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**Subject: ACC Review Comments - Advisory Circular 150/5300-13,
Airport Design**

Dear Mr. Marinelli:

On behalf of the Airport Consultants Council (ACC), I would like to thank you for the opportunity to provide input into the update process for FAA Advisory Circular *150/5300-13, Airport Design*. We are pleased to submit for your consideration the following general and specific ACC member comments.

1. General Comments

- Suggest a new document that consolidates all changes.
- Suggest development of an electronic document with hot links to actual pertinent sections of reference documents.
- Suggest that the entire updated document be electronically searchable.
- Suggest more detailed references to the actual subparagraphs of reference documents.
- Suggest definitions throughout be reviewed and updated as appropriate.
- Suggest review and update of seemingly obsolete references such as utility, general utility, etc.
- The document can currently be found in two different locations:

<http://www.faa.gov/arp/150acs.cfm#design>

http://www.airweb.faa.gov/Regulatory_and_Guidance_Library/rgAdvisoryCircular.nsf/MainFrame?OpenFrameSet

The related documents in some instances appear to print out differently. Additionally, Change 8 is not yet posted on the second website. It is suggested that a single location and document be maintained for public access on the FAA's website. This will reduce confusion and the potential for two different versions of the same document to be in circulation.

2. Design Aircraft

- Suggest that guidance be provided on how to select a design aircraft and possibly multiple design aircraft for given application depending on the aircraft dimensional and operational criteria. A single aircraft in a given design group may not adequately represent the other aircraft at the airport relative to all characteristics. These characteristics may include runway length requirements, wingspan, under carriage dimensions, turn radius, wheel tracking, gear configuration, weight, etc.

3. TERPS Issues

- Appears to be confusion on interrelationships of AC 150/5300-13, Part 77 and TERPS. Suggest that stronger references to TERPS be incorporated.
- Suggest consistent runway/taxiway centerline separation standards for Approach Category C/D Runways with Visibility minimums lower than 3/4 mile. The guidance in AC 150/5300-13 is not consistent with TERPs guidance, so while creating ALPs consistent with Airports Division, one may be unknowingly limiting the runway to nothing more than CAT I ILS. For example, at least one letter from an FAA analyst in Oklahoma City indicated that 747s may not use taxiways spaced less than 865 feet parallel to an arrival runway because they would penetrate the missed-approach surface. At least two TERPS Information Letters (TIL 04-030 and TIL-05) have been issued within the last couple of years affecting object clearances under runway approaches. At the very least, a notation should be made regarding the TERPs requirements for greater RW/TW CL Separation for CAT II and greater runways or expand the table and base it on RVR values and not statute miles of visibility.
- Suggest clarification of the minimum separation distance for a crossing taxiway from the approach threshold of a runway. Specifically, guidance on how far the taxiway must be from the approach and departure ends to provide minimum object clearances.

4. Chapter 1 – Regulatory Requirements and Definition of Terms

- Section 3 – Related/Referenced Reading Material – Suggest the list of ACs be updated to remove those ACs that are no longer in circulation.

5. Chapter 2 – Airport Geometry

- Section 210 - Building Restriction Line - Suggest that the 35' restriction may be excessive for some airports that typically have shorter buildings (e.g. many GA airports).
- Section 211 - RSA and OFA - Difference between these two areas is relatively small. Has there been any consideration to combine these?
- Section 212.a.2.c. FAA Studies of Objects and activities in the Vicinity of Airports - Suggest guidance for areas outside the RPZs (e.g., density recommendations, compatible land use, etc., under flight paths).

6. Chapter 3 – Runway Design

- Section 309 – Stopway Standards – Suggest clarification of the benefits of stopways and the relationship with declared distances and Runway Safety Area Studies.
- Table 3-3 – Runway Design Standards for Aircraft Approach Categories C&D – RSA criteria “length beyond runway end” addresses a wide range of aircraft and appears to be overly burdensome for some aircraft. For example, a C-II aircraft such as a Canadair Challenger has the same RSA criteria as Design Group D-V aircraft such as a Boeing 747. This appears to be overly burdensome for aircraft at the small end of the range or perhaps inadequate for aircraft at the high end of the range. Suggest that the requirements for business type aircraft be reviewed.

7. Chapter 4 – Taxiway and Taxilane Design

- Suggest that this chapter provide a cross reference to AC 150/5300-14 to help address the design of de-icing facilities. It is suggested that the geometric guidelines for de-icing pads should be developed based on AC150/5300-13 but have its own governing standards that also address the safety aspects when dealing with aircraft and mobile de-icing vehicles.

8. Chapter 5 – Surface Gradient and Line of Sight

- Section 502.d.3 - Suggest that taxiway vertical curve guidance be clarified to reflect whether taxiways must always use vertical curves or whether a grade break is allowed. Criteria currently provide for a maximum .4% allowed grade break on runways for A and B aircraft but no reference is made to a similar provision for taxiways.
- Section 502.e - Suggest the apron guidance be clarified to address maximum grade breaks and criteria for grading around an apron. Should it be treated the same as a taxiway?
- Section 503 - Line of Sight Standards - Suggest that these may be unnecessary at airports with 24-hour ATC.

