AERONAUTICAL CHARTING MEETING
Charting Group
Meeting – October 24 - 25, 2018

RECOMMENDATION DOCUMENT
FAA Control #18-02-327

Subject: U.S. Government IAP Chart Modernization

Background/Discussion:

U.S. Government (FAA) instrument approach charts (IAPs) have become increasingly complex and difficult for pilots to use and interpret. This complexity results from TERPS and PBN requirements, multiple lines of minima, voluminous chart notes, just to name a few. As a result, pilots find it difficult to extract necessary information to fly the approach. Several FAA initiatives are currently underway or proposed to simplify the FAA IAP charts. Currently underway is the deployment of the PBN and Equipment Requirements Box. In addition, at the 1801 ACF meeting, there was discussion about the removal of the airport sketch on the FAA’s IAP chart. NBAA believes that these changes are long overdue. We believe it is necessary to look at Chart Notes, the Minima depiction, and adjustments to these minima resulting from inoperative components or remote altimeter setting source (RASS).

Recommendations:

NBAA believes that changes can be made that would greatly reduce the complexity of the FAA’s IAP chart presentation in the Terminal Procedures Publication (TPP). These proposed changes include:

1. Removal of the Airport Sketch from the IAP chart and replace it with a stand-alone Airport Diagram chart for every airport entry in the TPP. This proposal not only reduces chart clutter and returns valuable “white space” to the chart, it will also provide for a larger airport diagram assisting pilots with ground surface operations and reduces the risks associated with runway incursions and excursions. Removal of the Airport Sketch has been discussed at a prior ACF; however, it is incorporated into this recommendation as a prerequisite for IAP modernization.

2. Eliminate Military Minimums. Concerning military minimums, the ceiling is easily derived from other information already present on the chart and a parenthetical Statute Mile (SM) visibility for RVR would be provided.

3. Eliminate RASS chart note and incorporate the RASS as a separate line of minima applicable to the altimeter source:
Current RASS Chart Note:

When VGSI inop, Circling Rwy 13 NA at night. Circling Rwy 31 NA at night. Circling NA east of Rwys 19, 31. VDP NA with Springfield altimeter setting. When local altimeter setting not received, use Springfield altimeter setting: increase all DA 477 feet and all MDA 480 feet; increase S-ILS 19 all Cats visibility 1 ½ miles, increase S-LOC 19 Cat A/B visibility ½ mile, and Cat C visibility 1½ miles. For inop MALSR, increase S-ILS 19 visibility all Cats to 1½ miles, and increase S-LOC 19 Cat C visibility to 1½ miles. For inop MALSR when using Springfield altimeter setting: increase S-ILS 19 all Cats visibilities to 3 miles. Missed approach requires a minimum climb of 370 feet per NM to 2800: if unable to meet climb gradient, see ILS or LOC/DME Y Rwy 19. Rw 1, 13, 31 helicopter visibility reduction below 1 SM NA. Rwy 19 helicopter visibility reduction below ¾ SM NA. DME required.

Proposed Incorporation of RASS into Minima Section:

<table>
<thead>
<tr>
<th>CATEGORY</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td>S-ILS 19†</td>
<td>FULL 1201-7/8 414</td>
<td>NA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>INOP 1201-1¼ 414</td>
<td>NA</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>S-LOC 19†</td>
<td>FULL 1280-½ 493</td>
<td>1280-1 493</td>
<td>NA</td>
<td></td>
</tr>
<tr>
<td>INOP 1280-1 493</td>
<td>1280-1½ 493</td>
<td>NA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CIRCLING 1940-1¼ 1153</td>
<td>2020-1½ 1233</td>
<td>2540-3 1753</td>
<td>NA</td>
<td></td>
</tr>
</tbody>
</table>

The advantages of these changes are clear. The benefit of this proposed change is to furnish the pilot with a Minima Table providing minimums for all situations without the need for pilot computations or references to other pages within the TPP. The increased use of EFB products makes referencing ancillary pages difficult and time consuming.

Visibility with and without ALS

SM visibility provided for RVR outage and for military pilots

The advantages of these changes are clear. The benefit of this proposed change is to furnish the pilot with a Minima Table providing minimums for all situations without the need for pilot computations or references to other pages within the TPP. The increased use of EFB products makes referencing ancillary pages difficult and time consuming.
NBAA proposes Two possible presentation options for depicting the lines of minima:

1. The “Stacked” option:

   ![Stacked Diagram]

   The benefits of these changes are self-evident in three examples that NBAA furnishes for consideration – see attached chart examples for Little Rock (LIT), Chicago (ORD), and San Francisco (SFO).

