in height above ground level at its site beyond the radius specified in (i) above.

(2) Any construction or alteration of greater height than an obstacle limitation surface in accordance with the criteria specified in CARC Publication AN 14-I.

(3) Any highway, railroad, or other traverse way for mobile objects, of a height which, if adjusted upward 5 meters for any highway where over crossings are designed for a minimum of 5 meters vertical distance, 4 meters for any other public roadway, 3 meters or the height of the highest mobile object that would normally traverse the road, whichever is greater, for a private road, 7 meters for a railroad, and for any other traverse way not previously mentioned, an amount equal to the height of the highest mobile object that would normally traverse it, would exceed a standard of paragraph (a) (1) or (2) of this section.

(4) The object, construction or alteration would be in an instrument approach area.

(5) Any object, construction or alteration would be on any of the following airports:

(i) An airport that is available for public use.

(ii) An airport under construction that is the subject of a notice or proposal on file with the CARC.

(b) Each applicant who proposes construction or alteration that is the subject of a notice under paragraph (a) of this section, and is advised by the CARC that a supplemental notice is required, shall submit that notice on a prescribed form, CARC/DASS Form 77-2 , Appendix –A page A- 2 of this part, to be received by the CARC at least one week before the start of the construction or alteration.

(c) Each applicant who undertakes construction or alteration that is the subject of a notice under paragraph (a) of this section shall, within 7 days after that construction or alteration reaches its greatest height, submit a supplemental notice to the CARC/DASS Form 77-2, Appendix–A page A- 2 of this part, or if the CARC advises the applicant that submission of the form is required.

(d) The CARC reserves the right to request any of the law enforcement governmental entity to act against any applicant who failed to notify the CARC of the proposed construction or alteration to remove the structure.

(e) A notice filed with the CARC does not relieve the applicant of compliance with any other applicable regulations.

#### **77.15 Notice of use of light or laser.**

Each person proposing to operate a light or laser within 18500 meters of an airport reference point and below 3000 meters Above Ground Level (AGL) shall notify the CARC in accordance with 77.21.

#### **77.17 Notice of use of weapons.**

(a) Any appropriate authority proposing to allow the use of weapons that will fire or launch a projectile that will have a trajectory higher than 60 m shall notify the CARC of the proposal in accordance with 77.21.

(b) The use of weapons is prohibited within 15000 m from the airport reference point.

**77.19 Notice of use of pyrotechnics.**

(a) Each person proposing to stage a pyrotechnics display that will involve the firing or launching of a projectile that will have a trajectory higher than 60 m, beyond 15000 m from the airport reference point, shall notify the CARC of the proposal in accordance with 77.21.

(b) Pyrotechnics displays that will involve the firing or launching of a projectile that will have a trajectory higher than 60 m are prohibited within 15000m from the airport reference point.

**77.21 Form and time of notice and notice requirements.**

(a) Each person required to notify the CARC under Sec. 77.13 shall complete CARC/DASS Form 77-1 , Appendix –A page A- 1 of this part, and submit it to the CARC at least 30 days prior to the proposed date of commencement of construction, alteration, or use. However, a notice relating to proposed construction or alteration that is subject to the licensing requirements of the Telecommunications Regulatory Commission (TRC) or any other concerned authority may be sent to the CARC at the same time the application for construction is filed with the Telecommunications Regulatory Commission (TRC) or authority, or at any time before that filing.

(b) In the case of an emergency involving essential public services, public health, or public safety that requires immediate construction or alteration of a structure, or use of a structure, lights, lasers, weapons, or pyrotechnics, the 30-day requirement in paragraph (a) of this section does not apply and the notice may be sent by telephone, telegraph, or other expeditious means, with a CARC/DASS Form 77-1 , Appendix –A page A- 1 of this part, submitted to the CARC within 5 days thereafter.

(c) A person proposing to use lights, lasers, weapons, or pyrotechnics under Sec. 77.15. 77.17 and 77.19 shall complete CARC/DASS Form 77-3 , Appendix –A, page A- 3 of this part, and submit it to the CARC at least 14 working days prior to the commencement of the use.

(d) Each applicant who is required to notify the CARC by paragraph (b) or/and (c) of Sec. 77.13, shall send a notice of progress of construction or alteration, on the form prescribed for this purpose CARC/ DASS Form 77-2 , Appendix –A page A- 2 of this part .

