AERONAUTICAL CHARTING FORUM
Charting Group
Meeting 14-02 – October 28 - 30, 2014

RECOMMENDATION DOCUMENT

FAA Control # ACF-CG RD 14-02-288

Title: Airport Reference Codes in the AFD

Subject: Airport/Facility Directory (AFD) Information Re: Approach / Departure Reference Codes (APRC/DPRC) for Airport Movement Area Operations have been adopted within Airport Design, Advisory Circular 150/5300-13A, change1. These codes reflect the proper aircraft design groups' utilization for existing runway to taxiway separations. Reference to these codes allows users to quickly assess a runway's suitability related to critical geometry and visibility without special operations.

Background/Discussion: (APRC/DPRC) have been adopted within Airport Design, Advisory Circular 150/5300-13A. These codes reflect the proper aircraft design groups' utilization to existing runway to taxiway separations. Reference to these codes allows users to quickly assess the utility of the movement areas without special operations. Existing airport infrastructure often meet challenges in accommodating growing aircraft fleet mix. Airports operational capabilities can be identified quickly and efficiently through the use of the APRC and DPRC. The approach/departure reference codes (APRC/DPRC) describe the current operational capabilities of a runway and adjacent taxiways where no special operating procedures are necessary. It is critical for airport operators, air traffic control and pilots to be aware of the airport movement area's capability when referencing Airport/Facility Directory (AFD).

The APRC is composed of three components: Aircraft Approach Category (AAC), Airplane Design Group (ADG), and visibility minimums. Visibility minimum are expressed as RVR values in feet. The APRC denotes a combination of AAC, ADG and visibility condition under which landing operations may be conducted for an existing (runway/taxiway) separation without any operational mitigation. Table below depicts a specific APRC of the largest ADG with the lowest runway visibility condition for an existing runway to taxiway separation.

Approach Reference Code (APRC)

Visibility Minimums	Runway to Taxiway Separation (ft)									
	≥150	≥200	≥225	≥240	≥250	≥300	≥350	≥400	≥500	≥550
Visual	B/I(S)/VIS	B/I(S)/VIS	B/I/VIS	B/II/VIS	B/II/VIS	B/III/VIS D/II/VIS	B/III/VIS	D/IV/VIS D/V/VIS	D/VI/VIS	D/VI/VIS
Not lower than 1 mile	B/I(S)/5000	B/I(S)/5000	B/I/5000	B/II/5000	B/II/5000	B/III/5000 D/II/5000	B/III/5000	D/IV/5000 D/V/5000	D/VI/5000	D/VI/5000
Not lower than 3/4 mile	B/I(S)/4000	B/I(S)/4000	B/I/4000	B/II/4000	B/II/4000	B/III/4000 D/II/4000	B/III/4000	D/IV/4000 D/V/4000	D/VI/4000	D/VI/4000
Lower than 3/4 mile but not lower than 1/2 mile		B/I(S)/2400	B/I/4000 B/I(S)/2400	B/II/4000	B/I/2400	B/III/4000 [1] D/II/4000 B/II/2400	B/III/2400	D/IV/2400 D/V/2400	D/VI/2400	D/VI/2400
Lower than 1/2 mile								D/V/2400 D/IV/1600	D/VI/2400 D/V/1600	D/VI/1600

Notes: (S) denotes small aircraft

Entries for Approach Category D also apply to Approach Category E. However, there are no Approach Category E aircraft currently in the civil fleet.
For ADG-VI aircraft with tail heights of less than 66 feet (20 m), ADG-V separation standards may be used.

1. How to use this table:

Each APRC entry denotes a combination of Aircraft Approach Category, Airplane Design Group, and visibility condition under which landing operations may be conducted without operational mitigations. Within an APRC, operations may be conducted by airplanes up to the AAC and ADG, and down to the visibility conditions noted. In this example, with visibility minimums of lower than 3/4 mile but not lower than 1/2 mile, the applicable APRCs are B/III/4000, D/II/4000, and B/II/2400. This means that following aircraft may land:

- Within Approach Categories A & B, Airplane Design Groups I(S), I, II, & III, down to 3/4 mile visibility.
- Within Approach Categories C & D, Airplane Design Groups I & II, down to 3/4 mile visibility.
- Within Approach Categories A & B, Airplane Design Groups I(S), I & II, down to 1/2 mile visibility.

The DPRC represents those aircraft that can take off from a runway while any aircraft are present on adjacent taxiways, under particular meteorological conditions with no special operational procedures. Table below allow a specific ADG to depart a runway based on a set runway to taxiway separation.