   - **Significantly reduces** number of chart notes, which help to support the PBN and Equipment requirements box implementation.
   - Eliminate RASS notes 100%
   - Eliminate inoperative chart notes 100%
   - Eliminate inoperative components table
   - Visibility via chart note can penalize certain categories - Eliminated
   - **Minima Table provides minimums for all situations**

2. The “Side-by-Side” option:

   ![Side-by-Side Diagram]
Comments:

As an ancillary benefit, this change supports future moves towards data-driven electronic chart applications.

This recommendation affects:
1. US IACC charting specification for instrument approach procedure charts
2. Aeronautical Information Manual (AIM) & Aeronautical Information Publication (AIP)

Submitted by: Richard J. Boll II,
Organization: representing the National Business Aviation Association (NBAA)
Phone: 316-655-8856
E-mail: richard.boll@sbcglobal.net
Date: October 2, 2018

MEETING 18-02


1. Remove the Airport Sketch from Approach plates concurrent with the addition of an Airport Diagram for every airport published in the Terminal Procedures Publication (TPP)
2. Remove Military Minimums
3. Incorporate Remote Altimeter Setting Source (RASS) as a separate line of minima
4. Incorporate Inoperative Components into a separate line(s) of minima

Discussion started with the proposed changes to the lines of minima, which would involve deletion of remote altimeter notes and inoperative component notes and incorporating those values in the exiting minima table. Rich reviewed two different ways the new lines of minima could be incorporated into the existing tables, stacked or side-by-side (See example charts). Valerie Watson, FAA/AJV-553, stated that Divya Chandra, who works with the Volpe Human Factors Office, stated a preference for the side-by-side depiction as less apt to be misread. John Bordy, FAA/AFS-420, questioned whether it is worth the space on the chart to add the Inoperative Minimums considering they are not often used. Rich stated that he finds value in having them on the Jeppesen charts and would like to see the same on FAA charts.

With regard to the removal of the airport sketch, Vince Massimini, Mitre, stated that he believes the sketch is of high value to pilots. He commented that, particularly at smaller airports, the airport sketch helps with situational awareness and ensuring proper alignment with the runway, particularly when performing a circling approach.

Dave Stamos, NGA, stated that the Department of Defense (DoD), across all service branches, does not support removal of the airport sketch, even with addition of an airport diagram. He said that a significant portion of military operations utilize circling and non-precision approaches and pilots do not want to flip pages to see the airport layout. He stated that military pilots want the added situational awareness provided by the current sketch depicting the final approach course.
With regard to the proposal to remove the military minimums, he objected because having the ceiling and visibility on the chart helps to avoid situations where pilots are doing mental math in the cockpit. With regard to the addition of inoperative minimums, he said that this can be done during flight planning and does not need to be added to the charts. He stated that NGA and DoD non-concurs on all of these proposed changes.

George Bland, USAF, commented that the military is still using paper charts and that there are still things that they need to see on the charts. He said that they will not be able to agree to get rid of the sketch right now, but can look towards that in the future.

Rune Duke, AOPA, reported that AOPA had reached out to their membership in a survey to see how their pilots felt about these proposed changes. The conclusion of the survey found that pilots prefer the side-by-side minima depiction 2:1 over the stacked minima depiction or the current depiction. There were concerns expressed about the loss of the sketch, however only 23% preferred the current depiction over the newer alternatives. Pilots surveyed by AOPA also questioned the need to depict RASS on the charts.

Tom Loney, Royal Canadian Air Force, stated that in Canada, they changed their chart format and removed the airfield sketches from approach charts. He said he and others resisted the change at first, but five years later, he said that it has not been an issue. He said they do show a small graphic depiction of the approach lights with a track line.

John Blair, FAA/AFS-410, said that he shares the concerns of others over the loss of airport sketch. He pointed out that situational awareness is important, especially on offset procedures. He asked if there is a way to still capture the runway alignment intercept angle on the chart. Rich stated that they haven’t looked at that yet, but perhaps a smaller sketch could be considered. George stated that NGA does not like to take exception to the specifications and that they would like to work to find a common goal.

