

**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:

- T** When VGSI inop, Circling Rwy 13 NA at night. Circling Rwy 31 NA at night. Circling NA east of Rwy 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  $1\frac{5}{8}$  miles, increase S-LOC 19 Cat A/B visibility  $\frac{1}{4}$  mile, and Cat C visibility  $1\frac{1}{2}$  miles. For inop MALSR, increase S-ILS 19 visibility all Cats to  $1\frac{1}{4}$  miles, and increase S-LOC 19 Cat C visibility to  $1\frac{3}{8}$  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. Rwy 1, 13, 31 helicopter visibility reduction below 1 SM NA. Rwy 19 helicopter visibility reduction below  $\frac{3}{4}$  SM NA. DME required.
- A**
- ❄** -4°C

Proposed Incorporation of RASS into Minima Section:

| CATEGORY                      |      | A                         | B                         | C                        | D  |
|-------------------------------|------|---------------------------|---------------------------|--------------------------|----|
| LOCAL ALTIMETER SETTING       |      |                           |                           |                          |    |
| S-ILS 19†                     | FULL | 1201-7/8 414              |                           |                          | NA |
|                               | INOP | 1201-1 $\frac{1}{4}$ 414  |                           |                          | NA |
| S-LOC 19†                     | FULL | 1280- $\frac{1}{2}$ 493   |                           | 1280-1 493               | NA |
|                               | INOP | 1280-1 493                |                           | 1280-1 $\frac{1}{2}$ 493 | NA |
| CIRCLING                      |      | 1940-1 $\frac{1}{4}$ 1153 | 2020-1 $\frac{1}{2}$ 1233 | 2540-3 1753              | NA |
| SPRINGFIELD ALTIMETER SETTING |      |                           |                           |                          |    |
| S-ILS 19†                     | FULL | 1678-2 911                |                           |                          | NA |
|                               | INOP | 1678-3 911                |                           |                          | NA |
| S-LOC 19†                     | FULL | 1760- $\frac{3}{4}$ 973   |                           | 1760-1 $\frac{1}{2}$ 973 | NA |
|                               | INOP | 1760-1 $\frac{1}{4}$ 973  |                           | 1760-2 973               | NA |
| CIRCLING                      |      | 2420-1 $\frac{1}{4}$ 1633 | 2500-1 $\frac{1}{2}$ 1713 | 3020-3 2233              | NA |

4. Incorporate the effects of inoperative components into the lines of minima for each approach category. The purpose of this proposed change is to furnish the pilot with a Minima Table providing minimums for all situations. Today, the pilot must refer to the Inoperative Components Table of the TPP to determine corrections to the published visibility and to the MDA or DA with the failure of the approach lighting system, runway touchdown zone or centerline lights, or RVR systems. Below is an example of the proposed change:

**Visibility with and without ALS**

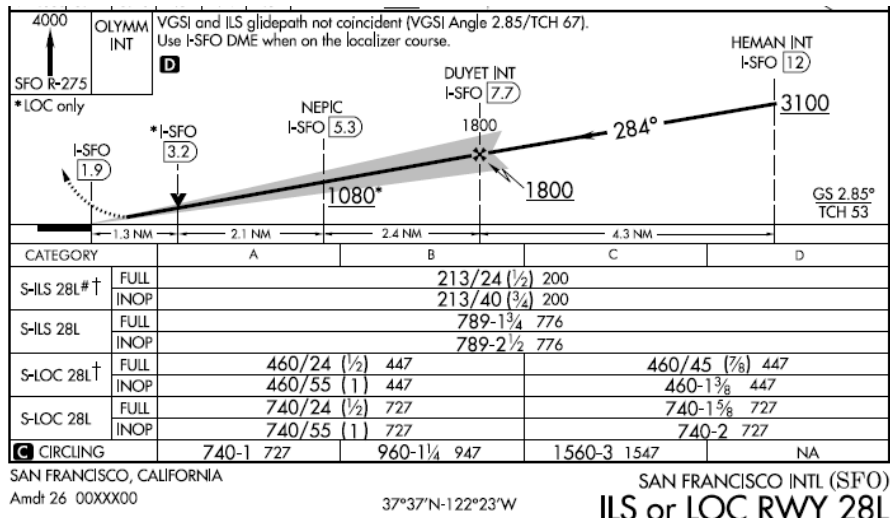
**SM visibility provided for RVR outage and for military pilots**

