

**AERONAUTICAL CHARTING FORUM
Instrument Procedures Group
Meeting 09-01 - April 29-30, 2009**

RECOMMENDATION DOCUMENT

FAA Control # 09-01-213

Subject: Guidance & Charting for TERPS Chg 21 Circling Approaches

Background/Discussion:

With the pending release of TERPS change 21 affecting circling approach area dimensions (circling approach protected airspace), NBAA would like to ensure that operational guidance and charting information will be sufficient to allow pilots to thoroughly understand the change and be able to safely apply the revised circling protected airspace dimensions when conducting a circle-to-land maneuver. While the expanded circling approach areas provide much needed improvements with respect to obstacle protection, this was but only one of several deficiencies associated with the previous TERPS circling approach area (pre-TERPS-21) criteria.

Circling approaches are one of the most challenging flight maneuvers conducted in the National Airspace System, especially for pilots of CAT C and CAT D turbine-powered, transport category airplanes. These maneuvers are conducted at low altitude, day and night, and often with precipitation present affecting visibility, depth perception, and the ability to adequately assess the descent profile to the landing runway. Most often, circling approaches are conducted to runways without the benefit of electronic navigation aids to support the descent from the CMDA to the runway.

For this reason alone, many 14 CFR 121 air carriers choose not to train on circling approaches below the OpsSpec standard circling minimums of 1000-3 and further prohibit circling approaches at night. Unfortunately for business/corporate airplane operators, the circling approach often provides the only non-SAAAR IFR approach option available at many runways, e.g., Atlanta-Peachtree DeKalb runway 2L.

Today, it is recognized that the stabilized approach concept is the key to a safe, successful landing of a turbine-powered, transport category airplane, especially when a contaminated runway is present. The failure to stabilize the approach and effect a touchdown within the touchdown zone (first 3,000 ft) is often cited as a contributing factor in runway overrun landing accidents resulting from a circling approach. At a minimum, a CAT C or CAT D turbine-powered airplane should be wings level on a 3 degree - 318'/NM descent path not less than 1 NM from the touchdown point (1,000 ft beyond runway threshold). For the purpose of this ACF-IPG discussion, this point will be referred to as the "in-slot" position.

Fig 1 illustrates a nominal circle-to-land approach from a typical CAT C HAA of about 600 ft. In order to arrive at "in-slot" position on the landing runway, the turn radius resulting from the 140 KIAS CAT C speed limit takes the aircraft nearly to the edge of, but still within the CAT C circling protected airspace. The descent from MDA may begin approximately midway through the turn from base to final so as to arrive at the "in slot" position at the correct height. Even with an HAA approaching 1,200 ft, a descent beginning abeam the touchdown point will allow a normal stabilized descent to arrive at "in-slot" position at the correct height above the runway.

However, when the HAA exceeds 1,200 ft, the ability to conduct a stabilized approach becomes problematic for the pilot. When the HAA exceeds 1,200 ft, the descent must be commenced earlier in the circling maneuver, which is often impractical based on the aircraft's position relative to the landing runway. The only other option remaining to the pilot is to use a higher than normal descent rates to complete the descent. To remain within the pre-TERPS 21 CAT C circling protected airspace when the HAA exceeds 1500 ft, a descent gradient in excess of 400'/NM (1000 FPM) is necessary when descending from the abeam touchdown position so as to arrive at the "in-slot" position at the correct height. While the use of CAT D minimums, when

available, allow for slightly more maneuvering room (0.6 NM), the amount is insufficient to provide the necessary maneuvering airspace to manage a stabilized descent as the HAA increases above 1,500 ft.

Approach-to-landing descent rates in excess of 1,000 FPM are considered undesirable for turbine-powered airplanes. They require a high degree of pilot skill to safely manage. Failure to adequately judge the height/lateral position from the touchdown aim point can lead to excessive altitude upon completing the turn to final. This often results in a touchdown beyond the touchdown zone increasing the likelihood of a runway overshoot accident. Visual illusions caused by precipitation on the windscreen increase the likelihood of this occurring.

Misjudging an excessively high descent rate can also lead an aircraft to arriving too low upon completion of the turn to final. High descent rates often require excessively low thrust settings for airspeed control resulting in significant delay in attaining necessary thrust to arrest the descent following thrust application. The end result may encompass dangerously slow airspeeds and high drag conditions that result in hard landings and the potential of a premature touchdown, possibility before the approach end of runway.

