

AERONAUTICAL CHARTING MEETING
Charting Group
Meeting 21-02 – October 26 - 28, 2021

RECOMMENDATION DOCUMENT

FAA Control #21-02-362

Subject: Circling Restrictions in Instrument Approach Procedures

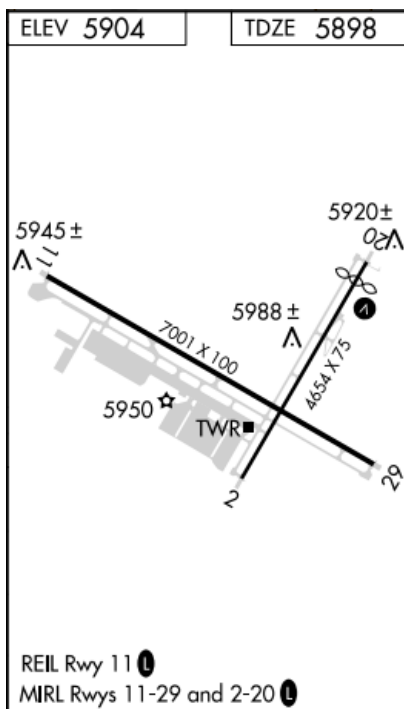
Background/Discussion:

FAA currently places circling restrictions in the briefing strip notes section of the instrument approach procedure (IAP) chart. When the airport has a single runway, these circling restrictions are easy to interpret. However, they are more difficult to interpret when multiple runways are involved.

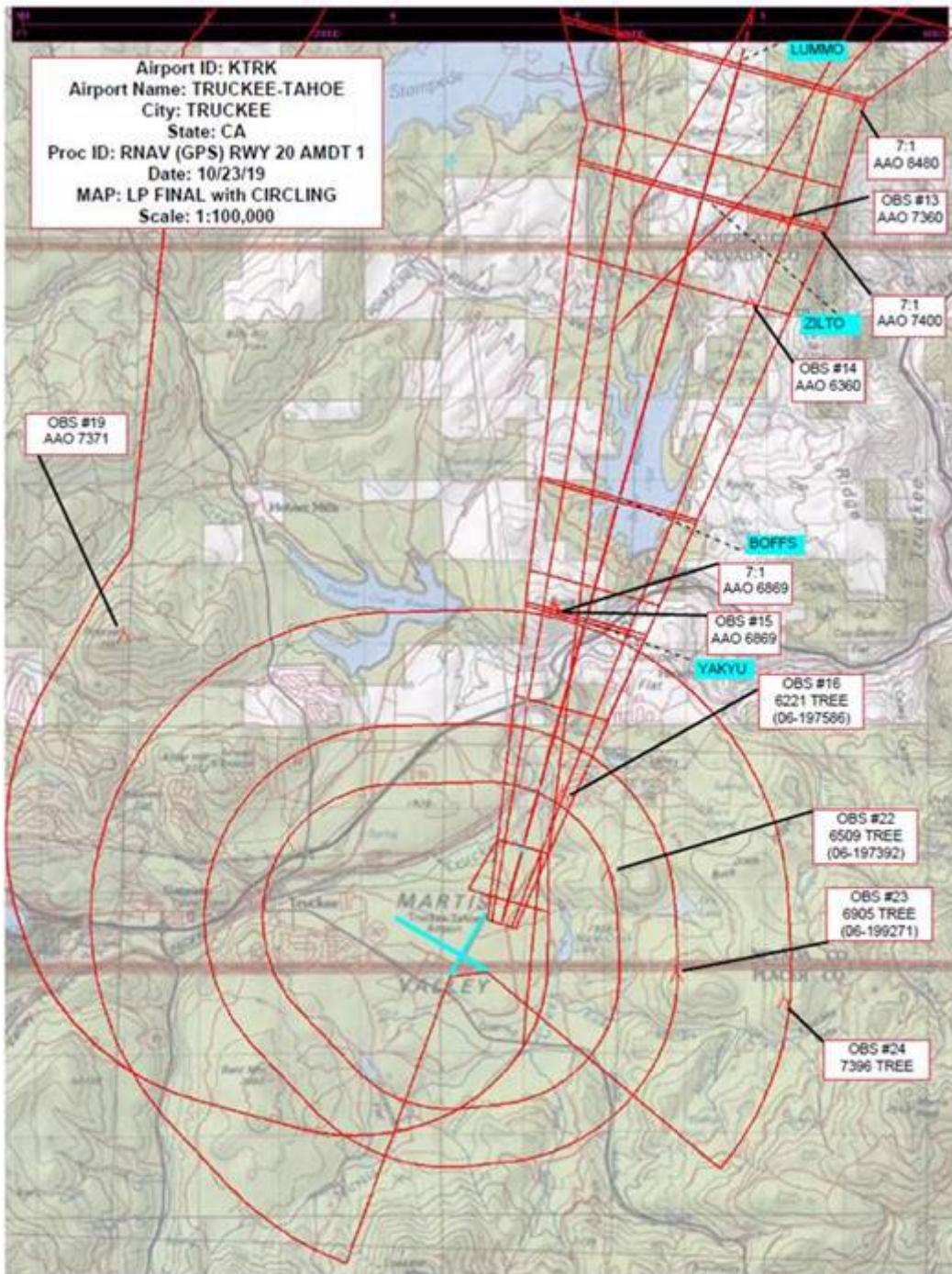
Below is an example of one airport with circling restrictions:

▼	Circling to Rwy 2, 11, 29 NA at night. Circling NA for Cat C south of Rwy 29 and east of Rwy 2. Rwy 20 helicopter visibility reduction below $\frac{3}{4}$ SM NA. When local altimeter setting not received, procedure NA.
▲	
❄ -18°C	

Does the restriction prohibit circling anywhere south of runway 29 or east of runway 2, or just in the sector between runway 29 and runway 2?





The TERPS maps answer the question. Circling is restricted in the pie wedge southeast between runways 2 and 29:

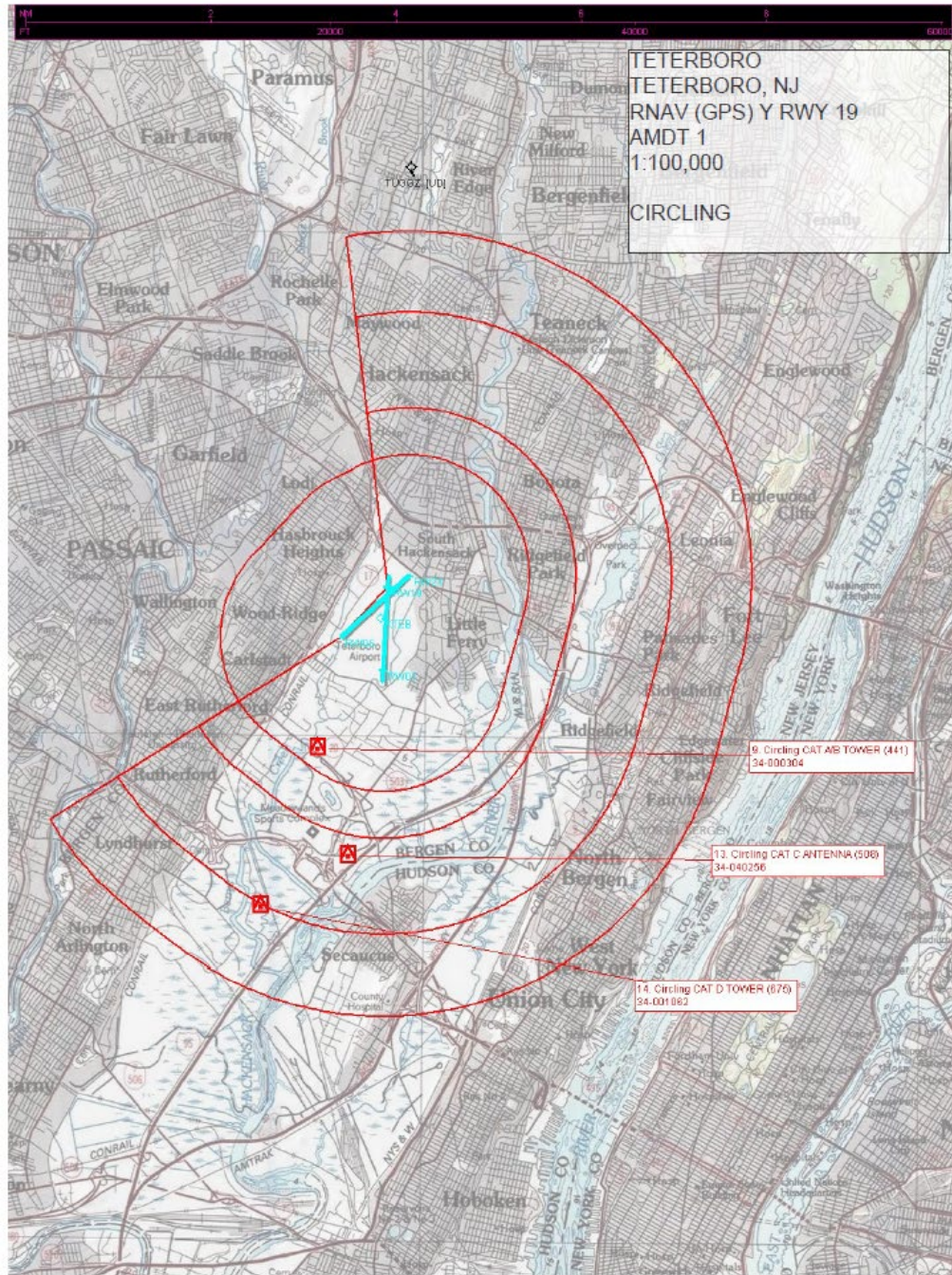


Here we see another example where the wording of the circling restriction note is a little clearer, describing that circling is restricted northwest between runways 6 and 19:

RNP APCH.

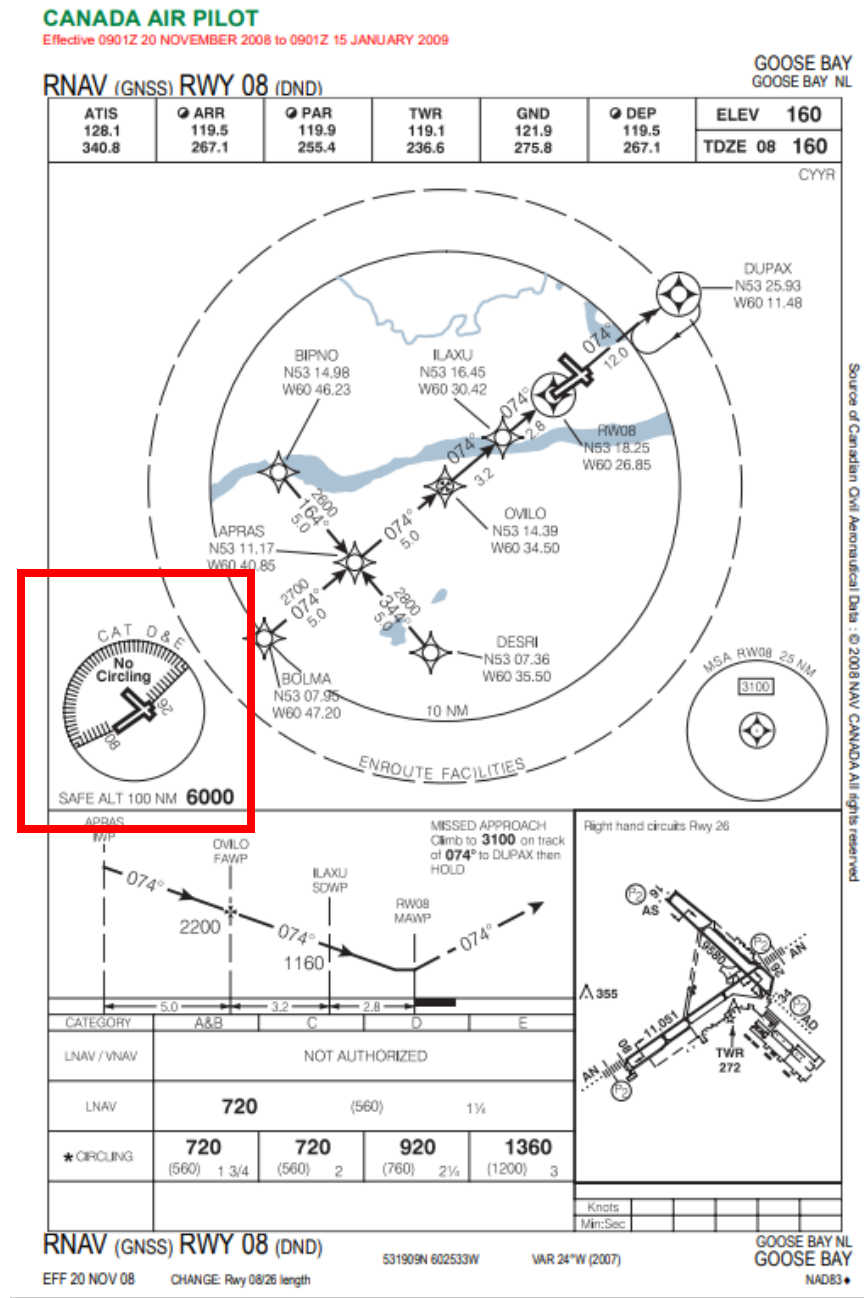
 Circling NA for Cats B, C, and D NW of Rwy 6 and 19. When Circling to Rwy 24 at night, operational VGSI required, remain on or above VGSI glidepath until threshold.





