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of Transportation

Federal Aviation Administration

Advisory Circular

Subject: Change 11 to AIRPORT DESIGN

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Initiated by: AAS-100 **Change:** 11

1. PURPOSE. This Change clarifies the standard for the Runway Protection Zone (RPZ). Recently, there has been some confusion about the permissibility of vehicle parking in RPZs. The FAA adopted a prohibition against parking in the extended Runway Object Free Area (ROFA) in 1989. While the intent of the RPZ standard has always been to expand this prohibition to the central portion of the RPZ along its entire length, this intent was not entirely clear in the previous standard.

This Change also does the following—

a. Updates the Table of Contents.

b. Updates Figure 2-3.

c. Makes an editorial correction to Table 3-3.

2. CHANGED TEXT. Changed text is indicated by vertical bars in the margins.

PAGE CONTROL CHART

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Director of Airport Safety and Standards

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b. Recommendations. Other objects that are desirable to clear, if practicable, are objects that do not have a substantial adverse effect on the airport but, if removed, will enhance operations. These include objects in the controlled activity area and obstructions to air navigation that are not covered in paragraph 211.a, especially those penetrating an approach surface. On a paved runway, the approach surface starts 200 feet (61 m) beyond the area usable for takeoff or landing, whichever is more demanding. On an unpaved runway, the approach surface starts at the end of the area usable for takeoff or landing.

212. RUNWAY PROTECTION ZONE (RPZ). The RPZ's function is to enhance the protection of people and property on the ground. This is achieved through airport owner control over RPZs. Such control includes clearing RPZ areas (and maintaining them clear) of incompatible objects and activities. Control is preferably exercised through the acquisition of sufficient property interest in the RPZ.

a. Standards.

(1) RPZ Configuration/Location. The RPZ is trapezoidal in shape and centered about the extended runway centerline. The central portion and controlled activity area the two components of the RPZ (see Figure 2-3). The RPZ dimension for a particular runway end is a function of the type of aircraft and approach visibility minimum associated with that runway end. Table 2-4 provides standard dimensions for RPZs. Other than with a special application of declared distances, the RPZ begins 200 feet (60 m) beyond the end of the area usable for takeoff or landing. With a special application of declared distances, see Appendix 14, separate approach and departure RPZs are required for each runway end.

(a) The Central Portion of the RPZ. The central portion of the RPZ extends from the beginning to the end of the RPZ, centered on the runway centerline. Its width is equal to the width of the runway OFA (see Figure 2-3). Paragraph 307 contains the dimensional standards for the OFA.

(b) The Controlled Activity Area. The controlled activity area is the portion of the RPZ to the sides of the central portion of the RPZ.

(2) Land Use. In addition to the criteria specified in paragraph 211, the following land use criteria apply within the RPZ:

(a) While it is desirable to clear all objects from the RPZ, some uses are permitted, provided they do not attract wildlife (see paragraph 202.g., *Wildlife Hazards*, and Appendix 17 for dimensional standards), are outside of the Runway OFA, and do not interfere with navigational aids. Automobile parking facilities, although discouraged, may be permitted, provided the parking facilities and any associated appurtenances, in addition to meeting all of the preceding conditions, are located outside of the central portion of the RPZ. Fuel storage facilities may not be located in the RPZ.

(b) Land uses prohibited from the RPZ are residences and places of public assembly. (Churches, schools, hospitals, office buildings, shopping centers, and other uses with similar concentrations of persons typify places of public assembly.) Fuel storage facilities may not be located in the RPZ.

b. Recommendations. Where it is determined to be impracticable for the airport owner to acquire and plan the land uses within the entire RPZ, the RPZ land use standards have recommendation status for that portion of the RPZ not controlled by the airport owner.

c. FAA Studies of Objects and Activities in the Vicinity of Airports. The FAA policy is to protect the public investment in the national airport system. To implement this policy, the FAA studies existing and proposed objects and activities, both off and on public-use airports, with respect to their effect upon the safe and efficient use of the airports and safety of persons and property on the ground. These objects need not be obstructions to air navigation, as defined in 14 CFR Part 77. As the result of a study, the FAA may issue an advisory recommendation in opposition to the presence of any off-airport object or activity in the vicinity of a public-use airport that conflicts with an airport planning or design standard or recommendation.