| CATEGORY                    |      | A                            | B                        | C                             | D |
|-----------------------------|------|------------------------------|--------------------------|-------------------------------|---|
| LOCAL ALTIMETER SETTING     |      |                              |                          |                               |   |
| LPV DA                      | FULL | 542/50 (1) 283               |                          |                               |   |
|                             | INOP |                              |                          |                               |   |
| LNAV/ DA                    | FULL | 773-1 $\frac{3}{4}$ 514      |                          |                               |   |
|                             | INOP |                              |                          |                               |   |
| LNAV MDA                    | FULL | 680/40 ( $\frac{3}{4}$ ) 421 |                          | 680/60 (1 $\frac{1}{2}$ ) 421 |   |
|                             | INOP | 680/50 (1) 421               |                          |                               |   |
| CIRCLING                    |      | 800-1 534                    | 940-2 674                | 1180-3 914                    |   |
| STUTTGART ALTIMETER SETTING |      |                              |                          |                               |   |
| LPV DA                      | FULL | 624-1 $\frac{1}{4}$ 365      |                          |                               |   |
|                             | INOP |                              |                          |                               |   |
| LNAV/ DA                    | FULL | 855-2 596                    |                          |                               |   |
|                             | INOP |                              |                          |                               |   |
| LNAV MDA                    | FULL | 762/50 (1) 503               |                          | 762-1 $\frac{1}{2}$ 503       |   |
|                             | INOP |                              |                          |                               |   |
| CIRCLING                    |      | 882-1 $\frac{1}{4}$ 616      | 1022-2 $\frac{1}{4}$ 756 | 1262-3 996                    |   |

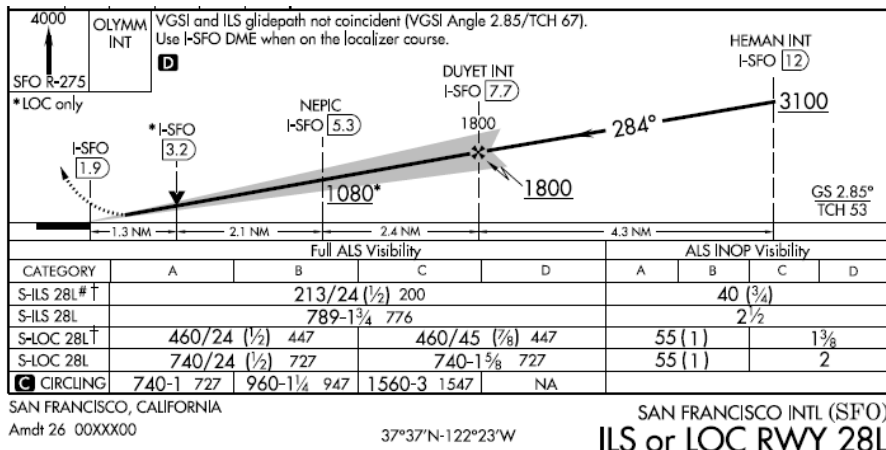
The advantages of these changes are clear. The benefit of this proposed change is to furnish the pilot with a Minima Table providing minimums for all situations without the need for pilot computations or references to other pages within the TPP. The increased use of EFB products makes referencing ancillary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

NBAA proposes Two possible presentation options for depicting the lines of minima:

1. The “Stacked” option:



2. The “Side-by-Side” option:



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**

**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)
3. Pilot training material (e.g., Instrument Flying Handbook, Instrument Procedure Handbook).

**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**

Rich Boll, NBAA, briefed the topic. Rich [presented four recommendations](#) to modernize and improve the presentation of Instrument Approach Procedure (IAP) Charts.

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 existing 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.