There was agreement within the audience that the best way to move forward was through the establishment a workgroup to come up with new ideas and examples. Rich agreed to chair the workgroup.

| Workgroup |
|-----------|-----------------|-----------------|
| Rich Boll – Chair | NBAA | richjb2@rjb2.onmicrosoft.com |
| Tom Carrigan | FAA | thomas.carrigan@faa.gov |
| Vince Massimini | MITRE | svm@mitre.org |
| Charles Phifer | FAA | charles ctr phifer@faa.gov |
| Jason Hewes | Garmin | Jason.hewes@garmin.com |
| Andrew Lewis | Garmin | Andrew.Lewis@garmin.com |
| Heidi Williams | NBAA | hwilliams@nbaa.org |
| Rune Duke | AOPA | Rune.duke@aopa.org |
| George Bland | HQ AFFSA | george.bland@us.af.mil |
| James E. Spencer | NGA | james e spencer@nga.mil |
| James Ray | USN | james r ray1@navy.mil |
| Tom Loney | RCAF | tom.loney@forces.gc.ca |
| Valerie Watson | FAA | Valerie.s.watson@faa.gov |
| Jennifer Hendi | FAA | jennifer l hendt@faa.gov |
| John Moore | Jeppesen | John.Moore@jeppesen.com |
| Reggie Arsenault | Jeppesen | Reginald.Arsenault@jeppesen.com |

Page 5 of 9
MEETING 19-01

Rich Boll, NBAA, provided an update on progress of the IAP Chart Modernization Workgroup. The Workgroup met several times over the last 6 months and, based on the initial proposal, they have developed prototypes and expanded ideas for improving the Instrument Approach Procedure (IAP) chart layout. The primary proposed revisions involve incorporation of inoperative components into the minima tables, deletion of corresponding notes, and replacement of the current airport sketch with a skeletonized thumbnail sketch. He made a point to stress that every airport with a public-use IAP will have a full-sized Airport Diagram published in the Terminal Procedures Publication (TPP) that will provide users with a detailed airport layout. He then showed the audience several prototypes of expanded Airport Diagrams and reformatted IAPs.

Rich then discussed some issues that still need resolution. He asked the military members in the audience if the military ceiling and visibility minimums could be removed from the charts (See Slide #12). Valerie Watson, FAA/AJV-A250, pointed out that the military ceiling and visibility are not provided on the procedure source document, but are calculated and added to the minima tables by the charting offices. George Bland, USAF, said that for now, the military minima still need to be charted. Rich asked if the workgroup could start a dialog with the branches of the military to see what can be done. George said yes, they can begin that conversation. Dave Stamos, NGA, said that they only require that the visibility remain. Valerie pointed out that in the current proposal the visibility will remain and the visibility provided in parentheses with the military ceiling is a repetition of the visibility already provided on the source document.

Rich then showed a workgroup proposal to move the “1800 RVR, authorized with use of FD or AP or HUD to DA” note from the notes box in the briefing strip to the revised minima section as shown on his example (See Slide #13). There was positive feedback from the audience regarding this suggestion.

He then shared the FAA/AFS-400 feedback that he had received (See Slide #14) with particular attention to the concern about the loss of VGSI indication. He said this is a topic the workgroup plans to discuss.

Rich briefed that the workgroup will continue to meet with plans to continue to refine the proposed IAP chart layout, solicit more feedback from users, and solicit additional Volpe Human Factors Office feedback. Rich said he plans to present a final recommendation to the ACM at the next meeting.

STATUS: OPEN
**ACTION:** Rich Boll, NBAA, will report on progress of the IAP Chart Modernization Workgroup.

**ACTION:** George Bland, USAF, to report on discussions regarding the proposal to remove the military ceiling and visibility values from IAP charts.

---

**MEETING 19-02**

Rich Boll, NBAA, provided an update on progress of the IAP Chart Modernization Workgroup. He stated that one of the outstanding issues that must be resolved before the proposal can move forward is to determine if Department of Defense (DoD) will agree to removal of the military ceiling and visibility minimums. Kevin Keszler, AFFSA, at this point in the discussion, said that he has been coordinating with the branches of the military to see if they will support the removal, but he does not yet have consensus. There was a lengthy discussion, during which military audience members expressed their concerns with removing the charted military minimums.

Rich then moved on to discuss ACM concurrence for the remaining chart changes that could still be accomplished even if the military minimums must be retained. First, he showed the proposal to replace current airport sketch with a skeletonized thumbnail sketch. He made a point to stress that every airport with a public-use IAP will have a full-sized Airport Diagram published in the Terminal Procedures Publication (TPP). Second, he showed the expanded profile and minima table. Third, he showed the incorporation of Remote Altimeter Setting Source (RASS) as a separate line of minima and their removal from the briefing strip notes box. Fourth, he showed how the Time/Distance Table will be smaller and moved to the planview. Fifth, he showed how the VGSI symbols will be moved to the briefing strip lighting box. (See Slides 5-9)

Rich then pointed out the changes from the original proposal that must await the removal of the military ceiling and visibility minimums. This includes the incorporation of inoperative components into the minima table and the accompanying removal of those notes from the briefing strip notes box.