(e) Each applicant who is required to notify the CARC by paragraph 77.13, 77.15, 77.17 or 77.19 shall send a notice of proposed use on the form prescribed for this purpose CARC/ DASS Form 77-3, Appendix –A page A- 3 of this part.

### **77.23 Additional notice requirements.**

(a) Each person who is required to give notice under 77.13, 77.15, 77.17 and 77.19 shall, if and when required by the CARC, submit a written notification to the CARC of the actual commencement date of the construction, alteration or use as applicable.

(b) Each person who is required to give notice under 77.13 shall notify the CARC in writing on CARC /DASS Form 77-2, Appendix –A, Page A-2 of this part that construction or alteration:-

(1) Has reached 130 ft (40 m) in height above the ground level at its site, within 5 days of it doing so; and

(2) Has reached its greatest height, within 5 days of it doing so.

(c) The notice required by paragraph (b), when the structure reaches its greatest height, shall include a determination by a CARC designated entity of structure height and position and proof of compliance with marking and lighting requirements as determined by the CARC.

(d) Each person who abandons a construction or alteration project that is the subject of a notice under this Part shall notify the CARC in writing within 5 days after the project is abandoned.

(e) Each person who dismantles removes or suffers the destruction of a structure that is the subject of a notice under this Part shall notify the CARC in writing, within 5 days after the construction or alteration is removed, dismantled or destroyed.

**7.25 Acknowledgment of notice.**

(a) The CARC shall acknowledge in writing the receipt of each notice submitted under Sec. 77.13(a), 77.15, 77.17 and 77.19.

(b) If the construction or alteration proposed in a notice is one for which lighting or marking is prescribed, the acknowledgment shall contain a statement to that effect and information on how the structure should be marked and lighted in accordance with the criteria established in CARC Publication AN 14-I.

(c) The acknowledgment shall state that an evaluation of the proposed construction or alteration has resulted in a determination that the construction or alteration:

(1) Would not exceed any standard of Subpart C and would not be a hazard to air navigation; or

(2) Would exceed a standard of Subpart C but would not be a hazard to air navigation; or

(3) Would exceed a standard of Subpart C and further aeronautical study is necessary, subject to payment of CARC's applicable charges, to determine whether it would be a hazard to air navigation, that the Applicant may request, within 30 days of receiving the acknowledgment, that further study, and that, pending completion of any further study, it is presumed the construction or alteration would be a hazard to air navigation.

**77.27 Construction or alteration not requiring notice.**

As exception of Sec. 77.17, no applicant is required to notify the CARC for any of the following construction or alteration

Any air navigation facility, airport visual approach or landing aid, aircraft arresting device, or meteorological device, if:

(a) Its type is approved by the CARC; and

(b) Its location and height is fixed by its functional purpose.

**77.29 Reserved.**

**SUBPART- C**  
**Obstruction Standards**

**77.31 Applicability.**

(a) This subpart establishes standards for determining obstructions to air navigation. It applies to existing and proposed manmade objects, objects of natural growth, and terrain. The standards apply to the use of navigable airspace by aircraft and to existing air navigation facilities, such as an air navigation aid, airport, airway, instrument approach or departure procedure, or approved off-airway route. Additionally, those standards apply to a planned facility or use, or a change in an existing facility or use, if a proposal therefore is on file with the CARC on the date the notice required by Sec. 77.13(a), 77.15, 77.17 and 77.19 is filed.

(b) The standards in this subpart apply to the effect of construction or alteration proposals upon an airport if, at the time of filing of the notice required by Sec. 77.13(a), 77.15, 77.17 and 77.19 that airport is:

- (1) Available for public use.
- (2) A planned or proposed airport or an airport under construction, that is the subject of a notice or proposal on file with the CARC.

**77.33 Standards for determining obstructions.**

(a) An existing object including a mobile object is, and a future object would be, based on the circumstances of each proposal, an obstruction to air navigation if:

- (1) It is 150 meters or higher above ground level at the site of the object.
- (2) Its height penetrates or protrudes the surface of a take-off and landing area of an airport or any obstacle limitation surface of an airport established in accordance with CARC Publication AN 14-I.
- (3) Its height within a terminal obstacle clearance area, including an initial approach segment, a departure area, and a circling approach area, which would result in the vertical distance between any point on the object and an established minimum instrument flight altitude

within that area or segment to be less than the required obstacle clearance.