| <b>Workgroup</b>  |          |                                 |                    |
|-------------------|----------|---------------------------------|--------------------|
| Rich Boll – Chair | NBAA     | richjb2@rjb2.onmicrosoft.com    | 316-655-8856       |
| Tom Carrigan      | FAA      | thomas.carrigan@faa.gov         | 202-267-3244       |
| Vince Massimini   | MITRE    | svm@mitre.org                   | 703-983-5893       |
| Charles Phifer    | FAA      | charles.ctr.phifer@faa.gov      | 202-267-5295       |
| Jason Hewes       | Garmin   | Jason.hewes@garmin.com          | 913-397-8282       |
| Andrew Lewis      | Garmin   | Andrew.Lewis@garmin.com         | 913-440-5845       |
| Heidi Williams    | NBAA     | hwilliams@nbaa.org              | 202-783-9255       |
| Rune Duke         | AOPA     | Rune.duke@aopa.org              | 202-509-9515       |
| George Bland      | HQ AFFSA | george.bland@us.af.mil          | 405-582-5010       |
| James E. Spencer  | NGA      | james.e.spencer@nga.mil         | 314-676-1401       |
| James Ray         | USN      | james.r.ray1@navy.mil           |                    |
| Tom Loney         | RCAF     | tom.loney@forces.gc.ca          | 204-833-2500 x5512 |
| Valerie Watson    | FAA      | Valerie.s.watson@faa.gov        | 202-267-5218       |
| Jennifer Hendi    | FAA      | jennifer.l.hendi@faa.gov        | 202-267-3861       |
| John Moore        | Jeppesen | John.Moore@jeppesen.com         | 303-328-4789       |
| Reggie Arsenault  | Jeppesen | Reginald.Arsenault@jeppesen.com | 303-328-4355       |

**STATUS: OPEN**

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

---

**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 were presented ([Slides 5-7](#)).

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.

---

## **MEETING 21-01**

Samer Massarueh, FAA/AJV-A223, reviewed the issue. Rich Boll, NBAA, presented a [briefing](#) on 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.

Rich explained that at ACM 19-02, it was determined that the military ceiling and visibility cannot be removed. The workgroup is now proposing to remove the repeated visibility value except when RVR is charted, the visibility will be shown as it is today ([slide 4](#)). There is concurrence from the FAA, industry, and two of the three branches of the military. They are awaiting on concurrence from the Army, but expect it will not be a problem. With regard to the simplified airport sketch, there was significant workgroup discussion concerning the depiction of the final approach course information and whether or not it should be shown within the sketch in all cases. Rich said he plans to bring a separate RD to the next ACM to discuss this.

John Collins, ForeFlight, expressed some concern regarding the size of the font used in the Time/Distance Table. He suggested the font size be increased as much as possible to ensure readability.

There was a discussion about whether to put heliports on the simplified airport sketch. Rich said the working group recommends including them, but would like ACM consensus. A poll was taken and there was consensus for charting the heliports.

Rich then discussed airport lighting. He said all airport lighting information previously contained within the airport sketch box will be moved to the Airport Diagram. He explained that every airport in the Terminal Procedures Publication (TPP) will have an airport diagram. He said the workgroup is also proposing the addition of Visual Glide Slope Indicator (VGSI) lighting information to the briefing strip for the approach runway. See [slides 12 & 13](#) for the proposed briefing strip lighting depiction. Rich then presented several sample Instrument Approach Procedure (IAP) charts ([slides 15-18](#)). He also explained how this recommendation will move forward to implementation ([slide 19](#)).

George Bland, USAF, pointed out that this workgroup has been going back and forth on a number of issues. He said the workgroup was ready to present this to the ACM to get feedback, but there will likely still be adjustments to this proposal before it is finalized.

Bill Tuccio, Garmin, asked if the lighting graphic is necessary in the briefing strip. Rich explained that the lighting symbols are necessary so they can be shown in negative to indicate pilot control. He also pointed out that the TPP legend contains detailed lighting information.

Michael Stromberg, UPS, asked about the inoperative note on the CRQ example and how that should be depicted in the inoperative visibility minimums, i.e., NA or blank. Valerie Watson, FAA/AJV-A250, said the workgroup is looking at that. She also pointed out that all inoperative visibility values that will be charted, will be documented on the procedure source form so these decisions will have to be addressed in the criteria. Rich suggested that comments regarding that issue should be sent to the workgroup for consideration.

Bill de Groh, APA, said he likes the changes, but when he looked at the example he wondered if it would be helpful to better separate the airport sketch from the profile view with a heavier line. Mike Melssen, FAA/AFS-410, also likes the proposed changes and agreed that he would like to see heavier lines used to differentiate the sections of the chart. Valerie said the group will look at those line weights.

John Moore, Jeppesen, said there is always a tradeoff between the benefits of a change and the cost and time associated with implementing it. He asked how much this change will cost and what the implementation time will be. Deb Copeland, FAA/AJV-A220, said she doesn't expect this to be a heavy lift because Terminal Charting is in the process of automating the charts so these changes can be incorporated into that automation. With regard to the timing, many of the changes may have to wait until the automation is ready.