9. Chapter 6 - NAVAID Critical Areas

- Suggest more detail be provided regarding differing area requirements by equipment type. Also, suggest information be updated to ensure consistency with FAA Orders.

10. Chapter 7 - Taxiway Bridges

- The construction of runway and taxiway bridges is becoming more prevalent as airports are seeking to maximize use of their existing real estate where it is not practical to modify existing ground transportation or rail infrastructure corridors. The existing chapter contained in the circular is vague and lacks definitive design criteria. Based on this, the following are suggested considerations for revising this chapter:
- Structural design of the bridges should be carried out in accordance with the AASHTO specification for bridges except that the load factors, load combinations, impacts, etc. and application of same should be addressed in this AC as it differs from those utilized for standard highway bridges.
- Different aircraft gear configurations apply to different aspects of the superstructure and substructure designs.
- Section on required width of bridge is confusing and ambiguous. It recommends a width but specifies “In unusual situations.....” that the bridge width can be reduced. There is no definition for what constitutes “unusual.” Suggest clarifying this reference.
- Section on deck design specifies that a layer of earth should be incorporated between the pavement and the deck. In many instances, this is impractical and cannot be achieved.
- The use of curbs for edge protection within the object free area on any bridge exceeds the vertical height restrictions as identified in Chapter 4, Article 403.
- De-icing of bridges in cold climates should be addressed.
- Life safety issues pertaining to road / rail tunnels should be addressed and cross referenced to the appropriate NFPA codes.
- Suggest more specific requirements regarding design criteria for Runway and Taxiway bridges and tunnels. Specifically, better guidance regarding the live load requirements including impact factors as well as for different load factors for runway, taxiway and safety areas.

11. Appendix 2 – Threshold Siting Requirements

- Suggest review and clarification to ensure consistency, particularly in the table, categories d through h.

12. Appendix 5 – Small Airport Buildings, Airplane Parking, and Tiedowns

- Suggest Clarification of an apparent discrepancy on spacing between T-hangars, with a taxiway between them, for Design Group I. Table 4-1 on pg. 36 states the Taxiway OFA width is 79’ while Figure A5-3 on pg. 121 shows the distance between T-hangars (TLOFA) to be a minimum of 75’. Also, the taxiway width on the table is shown as 25’, while the figure shows 20’.
- Suggest review of tie down criteria for Design Group I aircraft. The layout outlined in Figure A5-2 may be overkill for this design group. There are currently many aprons that function well with considerably less spacing.

13. Appendix 7 - ALP Comments

- Suggest more flexibility in sheet size and scale of the ALP drawing. For larger airports, the defined scales require that the ALP be broken into multiple sheets using match lines. A multiple sheet drawing is cumbersome and generally undesirable as a basic planning tool.
- ALP guidelines-checklists differ by region. Suggest consideration of a standardized checklist.
- Suggest an allowance for data to be included on the data sheet rather than cluttering up the ALP.
- Suggest allowing for the use of GIS topo mapping (if available) for the Part 77 airspace drawing.
- Suggest that Exhibit A be updated continuously and suggest removing it as one of the drawings in the ALP set. Possibly replace with a future land acquisition sheet in the plans and maintain Exhibit A separately.

- Suggest including guidelines for the preparation of electronic ALPs. Will standards be developed, e.g., line weights, symbols, data layers?

14. Appendix 12&13

- Suggest an update to reflect the newer general aviation and commercial aircraft, including those aircraft that are currently in service.
- Ensure that the aircraft characteristic database reflects the correct criteria. For example, the database incorrectly refers to the Boeing 777 as a D-IV, but AC150/5300-13 contains the correct classification as a D-V.
- Suggest considering consolidation into separate document.

15. Appendix 14 – Declared Distances

- Suggest that the discussion on Declared Distances be made clearer with better graphics to support the Declared Distance concept. There also needs to be some implementation guidance as to when the application of declared distances is considered appropriate at GA/non-towered locations. It seems that when Declared Distance is proposed to add capability or to economically solve RSA/ROFA problems, some ADOs report that "they do not want to support Declared Distances at GA airports."

16. Transfer of Electronic Data

- Suggest that this section be updated and that references to programs other than AutoCAD be included (GIS software, etc.).

17. Airport Perimeter Issues

- Suggest that guidance on security perimeter requirements be included. Specifically, guidance on areas under the flight paths and proximity/location of airport parks, etc.

18. Airport Design Software

- Suggest that an update of the runway length requirement software to include discrete aircraft analysis or that the FAA give consideration to validating, endorsing or approving software to accomplish this task.

The ACC members who contributed the time to consolidate and vet these comments to ensure that they accurately reflect the consultant community's views are as follows: ACC Planning Committee Chair and Vice Chair, **Jill Tiedt** with **PB Aviation**, and **Mike Arnold** with **Environmental Science Associates**, respectively; and ACC Engineering Committee Chair **Monty Wade** with **Applied Pavement Technology**.

On behalf of the ACC, I again thank you for allowing us to provide input into the update process for this very important document. We look forward to any future opportunities to provide additional input as this document proceeds. If you have any questions regarding our comments, please do not hesitate to call me at (703) 683-5900.

Sincerely,



Anthony N. Mavrogiannis
Vice President
Airport Consultants Council