Rich said that there are two options. One is to take the agreed upon items and move forward with the changes that can be accomplished while retaining the military minima. The second option is to wait until the military moves forward with the decision to remove military minima and then make all the changes together. Rich prefers the second option because of his concerns with moving forward with partial changes without the significant benefit of incorporating inoperative minima. Several people agreed with Rich. Krystle Kime, FAA/AJV-A222, agreed and added that these changes will take a long time for Terminal Charting to implement so it would be better to wait for approval and work on all the changes at once.
Toward the end of the discussion, Kevin announced that during the course of Rich’s presentation, he had been in communication with military representatives and was told that DoD requires that the military ceiling and visibility minimums remain on the chart.

Rich reported that in previous discussions with the military, it was agreed that in most cases only the military ceiling need be depicted. It was agreed that the military visibility when expressed in statute miles need not be depicted as it is a repetition of the standard (non-military) visibility. In cases when the visibility is reported as an RVR (runway visual range) value, a visibility in statute miles WILL be reported with the military ceiling. Rich then said that work would continue with the above changes that have ACM concurrence and with retention of the military minima in the manner agreed upon in previous discussions.

Mike Webb, FAA/AFS-420, expressed concern for helicopter pilots over the removal of the full airport sketch, noting that most helicopter operations are single pilot and having to flip pages can be difficult. Mike requested the opportunity to take the concepts discussed during the ACM to helicopter community to verify their support of this proposal. Valerie pointed out that this item has been under discussion at the ACM for some time and if there is not agreement for removal of the sketch, none of the other changes can be accomplished. Mike agreed to expedite his vetting of the sketch to thumbnail to the helicopter community.

Rich stated that in light of this discussion, he would reconvene the workgroup to determine if this proposal is still worth pursuing. Rich will report back on developments at the next meeting.

**STATUS: OPEN**

**ACTION:** Mike Webb, FAA/AFS-420 will verify support from the helicopter community regarding the proposed removal of the airport sketch and replacement with a skeletonized thumbnail and will report back at the next ACM.

**ACTION:** Rich Boll, NBAA, will report on progress of the IAP Chart Modernization Workgroup.

---

**MEETING 20-02**

Samer Massarueh, FAA/AJV-A221, reviewed the issue. Rich Boll, NBAA, presented a briefing on the status of this item. Rich shared the history and summarized the proposal as it stands today. He said that the primary proposed revisions involve incorporation of inoperative components into the minima tables and deletion of corresponding notes, expansion of the profile view, and replacement of the current airport sketch with a smaller, skeletonized sketch. Sample Instrument Approach Procedure (IAP) charts where presented ([Slides 5-7](#)).

Page 8 of 9
Rich reported that at ACM 19-02, the military representatives reported that DoD requires that the military ceiling and visibility remain in the minima tables. Rich asked if there was any further consideration of this proposal from the military since that time. Kevin Keszler, AFFSA, said there are plans to readdress this issue to see if they can get military concurrence. He asked if Rich had received a response from the Army or the Navy on this. Rich said he has not. Krystle Kime, FAA/AJV-A222, said that since the original proposal to remove the military ceiling and visibility was not well received, the proposal has been changed to only remove the repeated statute mile visibility. If the civilian visibility is RVR, the corresponding statute mile visibility will be retained just as it is today. Kevin said that he believes this change is viable, but it will need to be staffed again to see if there is concurrence. Rich asked AJV-A to assist him in putting together some new examples to clarify the requested changes for the military.

Rich said that the original proposal included the incorporation of Remote Altimeter Setting Source (RASS) as a separate line of minima and the removal of RASS notes from the briefing strip. Krystle reported that because of other compromises that have been made to this proposal, Terminal Charting has determined they can no longer support adding RASS to the minimums tables. She said it has also come to their attention that there will be fewer RASS notes in the briefing strip in the future because many of the backup altimeter source notes will be documented on the 8260-9 form in the future and will therefore not be indicated for charting.

Mike Webb, FAA/AFS-420, reported that since the last ACM, he reached out to verify support from the helicopter community regarding the proposed removal of the airport sketch and replacement with a skeletonized sketch. He was able to verify support for the proposed change.

Rich said that he will reconvene the workgroup and continue to pursue this proposal.

**STATUS: OPEN**

**ACTION:** Rich Boll, NBAA, will submit a revised summary of the proposal to the military representatives of the IAP Chart Modernization Workgroup for reconsideration.

**ACTION:** Rich Boll, NBAA, will report on progress of the IAP Chart Modernization Workgroup.