Even when the circling restrictions are well written with respect to the depiction on the TERPS maps, as in the second example, using a note to describe circling restrictions is subject to individual interpretation with the writer of the 8260.19 Order, the Flight Procedures specialist developing the procedure, the charting agency, and ultimately the pilot. NBAA believes that there is a better way.

Canada and other States who publish aeronautical charts graphically depict circling restricted airspace on the IAP chart. Below is an example from Canada:



Graphically depicting the “No Circling” airspace is easy for pilots to interpret, brief, and quickly reference during the approach. It also eliminates variations in the description of circling restricted areas and/or differences in interpretation of the written description published in the IAP briefing strip notes.

NBAA believes that any increase in the chart clutter of the planview will be offset by the reduction in the chart notes and ease of interpretation. We believe that this change will be appreciated by the pilots and other users of the approach chart, namely air traffic controllers who must memorize these charts so as not to issue control instructions contrary to the procedure.

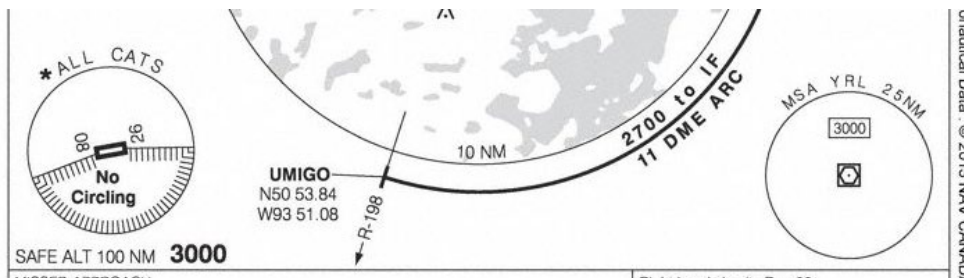
NBAA notes that this is not the first time that this recommendation was brought to the ACM. It was previously brought in 2002. The proponent withdrew the issue before resolution. Below is the RD link:

https://www.faa.gov/air_traffic/flight_info/aeronav/acf/media/RDs/00-02-126_Circling_Restriction_Symbology.pdf

We believe that the ACM CG should revisit this proposal and consider development of a circling restricted area graphic for the IAP chart.

Recommendations:

Develop a circling restriction graphic like the one or similar to the one used on the Canadian instrument approach chart to depict circling restricted airspace. Revise the 8260.19 Order to support the graphic depiction, which may be based on the TERPS maps. NBAA recommends that the graphic be kept simple and as unobtrusive as possible while clearly depicting the areas where circling is allowed and where it is restricted.



Here is another example from a commercial charting provider for a Canadian airport:

NDB to MAP		3:7	3:10	2:28	2:13	1:51	1:35	1:23	Chart		I
CIRCLE-TO-LAND											
Max Kts		MDA(H)									
A	90	5340' (2256') - 3									
B	120										
C	140										
D	165										
NO CIRCLING											
CHANGES: Printing sequence.						© JEPPESEN, 2005, 2018. ALL RIGHTS RESERVED.					