(4) Its height within an en route obstacle clearance area, including turn and termination areas, of airways or approved off-airway route, that would decrease the minimum obstacle clearance altitude.

(5) It is located within an instrument flight procedures area that is specified in ICAO document 8168-OPS/611, including standard arrival routes, initial, intermediate, final, visual and missed approach segment areas, departure areas and standard instrument departure routes, and would result in:

(i) The vertical distance between any point on the structure and an established minimum instrument flight altitude within that area or segment being less than an obstacle clearance height required under the JCAR; or

(ii) Additional or new ceiling or visibility restrictions or a change in flight procedures applicable to departures within that area;

(6) It is located within an IFR en-route obstacle clearance area, including evaluated routes on en-route and area charts but excluding charted routes as published in the AIP instrument flight guide, and would necessitate an increase in an existing or planned minimum obstacle clearance altitude; or

(b) Except for traverse ways on or near an airport with an operative ground traffic control service, furnished by an air traffic control tower or by the airport management and coordinated with the air traffic control service, the standards of paragraph (a) of this section apply to traverse ways used or to be used for the passage of mobile objects only after the heights of these traverse ways are increased by:

(1) Five meters for a highway where overcrossings are designed for a minimum of five meters vertical distance.

(2) Four meters for any other public roadway.

(3) Three meters or the height of the highest mobile object that would normally traverse the road, whichever is greater, for a private road.

(4) Seven meters for a railroad, and



(5) For any other traverse way not previously mentioned, an amount equal to the height of the highest mobile object that would normally traverse it.

(c) The use of lights is an obstruction to air navigation if an analysis discloses that their use will constitute a hazard in navigable airspace.

(d) The use of lasers is an obstruction to air navigation if their use will produce exposures in navigable airspace exceeding the maximum permissible exposure defined for that zone.

(e) The use of weapons is an obstruction to air navigation if an analysis discloses that their use will constitute a hazard in navigable airspace.

(f) The use of pyrotechnics is an obstruction to air navigation if an analysis discloses that their use will constitute a hazard in navigable airspace.

### **77.35 Use of Lights.**

(a) A non-aeronautical ground light near an airport which might endanger the safety of aircraft shall be extinguished, screened or otherwise modified so as to eliminate the source of danger.

(b) To protect the safety of aircraft against the hazardous effects of laser emitters, the following protected Laser beam zones, as prescribed in CARC Publication AN 14-I, shall be established around airports:

(1) Laser Beam Free Flight Zone (LFFZ).

(2) Laser Beam Critical Flight Zone (LCFZ).

(3) Laser Beam Sensitive Flight Zone (LSFZ).

(c) A non-aeronautical ground light which, by reason of its intensity, configuration or color, might prevent, or cause confusion in, the clear interpretation of aeronautical ground lights shall be extinguished, screened or otherwise modified so as to eliminate such a possibility.

**77.37 Civil airport obstacle limitation surfaces.**

(a) Specifications for civil airport obstacle limitation surfaces are contained in CARC Publication AN 14-I.

(c) Civil airport obstacle limitation surfaces are:

- (1) The conical surface.
- (2) The inner horizontal surface.
- (3) The inner approach surface.
- (4) The approach surface.
- (5) The transitional surface.
- (6) The inner transitional surface.
- (7) The balked landing surface.
- (8) The outer horizontal surface.
- (9) The take off climb surface.

**77.39-41 Reserved.****77.43 Shielding of obstacles.**

(a) The principle of shielding is employed when a substantial and permanent object or natural terrain already penetrates an obstacle limitation surface. When it is considered that such an obstacle is permanent, objects of equal or lesser height around it may at CARC's discretion be permitted to penetrate the surface.

(b) Acceptance by the CARC of obstacle limitation surface penetrations using the shielding principle will always be subject to scrutiny of the operational implications. Existing obstacles will be regarded as shields only when there is no prospect of their removal or destruction.