Departure Reference Code (DPRC)

Runway to Taxiway Separation (ft)

≥ **150**	≥ **225**	≥ **240**	≥ **300**	≥ **400**	≥ **500**
B/I(S)	B/I	B/II	B/III D/II	D/IV D/V [1]	D/VI [2]

Notes: (S) denotes small aircraft

Entries for Approach Category D also apply to Approach Category E. However, there are no Approach Category E aircraft currently in the civil fleet.

1. Example: With a runway to taxiway separation of 300 feet, the following airplanes may depart:

- Within Approach Categories A & B, Airplane Design Groups I(S), I, II, & III.
- Within Approach Categories C & D, Airplane Design Groups I & II.
- Thus, an airplane of Approach Category C, Airplane Design Group III requires a runway to taxiway separation of 400 feet for departure.

2. For unrestricted operations by ADG-VI airplanes, a runway to taxiway separation of 500 feet is required. However, ADG-VI airplanes may depart with aircraft on the parallel taxiway where the runway to taxiway separation is as little as 400 feet as long as **no ADG-VI aircraft** occupy the parallel taxiway beyond 1500 feet of the point of the start of takeoff roll.
When there is snow, ice or slush contamination on the runway, ADG-VI airplanes may depart with aircraft on the parallel taxiway where the runway to taxiway separation is as little as 400 feet as long as **no aircraft** occupy the parallel taxiway beyond 1500 feet of the point of the start of takeoff roll.

For reference, the Aircraft Design Group, (ADG) is determined by either the aircraft wingspan or tail height, whichever is most restrictive, as below.

Table 1-2. Airplane Design Group (ADG)

Group #	Tail Height (ft [m])	Wingspan (ft [m])
I	< 20′ (< 6 m)	< 49′ (< 15 m)
II	20′ - < 30′ (6 m - < 9 m)	49′ - < 79′ (15 m - < 24 m)
III	30′ - < 45′ (9 m - < 13.5 m)	79′ - < 118′ (24 m - < 36 m)
IV	45′ - < 60′ (13.5 m - < 18.5 m)	118′ - < 171′ (36 m - < 52 m)
V	60′ - < 66′ (18.5 m - < 20 m)	171′ - < 214′ (52 m - < 65 m)
VI	66′ - < 80′ (20 m - < 24.5 m)	214′ - < 262′ (65 m - < 80 m)

The APRC, ADG and DPRC tables above are not intended for pilot use. However, they do contain useful operational information identifying runway and taxiway capabilities in accommodating largest ADG movement with no special operational mitigation.

Recommendations: The AFD should clearly reference approach and departure codes applicable to the airport's movement areas where special operations are not needed. This information could be included as a separate section and listed by runway, similar to Runway Declared Distance Information.

For example, at Indianapolis Intl (IND):

APPROACH, DEPARTURE REFERENCE CODE PER APPLICABLE RUNWAY

RWY05L APRC D/VI/2400, DPRC D/VI, RWY05R APRC B/II/2400, DPRC B/III, D/II, RWY14 APRC D/V/2400, D/IV/1600, DPRC D/IV, D/V, RWY23L APRC B/III/2400, DPRC B/III, D/II, RWY23R APRC D/VI/2400, D/IV/1600, DPRC D/VI

Comments:

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Bob Bonanni, AAS-100, briefed the issue. Bob described Airport Reference Codes and how they are utilized. These codes reflect the proper aircraft design groups' utilization for existing runway to taxiway separations. The airport reference codes make up a new element of the operational procedures at an airport for the airport operator and ATC to utilize. The airport reference codes are not meant to be restrictive and are a tool to allow users to quickly assess runway suitability. Bob proposed that these codes appear in the AFD.

Khallil Kodsi, AAS-100, reviewed the operating parameters associated with the airport reference codes. The airport reference codes have been published and made available via Advisory Circular 150/5300-13A. The responsibility for the use of these codes falls upon airport management.

Lynette Jamison, AJR-B1, inquired as to how many airports would be impacted by the airport reference codes. Khallil responded that currently over 3,500 airports have received the codes and more are being added.

Discussion shifted to how pilots were expected to utilize the codes. Rich Boll, NBAA asked several operational questions from a pilot perspective. He inquired as to whom at an airport would be alerting aircraft that they cannot taxi or depart from an airport based on these codes. Are these codes really for the pilot? Why should they be published in the AFD?

Bob replied that the codes would provide reference information to the pilots.

Jolda Reed, AJV-W21, voiced that she believes that Airport Reference Codes would be an extremely useful tool for Terminal ATC, but probably of limited use for pilots.

The consensus of the ACF was that Airport Reference Codes would be of little use to pilots, would likely create user confusion if published in the AFDs and therefore should not be.

STATUS: CLOSED