The TERPS 21 change to the circling protected airspace affords much greater obstacle protection. However, it also affords the pilot the opportunity to use the extra protected airspace to mitigate the need to conduct a high descent rate, unstabilized approach that was often necessary as a result of the previous criteria for the Circling Approach Radius (CAR). Under TERPS 21, a sea level airport with a 1,500 ft HAA will have CAT C CAR of 2.86 NM, a 1.16 NM (68.5%) increase over pre-TERPS 21 CAR for CAT C. This extra protected airspace can be used by the pilot to maneuver the airplane instead of being forced to use high descent rates which are often necessary for high-HAA circling approaches.

To see how a pilot might use the new 2.86 NM CAR provided by TERPS 21, we can use the example of a downwind-base-to final circle-to-land maneuver. A 318'/NM (3 degree) descent from 1,500 ft HAT requires 4.7 NM to complete. At 140 KTAS, the no-wind turn from base leg to final covers a distance of 1.88 NM. This leaves an additional 2.82 NM to be evenly divided between the downwind-to-base turn leg and the final approach. If the descent is commenced abeam the touchdown point, 1.4 NM is required before the base turn is initiated. The turn will take the aircraft out an additional 0.6 NM (3732 ft) resulting in a roll-out on final 1.4 NM from the runway at approximately 450 ft above the runway. In a no-wind condition, the flight track will take the airplane approximately 2.1 NM (12238 ft) from the runway.

In this example, the descent is stabilized on the nominal 3 degree descent path. A further benefit resulting from this profile is that the pilot will be able to reference any available visual landing aid (VASI, PAPI, etc) to refine the descent path during the descent. This is opposed to the pilot having to managing an excessive high descent rate as he/she attempts to "catch" the visual descent path before turning final as is the case with today's pre-TERPS 21 criteria restrictions.

NBAA strongly believes that pilots should be able to use the circling protected airspace to the extent practicable to manage a stabilized approach along a nominal 3-degree descent path. In order to execute this nominal descent, pilots must have knowledge of the extent of protected airspace available.

Previous information on circling protected airspace was contained in AIM 5-4-20 (b) (1). While still applicable to per-TERPS 21 circling approaches, this information is inadequate for TERPS 21 and later approaches. It is also clear that the variable nature of the CAR resulting from the TERPS 21 criteria make any discussion of the new circling approach areas in the AIM limited to description of the elements, i.e. airport elevation, HAA, TAS, etc. that are used to derive the new TERPS 21 CARs and possibly a few example CAR illustrations. Specific CAR radius distances could not be included in the AIM due to the many variations which may result from differing combinations of airport elevations and HAAs.

Since a pilot must possess information on the circling protected airspace afforded at the published CMDA, and the CARs defining the protected airspace will be variable with each procedure and approach category, the only means to inform the pilot of the protected airspace radius is either through use of a charting notation placed on the chart or by a quick reference table in the TPP book.

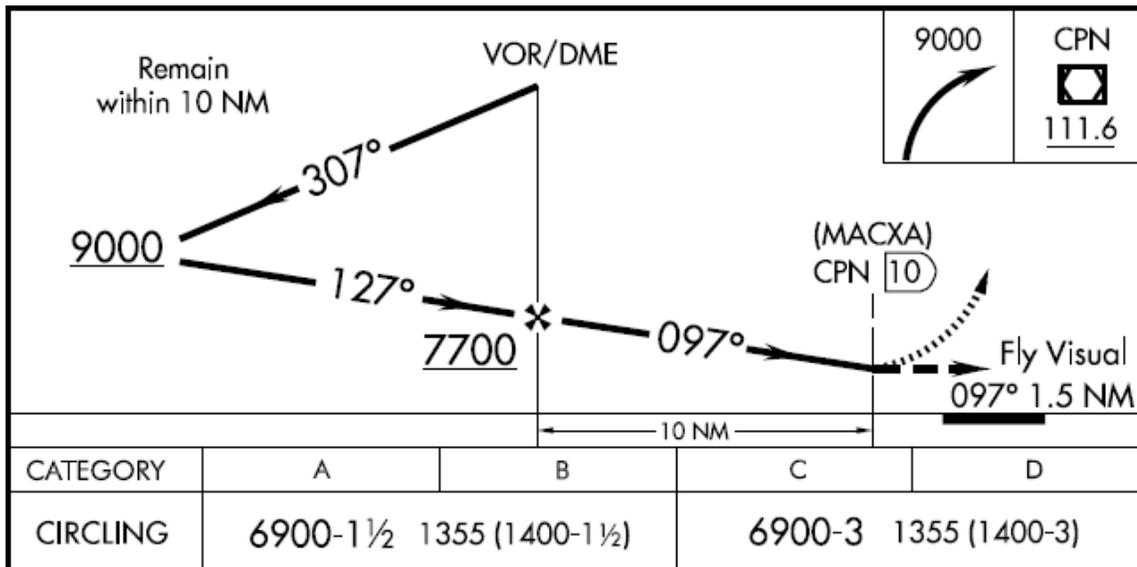
Recommendations:

NBAA request that AIM 5-4-20 (b) be revised to describe the changes to circling approach area protected airspace afforded at the published CMDA resulting from TERPS change 21 while retaining until an appropriate time the previous discussion on circling protected airspace for procedures developed to pre-TERPS change 21 criteria. Additional explanatory material and guidance on the revised circling criteria should be provided in the Instrument Procedures Handbook at the next revision.

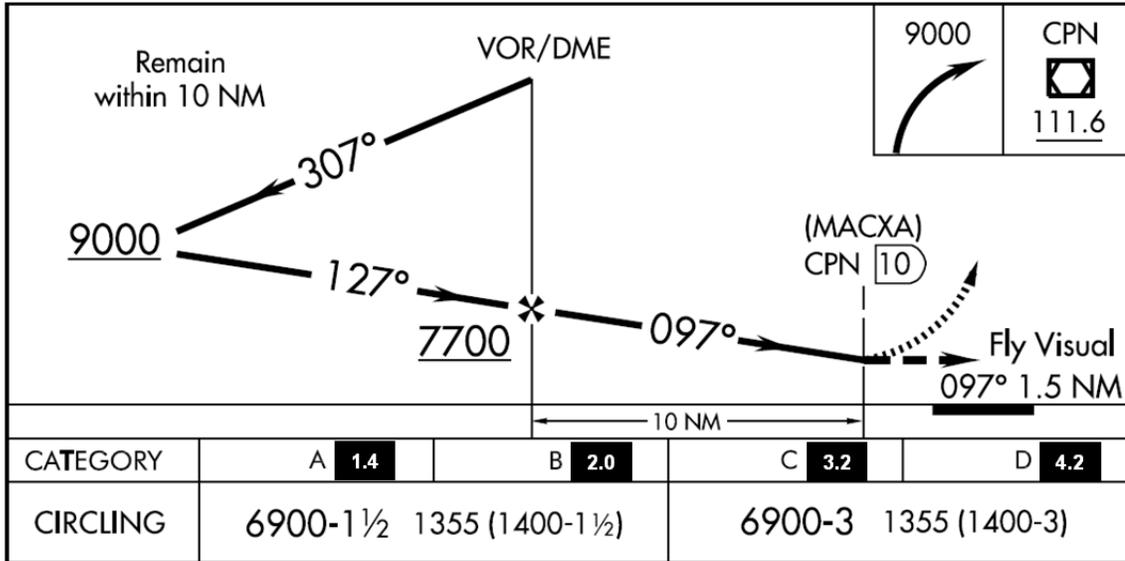
NBAA request that NACO evaluate options for informing the pilot of the circling approach area (CAR radius defining the circling protected airspace) afforded at the published CMDA based on airport elevation and published HAA.

One possible option is to add an ICON that identifies the extent of the circling protected airspace afforded at the CMDA. This ICON would be placed in the profile view, next to the Approach Category letter and would indicate the CAR radius used to define the protected airspace. An example of the use of this ICON is illustrated on the examples below for the Butte/Bert Mooney Airport, Butte MT VOR or GPS-B approach:

Current procedure profile view:



Proposed revised profile view charting the circling approach radiuses:



(note: the HAA for each category was not re-computed, only the protected airspace CAR's were computed based on the existing published HAA for each category)

The icon next to each approach category depicts the TERPS 21 CAR that defined the protected circling airspace. This provides the pilot with the information necessary pre-plan the circling maneuver so as to remain within protected airspace and locate a descent point that best results in a normal, stabilized approach. The type and nature of the ICON is left to the discretion of NACO and the commercial charting agencies.