(c) An object, building, structure or terrain which is accepted as a shielding obstacle and which penetrates an approach or take-off climb surface will create two shielding planes (see Figure 1 in Appendix -B). The first plane

is horizontal at the elevation of the top of the obstacle, and extends from the obstacle in the direction away from the runway. The second plane extends from the top of the shielding obstacle, towards the runway with a negative slope of 10%. The width of these planes will be the width of the obstacle (measured in the plane normal to the extended centerline of the runway) at the obstacle, decreasing with sides parallel to the sides of the relevant protecting surface (see Figure 2 in Appendix-B), until the point where these projected lines converge, or intersect the take-off climb surface or the approach surface. Thus either the profile or plan view may take the form of a truncated triangle (see Figures 1, 2 and 3 in Appendix-B). Where the take-off climb surface and the approach surface are not coincident it may be necessary to adopt a different angle of convergence, between the two surfaces.

(d) A permanent obstacle which penetrates a transitional surface may be regarded as shielding any other obstacles which lie beneath a negative slope of 10% extending from the top of the obstacle except that no obstacle can be considered as shielded that is situated closer to the runway than the shielding obstacle.

(e) An object that is determined by the CARC to be a hazard in navigable airspace may not be required to be marked or lighted if the CARC considers the object to be shielded.

(f) An object that is a lower height than another object:

(1) Already considered to be a hazard in navigable airspace; and

(2) That is marked by standard obstacle marking or lighting, may be considered to be shielded by the other object.

(g) An aeronautical study may be required to determine whether an object that penetrates an obstacle limitation surface is shielded.

(h) A shielding object shall be permanent.

(i) For the purposes of paragraph (c) an object may be classed as permanent only if, when taking the longest view possible, there is no prospect of removal being practicable, possible, or justifiable, regardless of how the pattern, type, or density of air operations might change.

(j) Where the obstacle lies outside of the areas referred to in paragraph (e) it may be considered shielded if located within 600 m of the shielding object.

#### **77.45 Restriction and Removal of Obstacles.**

(a) Objects which do not penetrate an approach surface to a new runway or a proposed runway extension but which would nevertheless adversely affect the optimum performance of visual or non-visual aids should be removed.

(b) Anything which may, in the opinion of the CARC endanger aircraft shall be either removed or marked and lighted as specified in CARC Publication AN-14-1.

(c) Because of the difficulty of recognition, special restrictions must be applied to elevated wires and their supports. Where no other object penetrates a given obstacle limitation surface, overhead wires and their supports should not penetrate a surface passing through the top of the highest existing object and parallel to the established surface for a distance of 1500 meters from the runway threshold. The shielding criteria in Sec. 77.43 does not apply to the shielding of overhead wires.

(d) Overhead wires and cables crossing a river, valley or highway shall be marked and their supporting towers marked and lighted as specified in CARC Publication AN-14-1.

**77.47 – 77.49 Reserved.**

### **SUBPART –D Aeronautical Studies of the Effect of Proposed Construction on Navigable Airspace**

#### **77.51 Applicability.**

(a) This subpart applies to the conduct of aeronautical studies of the effect of proposed construction or alteration on the use of air navigation facilities or navigable airspace by aircraft. In the aeronautical studies, present and future IFR and VFR aeronautical operations and procedures are reviewed and any possible changes in those operations and procedures and in the construction proposal that would eliminate or alleviate the conflicting demands are ascertained.

(b) The conclusion of a study made under this subpart is normally a determination as to whether the specific proposal studied would be a hazard to air navigation.

### **77.53 Initiation of studies.**

An aeronautical study is conducted by the CARC:

- (1) Upon the request of the applicant or any construction or alteration for which a notice is submitted under Subpart B of this part, unless that construction or alteration would be located within an antenna farm area established under Subpart F of this part; or
- (2) Whenever the CARC determines it appropriate.

### **77.55 Aeronautical studies.**

(a) The Obstruction Management Committee shall conduct the aeronautical study of the effect of the proposal upon the operation of air navigation facilities and the safe and efficient utilization of the navigable airspace. This study may include the physical, environment, noise, pollution, and electromagnetic radiation effect the proposal may have on the operation of an air navigation facility.