Comments:

This recommendation affects:

- FAA Order 8260.19 & associated forms
- The IAC charting specification
- FAA Flight Procedures Team Criteria Implementation Schedule
- Aeronautical Information Manual/Aeronautical Information publication
- FAA's Instrument Procedures Handbook and Instrument Flying Handbook

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MEETING 21-02

Rich Boll, NBAA, [presented](#) the new recommendation. NBAA proposes graphically representing circling restrictions on Instrument Approach Procedure (IAP) charts. He explained that circling restriction information is currently published as briefing strip notes and the notes are subject to varying interpretation. He pointed out the notes are not published in a consistent way, leading to more potential confusion.

Rich showed an example of a Canadian chart with a graphic depiction of a circling restriction and said other countries also provide the information in this way. He said graphically depicted circling restrictions are easier for pilots to interpret, brief, and quickly reference during the approach. A graphic depiction would also eliminate variations in the textual description of these areas and/or differences in interpretation of the textual descriptions. The change will benefit pilots and other users of the approach chart including air traffic controllers. This is not the first time this issue has come to the ACM ([see Issue 00-02-126](#)). Rich feels that it was not adequately discussed before it was withdrawn and that this issue should be revisited.

Lev Prichard, APA, and Michael Stromberg, UPS-IPA, expressed their support for the graphic depiction.

Joshua Fenwick, Garmin, said he thinks this is a great idea however he expressed concern for how to deal with conditional circling NA areas, such as NA at night. He said he would like to see changes to the way the notes for restrictions are worded today to better define the area in a way not so subject to differing interpretation. Rich said he thinks conditional circling areas should be part of the graphic, not part of the note. John Moore, Jeppesen, expressed his concern about the amount of white space that will be used if there are multiple graphics or variable conditional restrictions. He said the group will need to look at more complex examples before making any decisions.

Jeff Rawdon, FAA/AFS-420, would like to see an example with conditional circling restrictions. He said this recommendation is going to take a considerable amount of time and research and that there are a lot of things that would need to change as part of the work, e.g., FAA Orders, Aeronautical Information Manual, Instrument Procedures Handbook, charting specifications. He said it would also take a long time for all the IAP charts to be updated. Rich said he understands this would be a day forward implementation and doesn't see that as a problem. Valerie Watson, FAA/AJV-A250, agreed that most changes to terminal products are implemented on a day forward basis and that should not present issue. She also agreed that changes to guidance and explanatory matter would of course need to be addressed were this proposal to move forward.

Kevin Keszler, AFFSA, agrees this is a good idea, but also agrees there will be obstacles to overcome. He pointed out that the Canadian charts are formatted differently and that they have more room for the graphic depiction in the planview. He also suggests looking at what the Chart Modernization Working Group is doing before making decisions, since their work, such as standardizing where things go, might affect decisions about this recommendation. Rich isn't opposed to bringing this issue under the Chart Modernization Working Group, but doesn't want to make it a dependency. Valerie voiced that she does not believe this issue should be tied to or dependent on the Chart Modernization effort and should be considered independently.

Valerie summarized that there clearly seems to be audience consensus that a graphic depiction of circling restrictions is desirable and should be investigated, but there are concerns about how to depict conditional restrictions that could involve additional notes or the publication of multiple circling graphics. She said more investigation is definitely needed. She then pointed out that it is likely the language describing circling restrictions needs to be clarified regardless of where this recommendation goes. She stated that if the current guidance for circling NA text today results in the publication of notes of insufficient clarity that are misinterpreted by pilots, those notes will be undoubtedly be misinterpreted by chart producers attempting to create a graphic. She suggested the 8260.19 guidance for the publication of these notes be examined.

Bill Tuccio, Garmin, asked whether this recommendation includes circling not authorized to a runway, or is it just cardinal directions. Rich said he was originally not planning to include those and they would remain as a note. Bill said he would like to see a human factors study on this proposal.

Diane Adams-Maturo, FAA/AFS-420, asked if the problem that is causing confusion is really with the way that the notes are written. If so, she suggested that we start there and do some work to make the notes more understandable. Rich agrees that if we can improve the notes,

that would help, however even if you improve the clarity of the notes, he believes a graphic depiction is preferable.