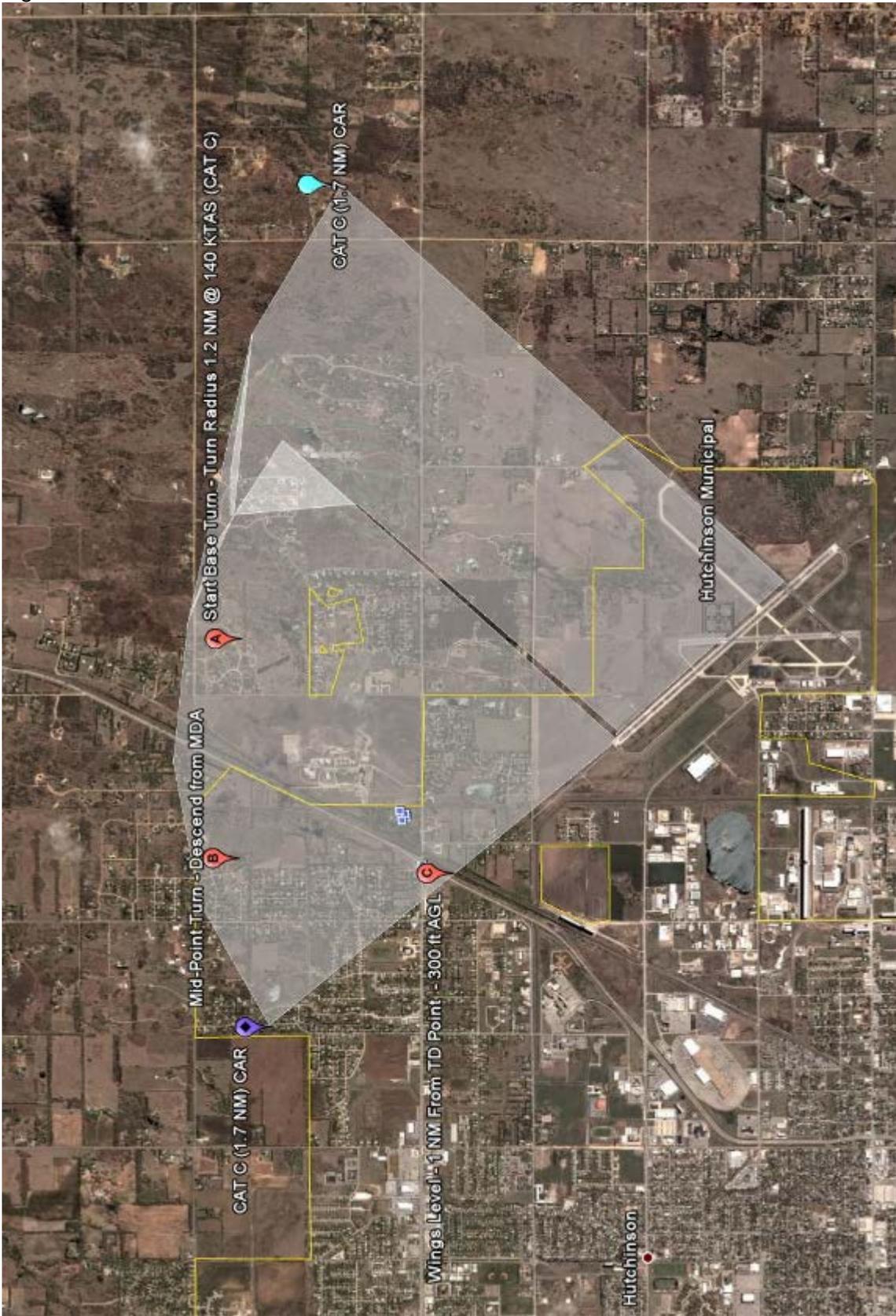
In place of charting an ICON, another option is to provide a table cross referencing CAR radius by Approach Category, airport elevation, and HAA for use by the pilot during pre-approach planning. This table would be located in the TPP front matter section. Placement of a suitable ICON on the approach plate will be required to identify those procedures developed to the TERPS 21 and later.