(b) To the extent considered necessary, the Obstruction Management Committee shall:

- (1) Solicit consultations from subject matter experts.
- (2) Solicit comments from all interested persons;
- (3) Explore objections to the proposal and attempts to develop recommendations for adjustment of aviation requirements that would accommodate the proposed construction or alteration;
- (4) Examine possible revisions of the proposal that would eliminate the exceeding of the standards in Subpart C of this part; and
- (5) Convene a meeting with all interested persons for the purpose of gathering all facts relevant to the effect of the proposed construction or alteration on the safe and efficient utilization of the navigable airspace

(c) The Obstruction Management Committee shall issue a determination as to whether the proposed construction or alteration would be a hazard to air navigation and sends copies to all known interested persons. This determination is final unless a petition for review is granted under Sec. 77.57.

(d) The determination will state one of the following:

- (1) No objection;
- (2) No objection subject to certain stated conditions;
- (3) Objection (with reason given).

(e) If the applicant revises his proposal to eliminate exceeding of the standards of Subpart C of this part, or withdraws it, the Obstruction Management Committee shall terminate the study and notify all known interested persons.

#### **77.57 Discretionary review.**

(a) The applicant of any proposed construction or alteration or any person who stated a substantial aeronautical objection to it in an aeronautical study, or any person who has a substantial aeronautical objection to it but was not given an opportunity to state it, may petition CARC's determination within 30 days after the date of notifying the applicant of the determination under Sec. 77.25 or Sec. 77.55 or revision or extension of the determination under Sec. 77.59(c), for a review of the determination, revision, or extension. This paragraph does not apply to any acknowledgment issued under Sec. 77.25(c) (1).

(b) The petition must contain a full statement of the basis upon which it is made.

(c) The CARC shall examine each petition and decide whether a review will be made and, if so, the review shall be conducted on the basis of written materials, which shall include a report by the Obstruction Management Committee on the relevant aeronautical study, briefs, related submissions by any interested party, and any other relevant facts, on the basis of which, the CARC shall affirm, revise, or reverse the determination issued under Sec. 77.25, Sec. 77.55 or Sec.77.59(c) or related appendices.

**77.59 Effective period of determination of no hazard.**

(a) Unless it is otherwise extended, revised, or terminated, each final determination of no hazard made under this subpart or Subpart B of this part expires 18 months after its effective date, regardless of whether the proposed construction or alteration has been started, or on the date the proposed construction or alteration is abandoned, whichever is earlier.

(b) In any case, including a determination to which paragraph (d) of this section applies, where the proposed construction or alteration has not been started during the applicable period by actual structural work, such as the laying of a foundation, but not including excavation, any interested person may, at least 15 days before the date the final determination expires, petition the CARC to:

(1) Revise the determination based on new facts that change the basis on which it was made; or

(2) Extend its effective period.

(c) The Obstruction Management Committee shall review each petition presented under paragraph (b) of this section, and revise, extend, or affirm the determination as indicated by the committee findings.

(d) In any case in which a final determination is made under this subpart or subpart B of this Part and relates to proposed construction or alteration that may not be started unless a concerned official authority issues an appropriate construction permit, the effective period of each final determination includes:

(1) The time required to apply to the concerned authority for a construction permit, but not more than 6 months after the effective date of the determination; and

(2) The time necessary for the concerned authority to process the application except in a case where the authority determines a shorter effective period is required by the circumstances.

(f) If the concerned authority issues a construction permit, the final determination is effective until the date prescribed for completion of the construction. If the concerned authority refuses to issue a construction permit, the final determination expires on the date of its refusal.

**SUBPART- E**

**77.61 - 77.99 Reserved.**

**SUBPART –F****Establishment of Antenna Farm Areas****77.101 Applicability.**

(a) This subpart establishes antenna farm areas in which antenna structures may be grouped to localize their effect on the use of navigable airspace.

(b) It is the policy of the CARC to encourage the use of antenna farms and the single structure-multiple antenna concept for radio and television towers whenever possible. In considering proposals for establishing antenna farm areas, it considers as far as possible the revision of aeronautical procedures and operations to accommodate antenna structures that will fulfill broadcasting requirements.

**77.103 General provisions.**

(a) An antenna farm area consists of a specified geographical location with established dimensions of area and height, where antenna towers with a common impact on aviation may be grouped. Each such area is established by appropriate rule making action.

(b) Each proposal for an antenna farm area is evaluated on the basis of its effect on the use of navigable airspace. The views of the Telecommunications Regulatory Commission (TRC) are requested on the effect that each establishment of an antenna farm area would have on its statutory responsibilities. Any views submitted by TRC are fully considered before the antenna farm concerned is established. If the TCR advises that the establishment of any proposed antenna farm area would interfere with its statutory responsibility, the proposed area is not established.