213. to 299. RESERVED

Table 2-1. Runway Separation Standards for aircraft approach categories A & B

ITEM	DIM 1/	AIRPLANE DESIGN GROUP				
		I 2/	I	II	III	IV
Visual runways and runways with not lower than ¾-statute mile (1200 m) approach visibility minimums						
Runway Centerline to:						
Parallel Runway Centerline	H	- Refer to paragraphs 207 and 208 -				
Holdline		- Refer to Advisory Circular 150/5340-1 -				
Taxiway/Taxilane Centerline 3/	D	150 ft 45 m	225 ft 67.5 m	240 ft 72 m	300 ft 90 m	400 ft 120 m
Aircraft Parking Area	G	125 ft 37.5 m	200 ft 60 m	250 ft 75 m	400 ft 120 m	500 ft 150 m
Helicopter Touchdown Pad		- Refer to Advisory Circular 150/5390-2 -				
Runways with lower than ¾-statute mile (1200 m) approach visibility minimums 4/						
Runway Centerline to:						
Parallel Runway Centerline	H	- Refer to paragraphs 207 and 208 -				
Holdline		- Refer to Advisory Circular 150/5340-1 -				
Taxiway/Taxilane Centerline 3/	D	200 ft 60 m	250 ft 75 m	300 ft 90 m	350 ft 105 m	400 ft 120 m
Aircraft Parking Area	G	400 ft 120 m	400 ft 120 m	400 ft 120 m	400 ft 120 m	500 ft 150 m
Helicopter Touchdown Pad		- Refer to Advisory Circular 150/5390-2 -				

1/ Letters correspond to the dimensions on Figure 2-1.

2/ These dimensional standards pertain to facilities for small airplanes exclusively.

3/ The taxiway/taxilane centerline separation standards are for sea level. At higher elevations, an increase to these separation distances may be required to keep taxiing and holding airplanes clear of the OFZ (refer to paragraph 206).

4/ For approaches with visibility less than ½-statute miles, runway centerline to taxiway/taxilane centerline separation increases to 400 feet (120 m).

Table 2-4. Runway protection zone (RPZ) dimensions

Approach Visibility Minimums 1/	Facilities Expected To Serve	Dimensions			
		Length L Feet (meters)	Inner Width W_1 feet (meters)	Outer Width W_2 feet (meters)	RPZ acres
Visual And Not lower than 1-Mile (1 600 m)	Small Aircraft Exclusively	1,000 (300)	250 (75)	450 (135)	8,035
	Aircraft Approach Categories A & B	1,000 (300)	500 (150)	700 (210)	13,770
	Aircraft Approach Categories C & D	1,700 (510)	500 (150)	1,010 (303)	29,465
Not lower than ¾-Mile (1 200 m)	All Aircraft	1,700 (510)	1,000 (300)	1,510 (453)	48,978
Lower than ¾-Mile (1 200 m)	All Aircraft	2,500 (750)	1,000 (300)	1,750 (525)	78,914

1/ The RPZ dimensional standards are for the runway end with the specified approach visibility minimums. The departure RPZ dimensional standards are equal to or less than the approach RPZ dimensional standards. When a RPZ begins other than 200 feet (60 m) beyond the runway end, separate approach and departure RPZs should be provided. Refer to Appendix 14 for approach and departure RPZs.