Jeff Lamphier, FAA/AJV-A240, said that FAA Order 7910.4E for Airport Diagrams has been updated to allow the FAA to create an Airport Diagram for every airport with an IAP.

Steve Madigan, Garmin, asked if the inoperative visibility values will be documented on the procedure source form. Valerie said the inoperative minima tables will be published on the 8260 procedure source form in the same way that standard tables are currently published. Steve then asked if a procedural amendment will be required before they can be implemented. Valerie said yes, the charts would not be updated until there was a new procedure source form to pull those values from. Krystle Kime, FAA/AJV-A222, added that if this format was approved, some of the changes could begin to be implemented before the procedural amendments for the minima tables. For example, they could move forward with the simplified sketches for airports that have an Airport Diagram in place.

Jim Deuvall, CAVU Companies, asked why the declared distances symbol is on the simplified sketch instead of moving it to the briefing strip notes. Rich said the workgroup did discuss the declared distance symbol and elected to keep it for now, but may revisit that later. Jim then asked why the FAA does not want to always chart the final approach course in the sketch. Rich explained that there are concerns about how pilots will interpret it in cases where the missed approach point falls outside the parameters of the sketch. He said this issue requires more investigation.

Brent Walker, FAA/AJV-A242, asked if the Common Traffic Advisory Frequency (CTAF) and lighting symbol that is charted on the communications line of an IAP will be added to the Airport

Diagram. Krystle said the workgroup will look at that, but she agrees that it should be included on the Airport Diagram.

Rich said that the presentation will be posted on the ACM website with an email address for input submission. Comment are requested by 6/1/2021. He said his goal is to present a formal recommendation to the ACM at the 21-02 meeting.

## **STATUS: OPEN**

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

## **MEETING 21-02**

Samer Massarueh, FAA/AJV-A223, reviewed the issue. Rich Boll [reported](#) on the progress of the Chart Modernization Working Group. He said there have been multiple meetings since the last ACM and the workgroup has developed a set of [recommended changes](#) to Instrument Approach Procedure (IAP) charts. The workgroup also met with FAA/AFS-420 in August to discuss future criteria changes that will be necessary if the proposal is to be implemented. It is expected that a formal Safety Risk Management (SRM) review of these proposed changes is going to be necessary and the hope is that the workgroup's recommendation document will assist with that review.

Rich then summarized the recommended changes. He pointed out that the workgroup recommends that all changes be implemented concurrently since they are interrelated and codependent.

- Airport Diagram ([slides 7-9](#)) – Every airport with a public use IAP will have an Airport Diagram. The content will be expanded to include selected information from the current IAP chart Airport Sketch. Principle changes include the addition of runway and approach lighting information and the addition of Pilot Controlled Lighting (PCL) information. See the slides for benefits and negatives. There are no identified hazards or mitigations.
- Expanded Profile View ([slides 10-11](#)) – The Profile view box will be expanded with the Airport Sketch preferably located on the right side of the profile. See the slides for benefits and negatives. There are no identified hazards or mitigations.
- Simplified Airport Sketch ([slides 12-18](#)) –A simplified, smaller Airport Sketch will be shown that will only include runways, runway numbers, runway length, final approach course and bearing (when the final approach course is within the scale of the sketch box), the declared distance icon if applicable, and helipad symbol (if applicable, scaled to 50%). See the slides for further discussion regarding the principle changes. [Slides 16-18](#) identify hazards and mitigations.
- Landing Minimums ([slides 19-21](#)) – Inoperative Component minima will be incorporated into the Landing Minima Box. See the slides for benefits and negatives. There are no identified hazards or mitigations.

- Time/Distance Table ([slides 22-23](#)) – The Time/Distance Table will be slightly smaller and repositioned to the top of the Airport Sketch box. See the slides for benefits and negatives. There are no identified hazards or mitigations.
- Briefing Strip Lighting Box ([slides 24-26](#)) – A Briefing Strip Lighting Box will be shown to include VGSI and ALS lighting information for the primary runway associated with a straight-in IAP. See the slides for further discussion regarding the principle changes and for benefits and negatives. There are no identified hazards or mitigations.

Diane Adams-Maturo, FAA/AFS-420, asked whether displaced thresholds would be included in the simplified airport sketch. Rich said displaced thresholds will not be included but are depicted on the Airport Diagram.

