AERONAUTICAL CHARTING MEETING
Charting Group
Meeting 23-02 – October 24-26, 2023

RECOMMENDATION DOCUMENT

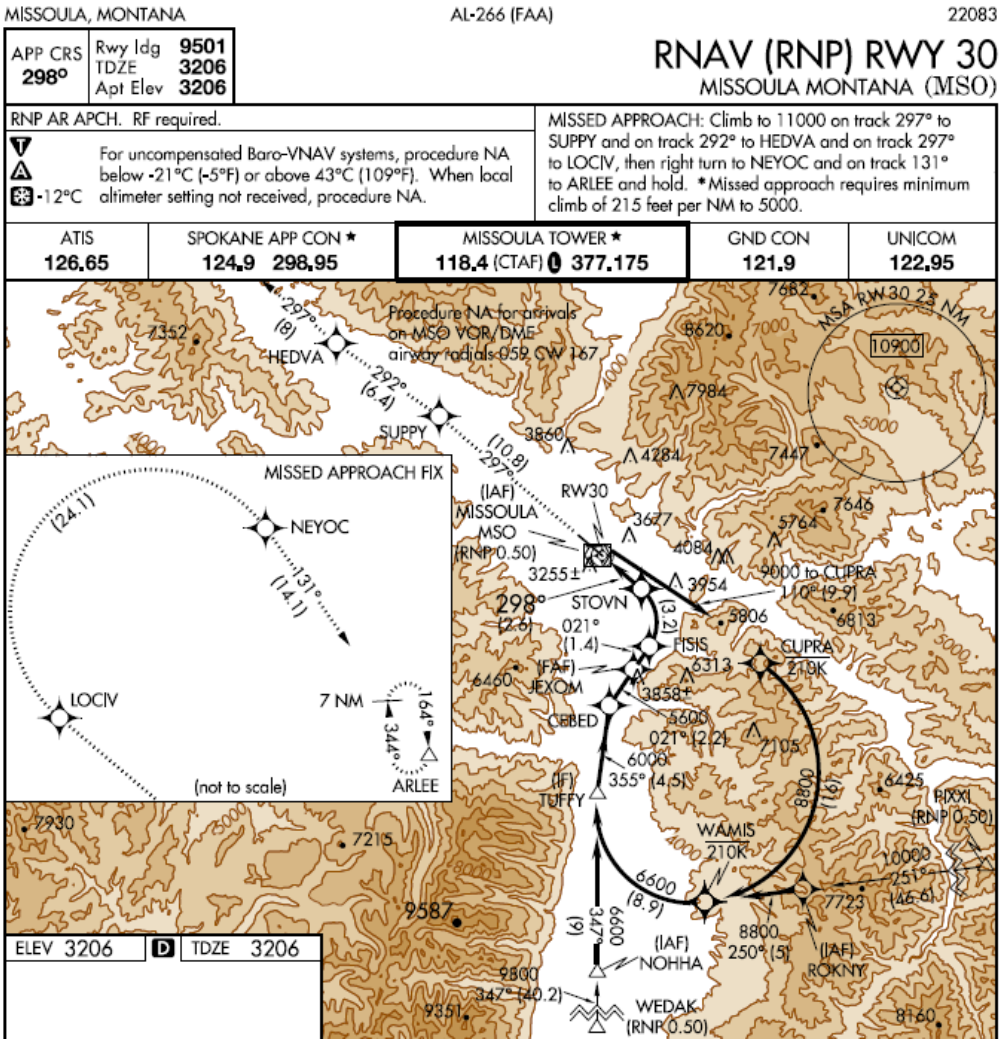
FAA Control #23-02-380

Subject: Modification of contour depictions on Instrument Approach Procedures (IAP) charts

Background/Discussion:

Terminal Charting would like to propose a change to the depiction of contours on IAP charts. As charts become more complex, the current depictions of contours on IAP charts, especially ones that are heavily congested, introduce clutter that obstructs procedural data and makes the charts difficult to read and understand.