Jeff Rawdon said he would like to keep this recommendation within its original scope. He doesn't think it should be expanded to include the conditional circling notes. He also does not believe it should be tied in with the Chart Modernization effort. He suggested that the issue remain on the agenda for the FAA to investigate the recommendation further and determine next steps.

Valerie said it would be helpful to look at a few complicated examples and develop prototypes for the next meeting to show how those instances might be depicted. Krystle Kime, FAA/AJV-A222, said she sees validity in this recommendation. She pointed out that with some of the more complex scenarios that were discussed, it is possible that they may have to remain as notes. Regardless, she said she can investigate the charting aspect and come back with suggestions. Rich said he would like to restrict the recommendation to circling restrictions within the maneuvering areas and the rest can remain as chart notes.

Jeff clarified that there will be an FAA review of the recommendation and the FAA will report back at the next ACM. Valerie asked whether Flight Procedures and Airspace Group is willing to look at standardization of the notes format guidance as Diane had suggested. Jeff said that will be part of the agency review.

STATUS: OPEN

ACTION: Jeff Rawdon, FAA/AFS-420 will report back on the FAA's review of graphic circling restrictions on Instrument Approach Procedure Charts.

MEETING 22-01

Jeff Rawdon, FAA/AFS-420, reported that the ACM recommendation review group looked at this recommendation and agreed that the depiction of graphic circling restrictions on Instrument Approach Procedures (IAPs) could well be a useful safety improvement and is worthy of pursuit. The review group thinks the majority of circling restrictions would be well served with a graphic; however, there are some restrictions that would be difficult to handle as a graphic and may need to remain as notes. His office will investigate how the procedure source would need to change to support graphic circling depictions. Additionally, Jeff committed that the Flight Procedures and Airspace Group will also look into standardization of the current note format guidance in FAA Order 8260.19. He pointed out that there are likely a lot of circling restriction notes published that are based on older criteria, so individual restriction notes might not reflect what is currently in the criteria. He pointed out that if this does come to fruition, it will take a long time to implement and would be a day forward process as procedures are amended.

Valerie Watson, FAA/AJV-A250, concurred that some of these restrictions are complicated and might still be better served with a textual note. Krystle Kime, FAA/AJV-A222, committed to develop prototypes of a few complicated examples for the next meeting to show how those instances might be depicted.

STATUS: OPEN

ACTION: Jeff Rawdon, FAA/AFS-420, will report back on FAA Order 8260.19 changes necessary to support the graphic depiction of circling restrictions on Instrument Approach Procedure charts.

ACTION: Jeff Rawdon, FAA/AFS-420, will report back on the Flight Procedures and Airspace Group's work to ensure standardization of the current circling restriction note format guidance in FAA Order 8260.19.

ACTION: Krystle Kime, FAA/AJV-A222, will develop prototypes of complex graphic circling restrictions on Instrument Approach Procedure charts for review at the next ACM.

MEETING 22-02

Jeff Rawdon, FAA/AFS-420, reported that the Flight Procedures and Airspace group has not had a chance to work on this proposal yet, but it is on the list of items to be worked. He will report any progress at the next meeting.

Krystle Kime, FAA/AJV-A222, showed [prototypes](#) she created from currently existing [circling restriction notes](#). She explained that there are many notes that are easy to graphically portray, but there are others that cannot be depicted and those may have to remain as notes. Valerie Watson, FAA/AJV-A250, expressed some concern that pilots may not look for the notes if some are left in the briefing strip while others are shown graphically on the same chart. She suggested that a given chart should either document all restrictions as notes or all as graphic. She asked Jeff if his organization has looked at clarifying or standardizing the note format regardless of whether this proposal is accepted. Dan Wacker, FAA/AFS-420, said the standardization of the notes has already been addressed in FAA Order 8260.19, but it takes time for the notes to be updated to the new criteria on the charts.