Jeff Rawdon, FAA/AFS-420, asked if the implementation will be day-forward. Rich said yes. Jeff said the charting changes will take a long time to implement. Rich agreed and said the FAA Forms and processes will have to be changed and once the implementation begins, the charts will slowly be updated to the new format. Valerie Watson, FAA/AJV-A250, pointed out that updates to the charts will depend on the existence/creation of a full sized airport diagram for each location and assured that would be coordinated internally.

Jeff then asked if Remote Altimeter Setting Source (RASS) minima will remain as briefing strip notes. Rich confirmed that RASS minima will remain as notes.

Bill Tuccio, Garmin, said that he would like to see human factors testing added to the implementation roadmap to ensure wider aviation community acceptance. Rich asked Jeff whether the Flight Operations Branch will do that kind of testing as part of the SRM process. Jeff said that will need to be determined but that there are resources available to the FAA for that kind of testing.

Rich asked if there is ACM consensus on the workgroup recommendations so they can be presented to the Flight Procedures and Airspace Group for consideration. An informal poll was conducted and there was ACM consensus to move forward with the recommendations. Jeff said Rich can send him the document and his office will begin their review.

## **STATUS: OPEN**

**ACTION:** Jeff Rawdon, FAA/AFS-420, will report on the Flight Procedures and Airspace Branch review of the IAP Chart Modernization Working Group Recommendations.

## **MEETING 22-01**

Jeff Rawdon, FAA/AFS-420, reported that Rich Boll, NBAA, finalized the IAP Chart Modernization Working Group [recommendations](#) and submitted them to Flight Procedures and Airspace Group (FPAG), where they are currently under review. He expects FPAG will initiate an agency workgroup to determine the next steps.

Valerie Watson, FAA/AJV-A250, asked whether FPAG is likely to initiate a Safety Risk Management Panel (SRMP) review of the proposal. Jeff said if the proposal moves forward, he

expects that they would conduct an SRMP since there are so many charting changes with this recommendation.

**STATUS: OPEN**

**ACTION:** Jeff Rawdon, FAA/AFS-420, will report on the Flight Procedures and Airspace Group review of the IAP Chart Modernization Working Group Recommendations.

---

**MEETING 22-02**

Jeff Rawdon, FAA/AFS-420, reported that Flight Standards held internal meetings to discuss the IAP Chart Modernization Working Group [recommendations](#) and has decided to accept the proposal with one revision. He explained that before Flight Standards approves the revised recommendation, they will need to conduct a safety review. He also explained there will have to be one exception to the proposal as briefed at the last meeting. Jeff said the minima portion of the proposal will only address procedures that have non-standard inoperative component landing minima notes. Procedures with only standard inoperative minima reductions will not be addressed and users will continue to use the Inoperative Components table in the front of the Terminal Procedures Publication. Jeff said in order to accomplish changes to the charts that have non-standard inoperative minima, there will need to be 8260 Order changes and subsequent procedure amendments. For those charts with standard inoperative minima, the other changes in the proposal can begin once the specification changes are approved. He stressed that these actions are still pending the safety review.

Rich Boll, NBAA, said a change is needed to the prototype charts in the recommendation based on this adjustment to the proposal. The header above the minima table in the current proposal states "ALS INOP VISIBILITY". It will need to be changed to say something like "NON-STD ALS INOP VISIBILITY". Valerie Watson, FAA/AJV-A250, agreed.

Jeff is hopeful the safety review can start in the first part of 2023. Pending the outcome, they will then proceed with Interagency Air Committee (IAC) specification changes and will begin planning for criteria and automation changes. Updates will also be needed in the Aeronautical Information Manual (AIM), the Instrument Procedures Handbook and the Chart Users' Guide.

**STATUS: OPEN**

**ACTION:** Jeff Rawdon, FAA/AFS-420, will report on the safety review of the IAP Chart Modernization Working Group Recommendations.

---

**MEETING 23-01**

Jeff Rawdon, FAA/AFS-420, reported that Flight Standards completed a satisfactory safety review, with only one hazard found, which was deemed a low safety risk. He said the proposal is now clear to move forward.

Rich Boll, NBAA, [presented](#) a summary of the safety review conducted in March. He explained that the decision was previously made not to publish standard inoperative minima adjustments on the charts that are found in the Inoperative Components or Visual Aids Table. Only non-

standard adjustments that are currently captured as briefing strip notes will be shown in the minima block. When inoperative component minima are published, the title for the column of the minima block was proposed to be “NSTD ALS INOP VISIBILITY”. The safety review did not find this to be a hazard, but determined it could be a source of pilot confusion. Rich said the proposed change is to explicitly state, “FOR ALS INOP VISIBILITY SEE INOP COMPONENTS AND VISUAL AIDS TABLE”. There was a lot of discussion regarding how best to word the title for the inoperative minima in order to reduce the confusion. Jennifer Hendi, FAA/AJV-A250, and Rich agreed to work on the wording of the title offline and consult with the workgroup if necessary.