(c) The establishment of an antenna farm area is considered whenever it is proposed by:

- (1) The CARC;
- (2) The Telecommunications Regulatory Commission (TRC);
- (3) The applicant of a proposed antenna tower; or




- (4) Any other person having a substantial interest in a proposed antenna tower.

**77.105 Reserved.**


**Appendix-A  
Forms**

**CARC/DASS Form 77-1**

	Failure to Provide all requested information may delay Processing of your notice  <b>Notice of Proposed Construction or Alteration</b>	For CARC Use Only _____ Aeronautical Study Number
<b>1. Sponsor (through the concerned official authority)</b> Name: _____ Address: _____ Telephone: _____ Fax: _____	<b>8. Latitude:</b> _____ ° _____ ' _____ " <b>9. Longitude:</b> _____ ° _____ ' _____ " <b>10. Nearest City / Town:</b> _____ <b>11. Nearest Public-use</b> (not private-use) or military Airport or Heliport	
<b>2. Sponsor's Representative (if other than #1)</b> Name: _____ Address: _____ Telephone: _____ Fax: _____	<b>12. Distance from # 10 to Structure:</b> _____ <b>13. Direction from # 10 to Structure:</b> _____ <b>14. Site Elevation (AMSL):</b> _____ m. <b>15. Total Structure Height (AGL):</b> _____ m. <b>16. Overall Height (#13,#14) (AMSL):</b> _____ m. <b>17. Previous CARC Aeronautical Study Number</b> (if applicable): _____	
<b>3. Notice of:</b> <input type="checkbox"/> New Construction <input type="checkbox"/> Alteration <input type="checkbox"/> Existing <b>4. Duration:</b> <input type="checkbox"/> Permanent <input type="checkbox"/> Temporary    _____ Months    _____ days <b>5. Work Schedule:</b> Beginning _____ End _____ <b>6. Type:</b> <input type="checkbox"/> Antenna Tower <input type="checkbox"/> Crane <input type="checkbox"/> Building <input type="checkbox"/> Power Line <b>7. Marking / Painting and / or Lighting preferred:</b> <input type="checkbox"/> Red Lights and Paint <input type="checkbox"/> Dual and Red Medium Intensity White <input type="checkbox"/> White Medium Intensity <input type="checkbox"/> Dual Red and High Intensity White <input type="checkbox"/> White High Intensity <input type="checkbox"/> Other _____	<b>18. Description of Location:</b> (Attach a Map with the precise site marked showing information contained in # 9 through 13 above; showing the latitude, longitude and site elevation AMSL).  _____  _____	
<b>19. Complete Description of Proposal:</b>          		
<b>I hereby certify that all of the above statements made by me are true, complete, and correct.</b>		
Signature	Title	Date
Notice is required by JCAR Part 77		

**CARC/DASS Form 77-2**

**SUPPLEMENTAL NOTICE**

	<p><b>Submission Instructions:</b>  <b>(Complete and mail to CARC, P.O.Box 7547, Amman 11110)</b>  <u>For Advance Notice of Actual Construction or Alteration:</u> Complete items 1, 2, 3A(1), 3A(2), 4, and 5 if applicable.  <u>For Notice of Structure Reaching Greatest Height:</u> Complete all items.</p>	<p style="text-align: center;">For CARC Use Only</p> <hr/> <p style="text-align: center;">Aeronautical Study Number</p>
--	---	---

**Notice of Actual Construction or Alteration**  
 (Please Type or Print on this Form)

**1. Construction**

<b>A. Type and Description of Construction</b>	<input type="checkbox"/> New <input type="checkbox"/> Alteration	<b>B. Owner of Structure</b>
--	---	------------------------------

**2. Construction Location - Height**

<b>A. Coordinates (to hundredths of seconds, if known)</b> Latitude    Longitude °                '                "                °                '                "	<b>B. Location (City or town, including street address if any)</b>
<b>C. Construction Heights</b>  Total Height (Structure and Site) Above Mean Sea Level  Site Elevation    m. AMSL Structure Height    m. AGL    m. AMSL	<b>D. Site Elevation Determined by</b> <input type="checkbox"/> Actual Survey <input type="checkbox"/> Other (Specify) _____ _____