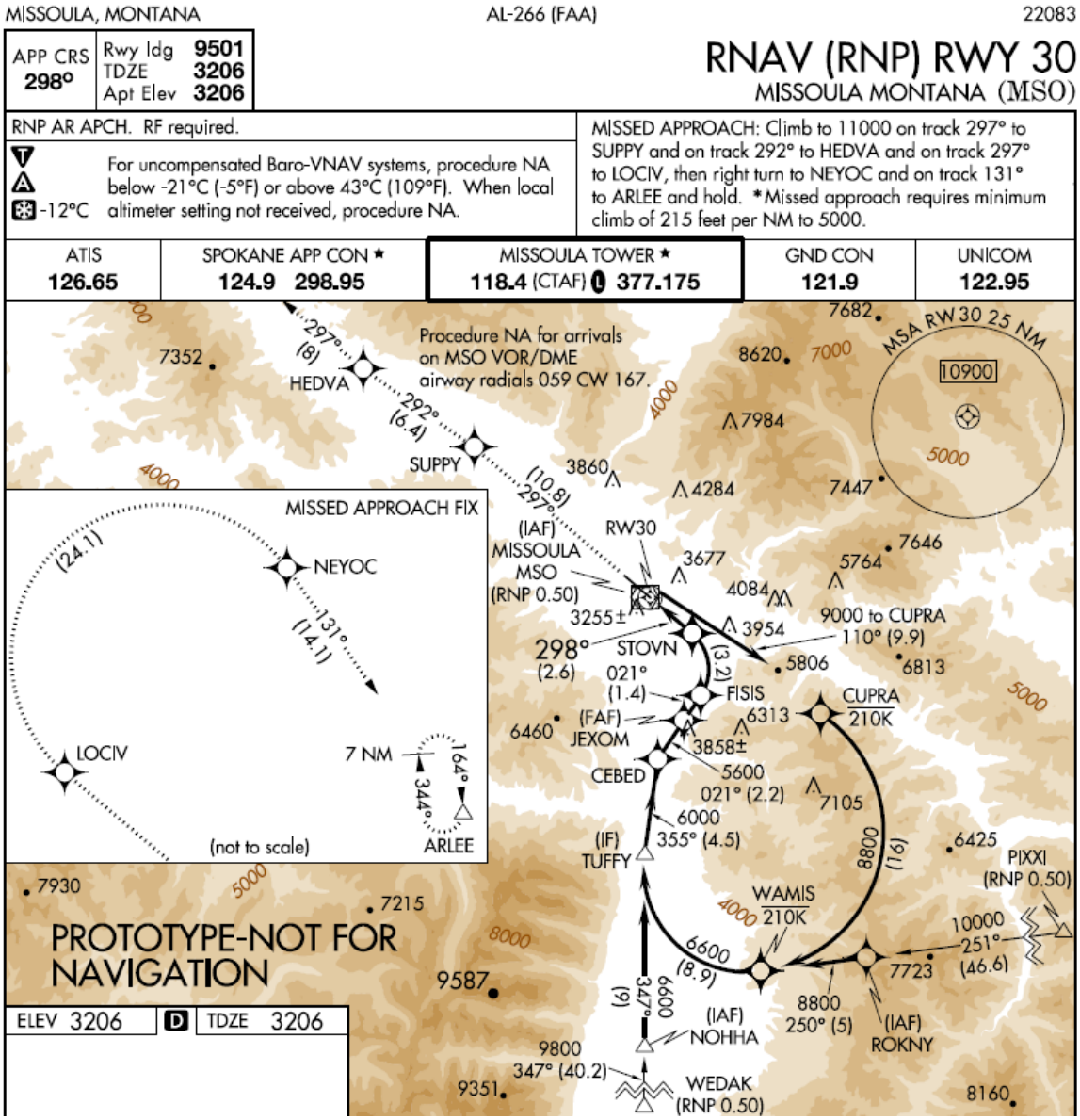
- Example of current depiction of contours on MSO RNAV (RNP) Rwy 30:



Recommendations:

On IAP charts that require terrain, Terminal Charting proposes the removal of the contour interval lines to enhance the readability of the chart while preserving the contour intervals themselves.

- Example of proposed changes to contours on MSO RNAV (RNP) Rwy 30:

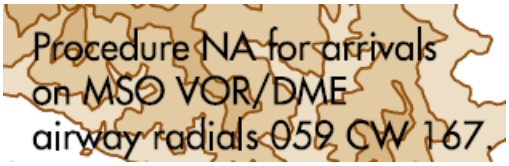


Benefits:

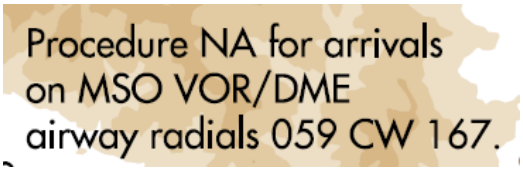
1) Would adoption of the recommendation prevent or reduce the likelihood of occurrence of accidents or incidents?

   Adoption of the recommendation would make the charts easier to read and showcase procedures and obstacles with greater clarity, thereby reducing the possibility of accidents or incidents. The below examples show a side-by-side depiction of MSO VOR/DME arrival note on the planview between the same chart (MSO RNAV (RNP) Rwy 30):

   With interval lines:



   Without interval lines:

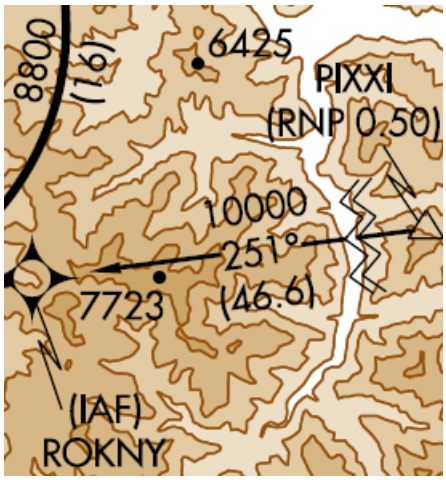


   More examples of targeted cluttered areas:

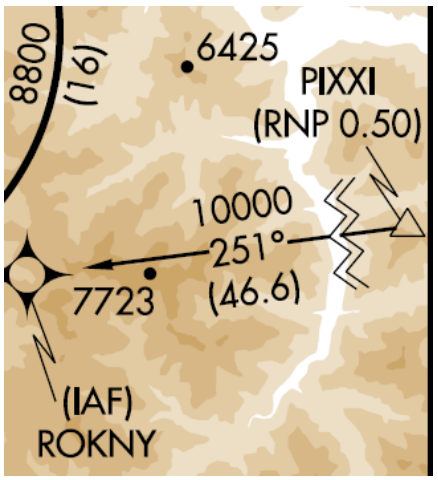
   With interval lines:

   Without the interval lines:

   With interval lines:



   Without interval lines:



On some of the examples above, it is very difficult to even read the names of fixes or discern the routes on the current charts. Not having the interval lines depicted makes it significantly clearer to read the same information.

2) Would adoption of the recommendation mitigate a known or potential safety hazard?

   Yes, Aeronautical Information Services has received many queries and concerns that the contours reduce the legibility of procedural data on the chart.

3) Would adoption of the recommendation resolve a known or potential issue creating operator or Air Traffic Control system errors?

   Unknown.

4) Would adoption of the recommendation increase operational or system efficiencies?

   Yes, not charting the contour lines removes a step during the contour creation process for Terminal Charting. The proposed removal on the interval lines will also streamline automation efforts currently underway.

5) Would any additional benefits be recognized by adoption of the recommendation?

   Unknown.

Please fill out the information following with as much detail as possible. Answers to the questions in the benefits section are important as they will help to determine the usefulness of the proposed recommendation. If the answer to a benefits question is unknown, please enter “Unknown” for that question. If a benefits question is not applicable to the proposed recommendation, please enter “Not applicable” for that question.

Comments:

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MEETING 23-02

Krystle Kime, FAA/AJV-A222, briefed Terminal Charting's proposal to change the depiction of contours on Instrument Approach Procedure (IAP) charts. As charts become more complex, the current depictions of contours on IAP charts, especially ones that are heavily congested, introduce clutter that can obstruct procedural data and make the charts difficult to read and understand. Terminal Charting has received customer complaints about the readability of charts that contain contours, particularly on the digital products. For these reasons, Terminal Charting proposes removing the contour lines. The shaded intervals and contour interval text will remain, but the lines between intervals will be removed. See the examples for before and after depictions.

Rich Boll, NBAA, thanked Krystle for bringing this recommendation and said he strongly agrees with this change. He pointed out that in the MSO example, it is almost impossible to read the procedural information on the chart, especially in low lights in the cockpit. He said he hopes Jeppesen will also make this change on their charts. Rich asked if charting had looked at the prototype charts in the various digital displays. He said they do not look the same when they are on paper as they do on digital displays in the airplane. Krystle said they have not investigated how the contours look on the digital displays.

Bill Tuccio, Garmin, expressed support for the change.

Steven Madigan, Garmin, thinks this change makes the charts look much better. He has no concerns and thinks it is an overdue change.

Doug Willey, ALPA, said he supports the change, however he also suggested looking at the night function of the electronic displays to see the impact of the removal of the lines.

Jim Deuvall, CAVU, thanked Krystle for the change and said he fully supports this change.

Tony Lawson, Hughes Aerospace, asked whether the Volpe Center has done any human factors studies on the various displays and electronic flight bags (EFBs). Krystle said she is not aware of any studies. She explained they are focused on print but agrees with looking into other ways the data is displayed.

Rich said, with the transition to EFBs, he thinks Charting should always check their products on digital devices, including in night mode as part of the decision.

Jennifer Hendi, FAA/AJV-A250, said we do have contacts at the Volpe Center and she will take an action item to reach out to them about how these changes will look in EFBs. If deemed acceptable, Terminal Charting can proceed with an Interagency Air Committee (IAC) Specification change to remove the contour lines from IAPs. Jennifer said she will also have to file an ICAO difference to Annex 4 since it specifically states elevations shall be shown by smooth contour lines.

STATUS: OPEN

ACTION: Jennifer Hendi, FAA/AJV-A250, will reach out to Volpe Human Factors to investigate how the removal of contour lines looks in EFBs.

ACTION: Krystle Kime, FAA/AJV-A222, will draft an IAC Specification change to remove the contour lines from IAPs if the removal is deemed acceptable by Volpe Human Factors.

ACTION: Jennifer Hendi, FAA/AJV-A250, will file an ICAO difference to Annex 4 regarding the removal of contour lines from IAPs.