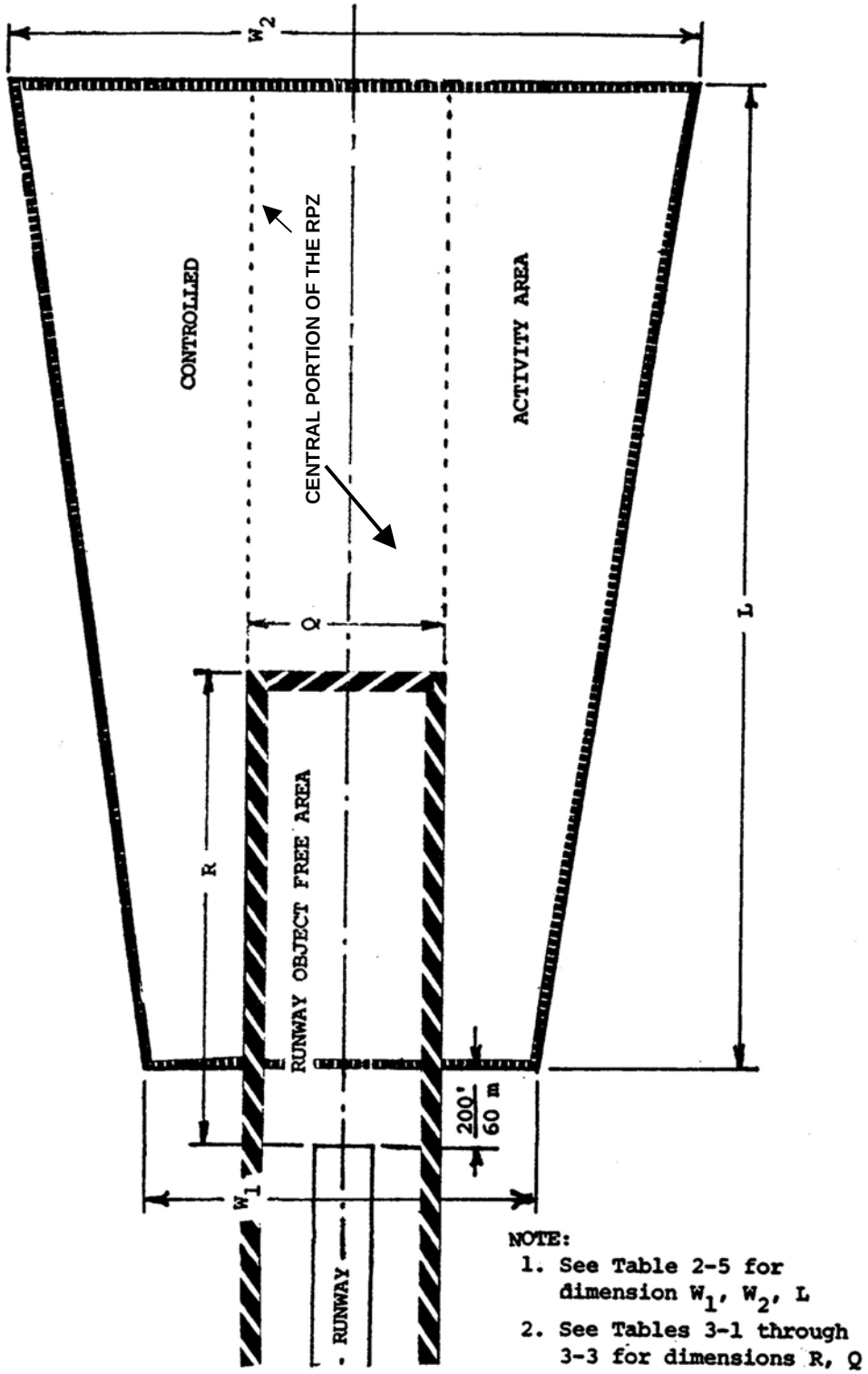

Figure 2-3. Runway protection zone

Table 3-3. Runway design standards for aircraft approach categories C & D

ITEM	DIM 1/	AIRPLANE DESIGN GROUP					
		I	II	III	IV	V	VI
Runway Length	A	- Refer to paragraph 301 -					
Runway Width	B	100 ft	100 ft	100 ft 2/	150 ft	150 ft	200 ft
		30 m	30 m	30 m 2/	45 m	45 m	60 m
Runway Shoulder Width 3/		10 ft	10 ft	20 ft 2/	25 ft	35 ft	40 ft
		3 m	3 m	6 m 2/	7.5 m	10.5 m	12 m
Runway Blast Pad Width		120 ft	120 ft	140 ft 2/	200 ft	220 ft	280 ft
		36 m	36 m	42 m 2/	60 m	66 m	84 m
Runway Blast Pad Length		100 ft	150 ft	200 ft	200 ft	400 ft	400 ft
		30 m	45 m	60 m	60 m	120 m	120 m
Runway Safety Area Width 4/	C	500 ft	500 ft	500 ft	500 ft	500 ft	500 ft
		150 m	150 m	150 m	150 m	150 m	150 m
Runway Safety Area Length Prior to Landing Threshold 5/, 6/		600 ft	600 ft	600 ft	600 ft	600 ft	600 ft
		180 m	180 m	180 m	180 m	180 m	180 m
Runway Safety Area Length Beyond RW End 5/, 6/	P	1,000 ft	1,000 ft	1,000 ft	1,000 ft	1,000 ft	1,000 ft
		300 m	300 m	300 m	300 m	300 m	300 m
Obstacle Free Zone Width and Length		- Refer to paragraph 306 -					
Runway Object Free Area Width	Q	800 ft	800 ft	800 ft	800 ft	800 ft	800 ft
		240 m	240 m	240 m	240 m	240 m	240 m
Runway Object Free Area Length Beyond RW End 7/	R	1,000 ft	1,000 ft	1,000 ft	1,000 ft	1,000 ft	1,000 ft
		300 m	300 m	300 m	300 m	300 m	300 m

1/ Letters correspond to the dimensions on figures 2-1 and 2-3.

2/ For Airplane Design Group III serving airplanes with maximum certificated takeoff weight greater than 150,000 pounds (68,100 kg), the standard runway width is 150 feet (45 m), the shoulder width is 25 feet (7.5 m), and the runway blast pad width is 200 feet (60 m).

3/ Design Groups V and VI normally require stabilized or paved shoulder surfaces.

4/ For Airport Reference Code C-I and C-II, a runway safety area width of 400 feet (120 m) is permissible.

5/ The runway safety area (RSA) length begins at each runway end when a stopway is not provided. When a stopway is provided, the length begins at the stopway end.

6/ The standard RSA length beyond the runway end may be reduced to the standard RSA length prior to landing threshold if a standard Engineered Materials Arresting System (EMAS) is provided. To qualify for this reduction, the EMAS installation must provide the ability to stop the critical aircraft exiting the end of the runway at 70 knots, and the runway must provide either instrument or visual vertical guidance for approaches in the opposite direction. See AC 150/5220-22.

7/ The runway object free area length beyond the end of the runway never exceeds the standard RSA length beyond the runway end as provided by note 6 above.

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