**E. Name of Nearest Public-Use or Military Airport (Include Distance and Direction from Airport)** \_\_\_\_\_  
 \_\_\_\_\_

**3. Construction Notification**

A. Notification (Notice is Critical to Flight Safety and required by JCAR Part 77) ★	Date	B. Construction Project	Date
★ (1) Construction will start (Submit at least one week in advance)		(1) Project Abandonment	
(2) Estimated Completion		(2) Construction Dismantled	
★ (3) Structure Reached Greatest Height (Submit within one week)			

**4. Marking and Lighting**

<b>A. Marked</b>  <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Temporary	<b>B. Lighted</b>  <input type="checkbox"/> Medium Intensity White <input type="checkbox"/> High Intensity White <input type="checkbox"/> Red <input type="checkbox"/> Dual (Medium Intensity White and Red) <input type="checkbox"/> Dual (High Intensity White and Red) <input type="checkbox"/> None
---	--

**5. Preparer's Certification**

(IF SUBMITTED BY A SPONSOR'S REPRESENTATIVE, PLEASE ALSO COMPLETE ITEM B)


<b>A. Owner's representative</b> Name: _____ Address: _____ Telephone No: _____	<b>B. Construction Owner</b> Name: _____ Address: _____ Telephone No: _____
--	--

**I hereby certify that the information provided is true, complete, and correct**

Signature	Title	Date
-----------	-------	------

Notice is required by JCAR Part 77

**CARC/DASS Form 77-3**

	Failure to Provide all requested information may delay Processing of your notice <b>Notice of Proposal to use Lights, Lasers, Weapons or Pyrotechnics</b>	For CARC Use Only <hr/> Aeronautical Study Number
<b>1. Sponsor (person, company, concerned authority, etc ...)</b> Name: _____ Address: _____ Telephone: _____ Fax: _____	<b>7. Latitude:</b> _____ ° _____ ' _____ " " <b>8. Longitude:</b> _____ ° _____ ' _____ " " <b>9. Nearest City / Town:</b> _____ <b>10. Nearest Public-use</b> (not private-use) or military Airport or Heliport	
<b>2. Sponsor's Representative (if other than #1)</b> Name: _____ Address: _____ Telephone: _____ Fax: _____	<b>11. Distance from # 10 to Structure:</b> _____ <b>12. Direction from # 10 to Structure:</b> _____ <b>13. Site Elevation (AMSL):</b> _____ m. <b>14. Total Structure Height (AGL):</b> _____ m. <b>15. Overall Height (#13,#14) (AMSL):</b> _____ m. <b>16. Previous CARC Aeronautical Study Number</b> (if applicable):	
<b>3. Notice of:</b> <input type="checkbox"/> Light                      Output power: _____ <input type="checkbox"/> Laser                        Maximum height: _____ <input type="checkbox"/> Pyrotechnics            Maximum height: _____ <input type="checkbox"/> Weapons	<b>17. Description of Location:</b> (Attach a Map with the precise site marked showing information contained in # 8 through 12 above; showing the latitude, longitude and site elevation AMSL).	
<b>4. Duration:</b> <input type="checkbox"/> Permanent <input type="checkbox"/> Temporary    Months    days		
<b>5. Work Schedule:</b> Beginning _____ End _____		
<b>18. Complete Description of Proposal:</b>		
<b>I hereby certify that all of the above statements made by me are true, complete, and correct.</b>		
Signature	Title	Date