Steve Madigan, Garmin, said he thinks adding the inoperative minima table only in non-standard cases sets a bad precedent. He thinks the FAA should always publish the inoperative component minima or not do it at all. Rich said he understands that concern, but says he does not think the FAA can accommodate that at this time. He is hopeful that, in the future, all the inoperative component minima will be published on the charts. Jeff Rawdon explained that the Instrument Flight Procedures (IFP) team does not have the resources to publish all inoperative minima at this time since these changes require a procedure amendment. He said that does not mean that it cannot happen in the future. Jeff stressed that only publishing the non-standard minima in the table was not deemed to be a hazard in the safety review. Jennifer said that insisting on including all the minima would be a deal breaker for this proposal. The FAA still sees the advantage of moving forward with this proposal since it removes the lengthy notes from the briefing strip. Krystle added that including all the minima is not off the table completely, but this is where we need to start.

Mike Stromberg, UPS IPA, said he agrees with moving forward with the proposal in order to get rid of the notes and hopes that we will look into providing the full table down the road. Rich said maybe in the future automation will make this process easier. Jeff agreed but said IFP can only commit to what it has resources for today.

Jennifer summarized the discussion. She said once the minima titling is determined, she will work with Krystle to begin drafting the specification changes necessary to implement this proposal on IAPs. Concurrently, the Flight Procedures and Airspace Group will begin investigating the criteria updates that will be necessary.

Jeff Lamphier, FAA/AJV-A240, reported on the Airport Diagram piece of the Chart Modernization proposal. He explained that in order to support the simplification of the airport sketch, the content of the Airport Diagrams needs to be expanded to include NAVAIDs and runway and approach lighting information. He said that the Requirement Document (RD) 848 for the changes on the Airport Diagrams has been approved and a [Charting Notice](#) was issued. The changes will begin with the 5 October 2023 publication cycle. Dan Rooks, FAA/AJV-A242, showed [examples](#) of the Airport Diagram changes.

Brent Walker, FAA/AJV-A242, said that currently, the only place to get the landing direction indicator is on the airport sketch that is included in the Chart Supplement. He said there is a proposed IAC specification change in process that would also add landing direction indicators to Airport Diagrams. He pointed out the landing direction indicators that were included in the prototype.

Rich asked if the plan is still in place to require an Airport Diagram for every airport with a public-use Instrument Approach Procedure (IAP). Jennifer said yes and noted the FAA will not

make any chart modernization changes to an IAP until it has a published Airport Diagram and that all changes will be coordinated.

#### **STATUS: OPEN**

**ACTION:** Rich Boll, NBAA, will report on the revised naming of the IAP Chart Modernization minima titling.

**ACTION:** Jennifer Hendi, FAA/AJV-A250, and Krystle Kime, FAA/AJV-A222, will begin drafting an Interagency Air Committee (IAC) specification change for the IAP Chart Modernization recommendations.

**ACTION:** Jeff Rawdon, FAA/AFS-420, will report on the Flight Procedures and Airspace Group investigation of criteria updates necessary to implement this proposal.

**ACTION:** Jeff Lamphier, FAA/AJV-A240, will report on the implementation of the Airport Diagram Modernization effort.

#### **MEETING 23-02**

Rich Boll, NBAA, presented [prototypes](#) that include the revised titling for the inoperative components minimums table based on the discussion at the last ACM. Krystle Kime, FAA/AJV-A222, explained each of the prototypes. She stated that if the inoperative minimums are standard and the table in the front of the TPP should be used, the header will read “FULL COMPONENTS (FOR INOP COMPONENTS SEE INOP COMPONENTS OR VISUAL AIDS TABLE)”. If there are “non-standard” inoperative minimums, i.e., currently a briefing strip note, the headers will read “FULL COMPONENTS” and “INOP COMPONENTS” or “INOP ALS #INOP TDZ or RCLS” (ORD example). If there is no Approach Lighting System at an airport, there is no header.

Steven Madigan, Garmin, said he still thinks adding the inoperative minima table only in non-standard cases is a bad idea. He thinks the FAA should always publish the inoperative component minima or not do it at all. Rich said he understands that concern but said the FAA cannot accommodate that solution at this time. He is hopeful that, in the future, all the inoperative component minima will be published on the charts.