Comments: This recommendation affects

- Aeronautical Information Manual, AIM 5-4-20.
- Instrument Procedures Handbook.
- US Terminal Procedures Publication and associated charting specification.
- FAA 8260 Series Form (publication of CAR used to arrive at the published CMDA)
- Order 8260.19, Flight Procedures and Airspace

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Fig 1



MEETING 09-01: The pending release of TERPS Change 21 will affect circling approach area dimensions (circling approach protected airspace). Mr. Richard Boll, NBAA, would like to ensure that operational guidance and charting information will be sufficient to allow pilots to thoroughly understand the change and be able to safely apply the revised circling protected airspace dimensions when conducting a circle-to-land maneuver. While the expanded circling approach areas provide much needed improvements with respect to obstacle protection, this was but only one of several deficiencies associated with the previous TERPS circling approach area (pre-TERPS-21) criteria.

NBAA strongly believes that pilots should be able to use the circling protected airspace to the greatest extent practicable to manage a stabilized approach along a nominal 3-degree descent path. In order to execute this nominal descent, pilots must have knowledge of the extent of protected airspace available.

NBAA requested that NACO evaluate options for informing the pilot of the circling approach area (CAR) radius defining the circling protected airspace afforded at the published CMDA based on airport elevation and published Height Above Airport (HAA). More accidents occur during non-standard descents. High altitude airports present even more challenges.

NBAA recommended that the AIM be revised to describe changes to circling protected areas based on TERPS Change 21. NBAA also recommended that, for procedures developed in accordance with TERPS Change 21 circling criteria, NACO evaluate options for informing pilots when the new circling approach protected areas apply. One possible option is to add an icon in the minimums band of the chart, adjacent to the aircraft categories, indicating the new circling area radius used to define the protected airspace applicable to each particular aircraft category.

An alternative option could be to create a cross-reference table that correlates aircraft categories to new circling area radii. This table could be published in the front of the Terminal Procedures Publication (TPP).

Mr. Steve Surer, ALPA, supports NBAA's recommendation to depict the Circling Area Radius (CAR) values on the chart. He pointed out that the depiction of the CAR provides pilots with a means to directly compare the circling area radius distance to the applicable minimum visibility for the same aircraft category.

Lido supports NBAA's charting recommendation also, especially in consideration of non-US operators who are more familiar with ICAO circling areas (radii), which are larger than the FAA's current (pre-TERPS Change 21) circling areas.

Major James Taylor, USAF, applauded the idea and also supported the charting proposal.

Mr. Tom Schneider, FAA/AFS-420, commented that guidance would be needed to provide the procedure designer for determining the values. He also pointed out that calculation of the CAR is complex and can vary (expand) depending on the airport elevation. The higher the airport elevation/HAA is, the greater the CAR is.

Mr. Ted Thompson, Jeppesen, stated that they would like to see the FAA present the subject to the ICAO IFPP in order to address the subject on an international level.

Mr. Schneider commented that it will take years before all 16,000 U.S. IAPs are evaluated for TERPS Change 21.

Mr. Boll responded that the use of the CAR icon would be a useful way, visually, for pilots to know which procedures have the "old" smaller circling areas (w/o CAR icon) and those which do have larger areas (as required by TERPS Change 21).

Regarding NBAA's alternative recommendation, if a reference table was created, some other kind of icon on the approach chart could indicate that new TERPS Change 21 criteria have been applied, and also provide a cross-reference to the table.

Pilots unanimously preferred to have the CAR values shown on the IAP chart.

ACTION: Mr. Richard Boll will work with Mr. Brad Rush or Mr. Tom Schneider to see what tables might look like as an alternative method. The results will be presented at the next ACF.

MEETING 09-02: At the 09-01ACF in April Mr. Richard Boll, NBAA, agreed to provide specimen tables that correlate aircraft categories to new circling radii under new TERPS Change 21 criteria. These tables could perhaps be published in the front of the TPPs. Mr. John Moore, FAA/AeroNav Services, responded that "these tables did not belong in the front of the TPPs since this was not a safety of flight issue" and regarded it as more of a training issue. Mr. James Spencer, NAVFIG, agreed. Mr. Brad Rush, FAA/AeroNav Services, commented that "circling tables haven't been published in the TPPs for nearly forty years and the TPPs were not the place for it."