Mike Stromberg, UPS-IPA, said he is still in favor of graphic circling restrictions even if all the notes can't be shown graphically. He believes "a picture is worth a thousand words" so any restrictions that can be shown graphically should be. Pat Mulqueen, FAA/AJV-A440, agrees that some restrictions are so complicated they will need to remain in note form, but thinks the graphic may be possible in many cases. TJ Nichols, FAA/AFS-420, said the Flight Procedures and Airspace Group still needs to work out the details. He cautioned that they need to make sure not to confuse night restrictions with other types of restrictions. Jeff agreed and said there is still a lot of work to do on this issue.

STATUS: OPEN

ACTION: Jeff Rawdon, FAA/AFS-420, will report back on Flight Procedures and Airspace Group approval of the proposal and FAA Order 8260.19 changes necessary to support the graphic depiction of circling restrictions on Instrument Approach Procedure charts.

MEETING 23-01

Jeff Rawdon, FAA/AFS-420, reported that Flight Standards decided to create an in-house workgroup to begin investigating this issue. They determined there are 546 circling restrictions that they consider “simple” and 121 “complex” circling restrictions.

Krystle Kime, FAA/AJV-A222, asked the ACM participants if it would be helpful to only depict simple circling restrictions as a graphic and leave the more complex restrictions as notes. She asked them to consider the loss of planview space.

Mike Stromberg, UPS IPA, thinks it is worth it to depict the simple ones and also worth trying to figure out how to depict the complex circling restrictions.

Joel Dickinson, FAA/AFS-410, said that from a standards perspective, it is preferable to show all restrictions as a graphic. Mike pointed out that circling NA to a certain runway at night would be hard to depict. Krystle said the problems are not just with circling at night, but also with Cat D situations. Rich thinks it is important to specify when you can/cannot circle to a runway and also to specify which areas you cannot circle in. Those are two separate things and one may have to be handled as a note.

Tom Carrigan, FAA/AJV-A260, said he loves the idea of the graphic depiction, but if you have both a graphic and associated notes for the complex ones, he is concerned a pilot may get used to looking at the graphic and fail to look at the notes. Rich said he understands the concern about the notes, but pointed out that there are many things on the chart that require pilots to look at the notes.

Pat Mulqueen, FAA/AJV-A440, said there are two types of restrictions, one for maneuvering and one for night. Tailoring these depictions to the maneuvering area is most helpful. Circling NA at night is mostly due to unlit obstacles. He thinks the discussion should focus on maneuvering areas and leave the notes for NA at night.

Dan Wacker, FAA/AFS-420, asked if this is a charting specification change or a criteria change. Jeff said this is a charting specification change that requires some criteria updates. FAA Order 8260.19 would need to be updated to explain the graphic and the graphic will need to be documented on the procedure source forms.

John Collins, ForeFlight, asked if any consideration was given to making the non-circling area shaded. Krystle said they would consider that.

Diane Adams-Maturo, FAA/AFS-420, pointed out that this change is going to affect a lot of things, e.g., FAA Order 8260.19, Aeronautical Information Manual, charting specifications, etc. Jennifer agreed and said this discussion was to better understand if the ACM audience still supports this proposal even though it will be more complicated and time consuming to implement than was originally thought.

Rich said there was an accident at Truckee, CA, where the pilot did not see the circling restriction since it was buried in the notes. A graphic would quickly show a pilot where they can circle and where they cannot. Dan said there will still be issues at night. Rich said they are only

asking the FAA to show pilots areas where they can circle. Rich showed an example from Canada, which already graphically depicts circling restrictions.

Bruce McGray, FAA/AFS-420, expressed the opinion that this is a safety issue. Joel said if Canada is doing this, there should be an ICAO specification that shows how to handle it. Mark Harding, NAV CANADA, provided ICAO Doc 8697, Aeronautical Chart Manual, [paragraph 11.10.6.1 sub F](#). This shows the international standard for graphic circling restrictions.

Jennifer summarized the discussion. She said there is still ACM support for showing circling restrictions graphically despite the fact that some restrictions will have to remain as notes and that this proposal may be more difficult and time consuming than first realized. She said the first step is for Aeronautical Information Services to put together an internal workgroup to investigate the steps to accomplish this goal.

STATUS: OPEN

ACTION: Krystle Kime, FAA/AJV-A222, and Patrick Mulqueen, FAA/AJV-A440, will put together a Graphic Circling Restrictions workgroup and report on progress at the next ACM.