Notice is required by JCAR Part 77

### Appendix-B Shielding of Obstacles

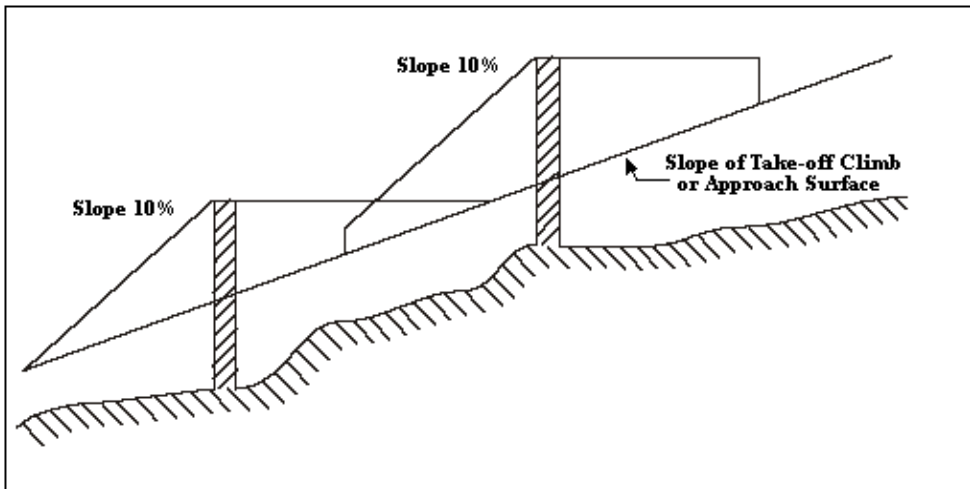


Figure (1)

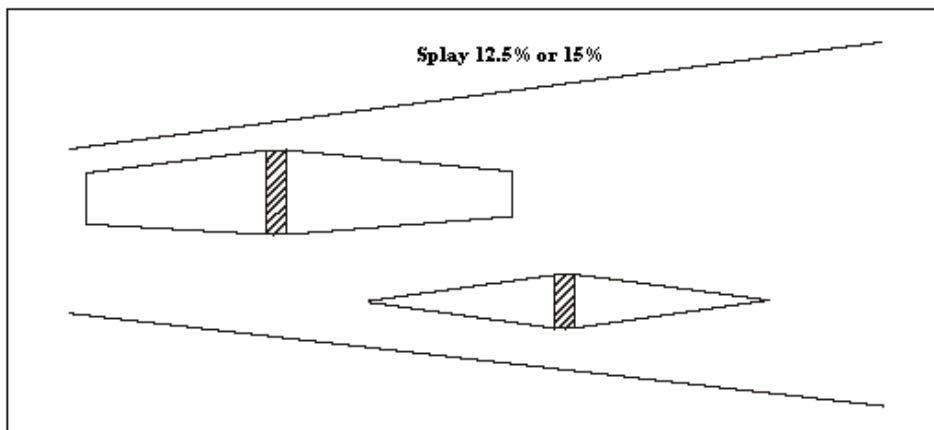


Figure (2)

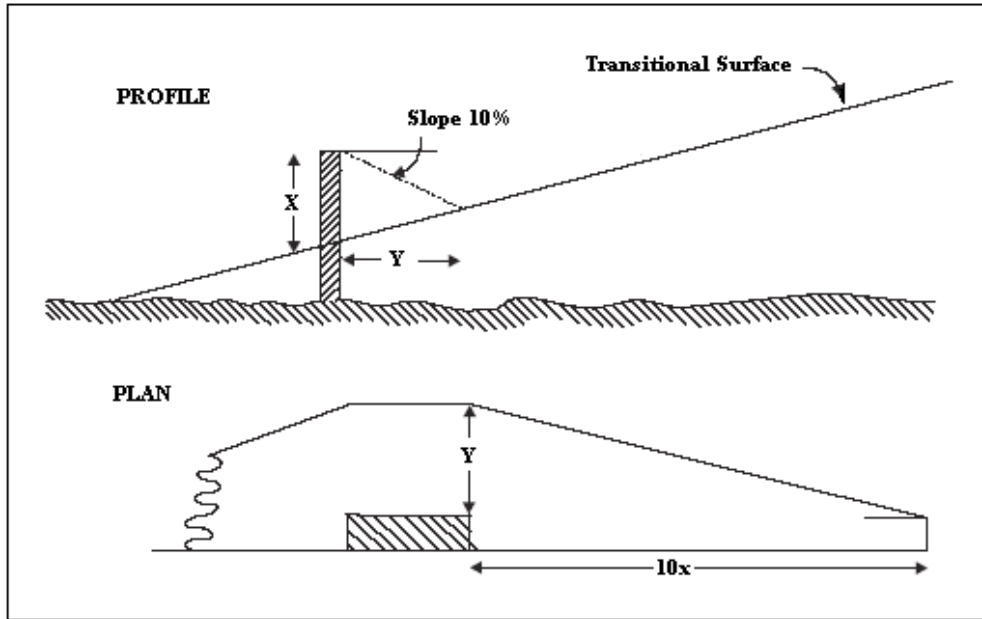


Figure (3)