Representatives from ALPA, NBAA and Lido prefer the alternate idea of placing the actual CAR values on the IAP charts. Therefore, AeroNav Services agreed to create a prototype to reflect the idea of putting the CAR value for each category of aircraft in the minimums table. If neighboring categories of aircraft share the same CAR value, the categories could be combined. (i.e. Cat A & B have same circling MDA-Vis, but chart only the Cat B circling radius)

It was suggested that the FAA's General Counsel be involved before writing any implementation policy. Another suggestion was made that perhaps the issue may need to go through the FAA's Safety Management System (SMS) process, where risks would be assessed and mitigation provided as necessary.

Mr. Tom Schneider, FAA/AFS-420, said the CAR radii should be documented on the 8260-3 (dash 3). An implementation meeting between AFS, TJ Nichols and Harry Hodges was proposed and, once the charting aspect was sorted out, AIM guidance written.

ACTION: Mr. Brad Rush, FAA/AeroNav Services, will report at the next ACF.

MEETING 10-01: Mr. Brad Rush reported that Change 21 will be implemented in the fall without the circling criteria. Brad stated that the Director, Aviation Systems Standards (AVN), sent a memorandum to AFS-400 advising that AVN would not be implementing the new circling criteria stating that it would have an adverse impact on many airports and that a cost-benefit analysis should be conducted. Brad stated that they were still awaiting a response to the letter. Tom Schneider replied that he believed a response had been developed and forwarded to AFS-400 for signature and took an IOU to follow up the response. Tom added that the new circling criteria had been vetted through the ACG-IPG and TERPS Change 21 was formally coordinated prior to signature with no non-concurrences to the new circling criteria.

Mr. Tom Schneider, FAA/AFS-420 would like to see prototypes based on NBAA's proposal from ACF 09-01 to reflect the idea of putting CAR value for each category of aircraft in the minimums table and if neighboring categories of aircraft share the same CAR value, the categories could be combined.

It was decided that AFS-420 would research the response and AFS-400 would address the issue item and that Terminal would provide prototypes. Flight Standards (AFS-420) will provide a report on objections and concerns raised about the new circling criteria.

Note: Post meeting, Mr. Schneider advised that AFS-400 replied to the AVN letter on February 19, 2010 indicating that the TERPS Change 21 criteria remains unchanged and that AFS is willing to discuss a phased implementation.

ACTION: Mr. Tom Schneider will research the AFS-400 response to the AVN memorandum and report back at the next ACF.

ACTION: AeroNav Services, Terminal, to provide prototypes for next ACF.

MEETING 10-02: Ms. Valerie Watson, FAA/AJV-3B, briefed the circling charting option prototypes. **See Attached # 7: ACF 10-02 Circling Radii Charting Options.** Initial consensus was option # 5.

Mr. Bill Hammett, FAA, AFS-420 (ISI), noted that the circling formulae are based on two criteria (Airport elevation and HAA) not just airport elevation and pointed out that, when applying the TERPS formulae, the circling approach radii (CAR) are not always constant for an aircraft category. Mr. Hammett asked what criteria will be used and who will determine it. Mr. Brad Rush, FAA/AJV-3B commented that AVN will determine and provide only one set of CAR values for each category and they will be charted based on the single set of radii listed on the 8260.

Mr. John Moore, FAA/AJV-3B, was concerned about placing the CAR within the line of minima considering that there is no relationship between visibility and CAR and that visibility is measured in SM while CAR is measured in NM. Mr. Rush said the visibility relationship has not been addressed but there may be a change in criteria to tie visibility to CAR.

After further discussion it was decided to develop 2 more prototypes for review on day two (Option 6 and 7 in the attachment).

The 2 additional prototypes were discussed with similar results as the previous day. Mr. Boll, NBAA, who was the proponent of the issue, then suggested that a table similar to the Climb/Descent Table in the TPP would be a good alternative. **See Attachment # 8: TPP CAR Chart Rev 1 Oct 6 2009.** However, if a separate CAR chart is used, it will be necessary to indicate to the pilot whether or not the new CAR values have been designated for a particular runway.