Jeff Rawdon, FAA/AFS-420, reported that when Flight Standards worked on this solution with the Instrument Flight Procedures team, the IFP team could only commit to chart the inoperative components that are currently documented as notes. If adjustments are standard, the FAA cannot commit to showing them differently, at least not at this time.

Diane Adams-Maturo, FAA/AFS-420, said this change would need to be explained in all the documentation. She has concerns it will be implemented slowly and in an inconsistent way. Rich said pilot practices will remain the same. Currently pilots must go to the inoperative components table. For non-standard minima, the proposal is that they will be documented in the table. We are not changing practices, just the location of the data, as well as eliminating the mental math. Diane said she wants everyone to be aware of the amount of work involved in this change.



Bill Tuccio, Garmin, said this is a move in the right direction, but thinks the minima title “INOP COMPONENTS” is not specific enough. He thinks the charts need to be clear about what components are being referred to. Rich asked if we could list what the inoperative component is. Bill suggested using “INOP ALS” as the title instead. Krystle and Jennifer Hendi, FAA/AJV-A250, said that is what was presented at the last meeting, and this group decided we needed something more generic than ALS to cover everything.

TJ Nichols, FAA/AFS-420, thinks there is enough clarity about the proposed solution, so the next step would be to figure out what the agency needs to do to react. This includes figuring out the scope of the project and then setting priorities. Jeff agreed and said the Flight Procedures and Airspace Group is continuing to investigate the criteria updates necessary to implement this proposal. He explained the entire Chart Modernization proposal went through a safety review a little over six months ago. The titling of the table was identified as an issue and that is what we are trying to solve now.

Aaron Jacobson, Boeing/Jeppesen, says he is fine with this solution if “INOP COMPONENTS” means the same on every chart. Otherwise, he thinks the table should be broken out by component. He then asked how this will be sourced. Krystle said the inoperative components minima will need to be sourced on the FAA 8260-3 forms and this title would need to be on the form as well. She said on the current form this information is sourced as a note, and on future forms it would be moved to a minima table. Aaron asked if we need to list the specific inoperative components in the title. Jennifer pointed out that the criteria for the note is currently written as “FOR INOP ALS” so she assumes it will continue to be written the same way. Rich said that seems to be what ACM participants want. Mike Stromberg, UPS-IPA, agrees that saying only “INOP COMPONENTS” is bad since it doesn’t tell you which inoperative components are included. He thinks saying “INOP ALS” is better. Bill said he thinks if one non-standard inoperative component exists, then all of them need to be listed. Krystle summarized and confirmed that the ACM audience supports using “FULL COMPONENTS”, but the titling for the inoperative minima needs further discussion.

TJ asked if the computations to determine what goes into the new inoperative minima table will be the same as what is done for the current chart note. Jennifer said the computation on the new form will be different. The current notes say something like, “increase the visibility by 1.5 miles” and then the pilot must go to the table in the front of the TPP to do the calculation. The new table will list the calculated new visibility, eliminating the need for mental math. TJ summarized that these changes will involve changing FAA Form 8260.3 and FAA Order 8260.19, and updating automation to calculate the new visibility values. Jeff agreed and said that is consistent with what has been briefed in previous meetings. Diane emphasized that form changes are very difficult and follow an intense process. Dan Wacker, FAA/AFS-420, cautioned the chart changes are a good concept, but reminded the audience that this change will be day forward and will take many years to complete.

Jennifer reported she and Krystle have started working on a change to Interagency Air Committee (IAC) specification 4 to capture Chart Modernization. It is a large change and will require a complete overhaul of IAC 4. Krystle said once the charting specification is complete, and criteria changes have been determined, her team can start applying changes to charts that don’t have ALS. Dan emphasized that changes to the charts should not begin until the criteria changes are through coordination.

Jeff Lamphier, FAA/AJV-A240, provided a summary of the progress of the Airport Diagram Modernization effort. He explained that the content of the Airport Diagrams is being expanded to

the include NAVAIDs and runway and approach lighting information in preparation for the skeletonized sketch planned for IAPs. He said his team has started implementing the changes and are working them day-forward. He said he anticipates that will take 15-20 cycles to fully implement the changes. Jennifer said his action item can be closed.