Discussions continued and there was no consensus among the various groups. Mr. Boll strongly defended the need for CARs for Corporate and Business operators. He was agreeable to CARs being provided either on the chart or in a reference table. The representative from AOPA did not feel the information was beneficial or necessary for most General Aviation pilots. Airline pilots in the group commented that air carriers rarely circle to land, and if they do, they're required to abide by a 3 mile visibility according to Ops Specs. Representatives of the USAF stated that their crews routinely circle and would like to see CARs on the charts. There was a lot of debate about the pros and cons and a general consensus was not reached.

ACTION: Mr. Roy Maxwell, Delta Airlines, has agreed to develop a table for CAR and forward to Mr. Tom Kramer, AOPA, and Mr. Richard Boll, NBAA.

ACTION: Mr. Kramer will take the CAR options (Newly designed table from Mr. Maxwell and the charting option) to their constituents for their feedback and evaluation. Mr. Kramer will report back his findings at the next ACF.

ACTION: Mr. Boll will take the CAR options and vet them through the NBAA Working Group and various PART 142 training schools and report back his findings at the next ACF.

MEETING 11-01: Mr. Roy Maxwell, Delta Air Lines, was unable to attend and Mr. Richard Boll, NBAA, briefed on his behalf the efforts to refine the reference table that had been coordinated since the last ACF. He presented a new reference table to the group for review and comment. Mr. Boll noted that the table was sent to the USAF Instrument School with overall feed back from the school being supportive.

Mr. Boll stated that the wording of the paragraph that accompanies the table was still being worked out. Placement of the proposed table and supportive paragraph was discussed with no clear conclusion reached.

Mr. Tom Schneider, FAA/AFS-420, noted that Flight Standards would want to vet the accuracy of the table prior to its public release.

Mr. Lev Prichard, APA-American Airlines, asked if aircraft speeds could be added to the bottom of the table. Mr. Boll said that he would coordinate the update of the table with the inclusion of air speeds.

The discussion briefly touched upon what kind of indicator (chart icon) that might be considered to indicate the application of the new table to a particular approach. Though the discussion centered on refinement and publication of the reference table in the front matter of the TPPs, it was reiterated that depicting the CAR values on the charts themselves was still a viable option. It was decided to hold off any in depth discussions until a later date.

ACTION: Mr. Roy Maxwell, Delta Air Lines and Mr. Richard Boll, NBAA are to coordinate on the wording of the paragraph associated with the table.

ACTION: Tom Schneider, FAA/ AFS-420, to coordinate the validation of the table within AFS-420.

ACTION: Mr. Boll, NBAA, to coordinate the adding of airspeeds to the table.

MEETING 11-02: Mr. John Moore, FAA/AJV-3B, reviewed the action items from last ACF. Mr. Rich Boll, NBAA, informed the audience that Mr. TJ Nichols, FAA, AFS-420, had validated the values submitted by Mr. Boll. Some changes were made by Mr. Nichols in rounding some of the figures to be more conservative. Mock-ups were generated based on the new values.

Comments were received, and subsequently read to the Group by Mr. Moore from Mr. Lev Prichard, APA, who was not able to attend.

Mr. Prichard's email stated, in part:

It is the Allied Pilots Association position that placing this improved circling criteria on the approach plate improves safety in the event a circle approach becomes necessary. I have

polled several AA pilots, and it appears that the preferred method for charting would be Option 5 on page 6 of the ACF 10-02 meeting briefing (Circling Area Radii Charting Options 09-01-213). After a brief statement that TERPS circling criteria has changed, all pilots questioned seem to immediately recognize this format without confusion.

Mr. Boll went over the three options describing where the new circling information could be provided: Option 1 – put the new values in a table in the front of the TPP; Option 2 – put the new values in a table in the AIM; Option 3 – do not do anything.

Mr. Brad Rush, FAA/AJV-3B, agreed with inserting a table in the front matter of the TPP.

[Seven different approach plate concepts](#) were presented and were the basis for a broad discussion within the Group. The discussion focused on where the new table should appear and on the use/placement of the negative C.

Mr. John Moore, FAA/AJV-3B, established a consensus in the group that the new circling table would be put in the front matter of the TPP with a negative C on the approach chart. This approach would allow for easy removal of the negative C and the table once TERPs Change 21 is fully implemented.

Ms. Valerie Watson, FAA/AJV-3B, inquired as to whether the old circling table should be published along with the new circling table to aid pilots in being able to discern the protected airspace for circling. The topic was discussed within the Group, but no decision was made.

The question was raised as to how the FAA would indicate on the source document that the new circling criteria have been applied. Mr. Tom Schneider, FAA/AFS-420, stated that AFS-420 would need to modify the 8260 and associated FAA Orders. Ms. Watson recommended that a statement “Change 21 Circling Criteria Applied” be added to the Additional Flight Data section of the 8260 form, prompting cartographers to add the negative C icon to the chart. Because ultimately all affected procedures will have had the criteria applied, it will be simpler to remove the negative C icons if a “CHART” command statement regarding application of the icon is NOT included on the source document.

ACTION: Mr. Rich Boll, NBAA to provide revised old and new circling table to Valerie Watson, FAA/AJV-3B.

ACTION: Ms. Valerie Watson, FAA/AJV-3B, to coordinate with IACC and Terminal on the placement of the negative C on the chart and the table in the front matter of the TPPs.

ACTION: Mr. Tom Schneider, FAA/AFS-420, to create policy guidance in Order 8260.19 to indicate when Change 21 circling criteria has been applied and dictate publication of the negative C.

MEETING 12-01: Ms. Valerie Watson, FAA/AJV-3B, briefed attendees on the progress made since the last ACF. Ms. Watson stated that an RD, based on former ACF recommendations, has been drafted and formally submitted to the IACC for approval. She thanked Mr. Rich Boll, NBAA and Mr. Roy Maxwell, Delta, for their help finalizing the TPP front matter guidance & tables. At present, the IACC is reviewing the RD. [Depictions were shown](#) illustrating the changes to be made within the TPPs, both in the explanatory front matter and on the circling lines of minima.

Mr. Tom Schneider, FAA/AFS-420, inquired as to whether any changes had been made to the RD since it was submitted to the IACC. Ms. Watson replied that no further changes had been made.

Mr. Schneider added that changes have already been made to the 8260.19 with regards to the documentation of procedures to which the new circling criteria has been applied. (Additional Flight Data box of 8260 source document will contain a note "CHART CIRCLING ICON".)

A question was raised within the audience as to when procedure implementation of the Change 21 criteria is expected.

Mr. Brad Rush, FAA/AJV-3B, commented that Change 21 Circling implementation is anticipated to begin by the end of September 2012. Users should begin to see the changes appear on the charts in the early part of CY2013.

Mr. Schneider inquired as to whether guidance material was ready to appear in the AIM concurrent with the publication of the first procedures.

Mr. Bruce McGray, FAA/AFS-410, replied that his office would follow up on AIM guidance.

Mr. Rich Dunham, FAA/AFS-420, commented that the Instrument Procedures Handbook (IPH) was in draft at present, but that the upcoming version would contain Change 21 Circling information.

STATUS: OPEN

ACTION: Ms. Valerie Watson, FAA/AJV-3B, to provide an update on IACC approval of the charting proposal at next ACF. (She will also provide a final copy of the approved RD to Jeppesen & Lido.)

ACTION: Mr. Bruce McGray, FAA/AFS-410, to follow up on AIM guidance and report back at next ACF.

ACTION: Mr. Brad Rush, FAA/AJV-3B, to provide an update on implementation progress at next ACF.

MEETING 12-02: Valerie Watson, FAA/AJV-3B, summarized the subject matter and history of the topic. She briefed that front matter explanatory text & tables that address the new criteria will be included in the FAA TPPs on the 15 Nov effective date cycle. A [Charting Notice](#) will also be posted on the AeroNav Products website on the same date. She further briefed that procedures with the new circling criteria applied will not appear published until the Jan or Mar 2013 chart cycle.

Brad Rush, FAA/AJV-3B, added that the application of the new criteria will be mandatory for all procedures amended after Jun 2013 and when applied to a single procedure at an airport, will be applied to all procedures at that location.

The only item left outstanding pertains to the revisions necessary to the AIM. Bruce McGray, FAA/AFS-410, has been working the AIM guidance, but has not yet finalized or submitted it for publication. It was emphasized that the AIM guidance should be in place prior to implementation to avoid confusion. Bruce agreed to do so as soon as possible.

STATUS: OPEN

ACTION: Bruce McGray, FAA/AFS-410, to expedite the revisions to the AIM to reflect both the old and the new circling criteria and explain the negative C icon on the circling line of minima. Bruce to report back at next ACF.