## **STATUS: OPEN**

**ACTION:** Rich Boll, NBAA, will report on the revised naming of the IAP Chart Modernization minima titling.

**ACTION:** Jennifer Hendi, FAA/AJV-A250, and Krystle Kime, FAA/AJV-A222, will report on the status of the Interagency Air Committee (IAC) specification change for the IAP Chart Modernization recommendations.

**ACTION:** Jeff Rawdon, FAA/AFS-420, will report on the Flight Procedures and Airspace Group investigation of criteria updates necessary to implement the Chart Modernization recommendations.

## **MEETING 24-01**

Rich Boll, NBAA, began the [briefing](#) by highlighting the outstanding ACM discussion concerning the titling of the instrument flight rule (IFR) minima when non-standard inoperative component minima are published. He explained that after further discussion following ACM 23-02, it is proposed that there will be no titling when the standard adjustments apply. When non-standard adjustments are published, the inoperative component will be listed in the title [Slides 4-7](#), i.e., ALS, TDZ, or RCLS. There were no concerns with this titling expressed by the ACM audience.

Diane Adams-Maturo, FAA/AFS-420, asked how Notices to Air Missions (NOTAMs) will be handled. Rich replied that now that we know how the charts are going to look, we can begin the necessary updates to FAA Order 8260.19 and investigate the NOTAMs to make sure that is covered.

Jennifer Hendi, FAA/AJV-A250, reported that the necessary changes to Interagency Air Committee (IAC) specification 4 have been drafted, however, it will be on hold until the criteria and form changes are determined.

Jeff Rawdon, FAA/AFS-420 informed the group that his responsibilities in the Flight Procedures and Airspace Group have shifted and his role of working on topics related to charting has been reassigned to Vic Naso, FAA/AFS-420. Vic agreed that the action for the Flight Procedures and Airspace Group could be given to him.

Jennifer summarized the discussion and said that the work of the Instrument Approach Procedure (IAP) Chart Modernization workgroup is now complete. All remaining actions related to the implementation of the criteria and charting specifications are actions for the FAA.

## **STATUS: OPEN**

**ACTION:** Vic Naso, FAA/AFS-420, will report on the FAA Order 8260.19 updates necessary to implement the IAP Chart Modernization recommendations.

**ACTION:** Jennifer Hendi, FAA/AJV-A250 will report on the status of the IAC Specification change for the IAP Chart Modernization recommendations.

---

## **MEETING 24-02**

Victor Naso, FAA/AFS-420, reported that he has been working to identify the criteria and form updates that will be necessary to accomplish the IAP Chart Modernization changes. He said he has determined that updates will be necessary in FAA Orders 8260.19 and 8260.3, the Aeronautical Information Manual, the Instrument Procedures Handbook, the Terminal Procedure Publication, the Chart Users' Guide, and the Airman Certification Standards. Jennifer Hendi, FAA/AJV-A250, asked if he is at the point yet where he can share the draft criteria changes. Victor said it has not progressed to that point yet.

Jennifer then stated that she is holding off on processing the needed specification changes until the criteria is closer to completion. Jeff Rowden, FAA/AFS-420, asked if it is necessary to wait for the criteria changes if we know the desired end state. Jennifer replied that a draft of the specification changes was initially worked, however, the timeline for the criteria updates is unknown, so it doesn't make sense to move forward with the specification changes until the timeline is known.

Rich Boll, NBAA, asked for assurance that this initiative is going to move forward. Jennifer replied that she does not anticipate any roadblocks at this point. She pointed out that the IAC specifications are shared with NGA and all changes require approval, so there is still work to be done, but hopefully nothing that will derail the project. Rich suggested that since this sounds like it may be a long-term process, he would be comfortable moving it to a briefing item at this point. Jennifer said rather than a briefing, she would like to add a new Action Pending section to the agenda. That way a full recap does not have to be provided at every meeting, but there will be an opportunity to provide an update when progress can be reported.

Dan Wacker FAA/AFS-420, stated the safety review had only been completed for the chart changes, not for the criteria changes that will be needed. That will have to be accomplished and then the order changes will all need to go through coordination, so this effort is going to take time.

## **STATUS: OPEN - ACTION PENDING**

**ACTION:** Vic Naso, FAA/AFS-420, will report on the FAA Order and pilot guidance updates necessary to implement the IAP Chart Modernization recommendations.

**ACTION:** Jennifer Hendi, FAA/AJV-A250 will report on the status of the IAC Specification change for the IAP Chart Modernization recommendations.