AERONAUTICAL CHARTING MEETING
Charting Group
Meeting – October 28 - 29, 2020

RECOMMENDATION DOCUMENT

FAA Control #20-02-345

**Subject:** Wrong Surface Hot Spots and Surface Hot Spot Standardization

**Background/Discussion:**

After numerous wrong surface events with some being potentially catastrophic, this is one of the FAA’s Top 5 Safety Issues.

After numerous internal discussions within the FAA and external Aviation stakeholders, we have recognized the safety risk in the National Airspace System (NAS), associated with a wrong surface alignment and have collaborated on mitigations to address this risk.

This proposal standardizes both surface based and wrong surface hot spots on the Airport Diagrams. A Safety Risk Management Panel (SRMP), was conducted in January 2019. Subsequently a working group of internal and external stakeholders to include Runway Safety, Aeronautical Information Services, Flight Standards, Airports, Air Traffic, NATCA, NBAA, ALPA, RAA and NAFI.

The workgroup members shared the process with external stakeholders and this proposal is the result of their feedback. All members of the workgroup have expressed complete buy in on the proposal as written.

This working group has addressed the standardization of symbology on the airport diagrams to include both surface based and misalignment risk hot spots. In addition, the group addressed concerns brought up during the panel on adding information to the Approach Plates. As a result of the Approach plate addition a NEW Arrival Alert page was created to highlight those approaches to a particular airport that have been problematic.

**Recommendations:**

- Standardize both surface based and wrong surface hotspots.
- Implement three shapes as part of the standardization.
  - Cylinders to represent Wrong Surface Hot Spots
  - Circles or Ovals to represent Surface Based Hot Spots, depending on the size and shape of the area of the confusion.
- Implement the inverted MR on the Airport Diagram in the top left corner to indicate there is a misalignment risk potential.
- Implement the MR on the Approach Plate in the sketch view.
- Define the MR in the Charting Specifications to address a potential for a misalignment risk and points to more information.
- Implement a new Arrival Alert page which aids the pilot in a visual reference of a particular approach.
- Outreach and Education will take place prior to implementation to include the following:
  - Single Topic Video
  - Briefings to Industry stakeholders and Stakeholder Webinars.
  - Presentation to the National Association of Flight Instructors (NAFI)
  - Flight Standards FAAST blasts
  - Webinars
- Proposed implementation in December 2020.

Comments:

PowerPoint Presentation is available.

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MEETING 20-02

Giovanni Dipierro, FAA/AJI-141, provided a briefing on new recommendations regarding hot spot symbolization depiction when related to surface misalignment risk, publication of Arrival Alert pages in the Chart Supplement regarding wrong surface risk and the addition of a “MR” (for Misalignment Risk) icon to approach charts. He began his briefing by providing some background and describing the current definition of a hot spot as published in the Chart Supplement and the Terminal Procedures Publication. He said that hot spots today are drawn using varying shapes in order to fit the area of concern and asserted this has resulted in pilot confusion. A workgroup was formed to establish more standardized symbology for existing hot spot depictions on airport diagrams. Giovanni then provided some statistics on wrong surface arrivals and departures (Slides 6-8). He reported that from 2016 to 2020, there were 1,285 wrong surface arrivals and 851 wrong surface departures documented. The majority of these events were attributable to general aviation (GA) operations and took place during Visual Flight Rules (VFR) conditions.
Giovanni then explained the changes recommended by the workgroup. The group recommended that surface-based hot spots be depicted with a circle or an ellipse symbol and further recommended that a misalignment risk hot spot designation be added and depicted by a cylindrical symbol. He then showed examples of airport diagrams with the current and the proposed symbology. He proposed that when a misalignment risk is identified, a hot spot locating it be added to the airport diagram (with corresponding explanatory text of the hot spot), an Arrival Alert page be published in the Chart Supplement and that a negative “MR” icon be added to the sketch area of the Instrument Approach Procedures (IAPs) for the subject airport. The “MR” symbol on the approach charts is intended to serve as a cue for users flying that approach to look for the Arrival Alert page in the Chart Supplement and be aware that there is a potential for misalignment risk. He then provided a list of airports proposed to be updated with designations of misalignment risk hot spots. Giovanni explained that outreach and education is planned to ensure pilots fully understand the charting changes.

John Moore, Jeppesen, asked if the decision to move forward with these changes has already been made. He also asked if the Safety Risk Management Panel (SRMP) conducted in November of 2019 has been completed. Giovanni said yes, the SRMP had been completed. John then suggested that in the future, proposals be made at the ACM to get input before subsequent decisions are made. He then explained that according to the published definition of hot spots, they are designed to be used for surface operations. He said this is not the appropriate place for wrong surface landing information. Giovanni said this is not a new concept, wrong surface hot spots have been on the charts for a long time. He said the only thing that is new is the addition of the MR symbol on the IAP. Valerie Watson, FAA/AJV-A250, agreed that the FAA may have published some wrong surface landing risk hot spots, but reminded the group that in discussion at ACM 18-02 (RD 18-02-326) it was decided, with concurrence by Cheri Walter from Runway Safety, that those were published incorrectly and that the FAA should not be charting a landing risk on an airport diagram. At ACM 18-02 the Airport Mapping Team took an action to coordinate with Runway Safety to correct the verbiage in the errant entries. Valerie voiced that these errant entries should not serve as a precedent to the publication of wrong surface landing or arrival risk on FAA-produced airport diagrams. She emphasized that because the airport diagrams are surface movement charts, there is no expectation that pilots will be looking at the airport diagram for landing runway information. She voiced that, in her opinion, charting on a ground movement product would do little to mitigate a landing risk. Valerie clarified that alerting GROUND traffic that certain taxiway/runway surfaces might be mistaken is legitimate, but claiming that this mitigates a LANDING risk for arriving aircraft does not make sense. John also pointed out the differences in the revised symbols is very subtle and therefore may not be noticed by pilots. Valerie agreed.

Lev Prichard, APA, said that their safety team has been involved with this effort. He expressed their disappointment because Allied Pilots disagreed with this plan from the beginning and that dissenting opinions seems to have been disregarded. He emphasized that there can be a potential for misalignment anytime there are parallel runways or taxiways. He also agreed with Valerie that pilots use the airport diagram for taxiing and
not for landing. He also questioned the choice of airports on the list to be updated with the new symbology, because he does not see those as the airports that have the biggest wrong surface landing risk. He does not believe the root cause of a wrong surface landing has been properly addressed. In summary, Lev believes that this change will create more problems than it fixes. Giovanni said they are trying to find a way to heighten pilots’ awareness to this risk. He pointed out that wrong surface landing is an Air Traffic Organization (ATO) Top 5 issue. Lev said he recognizes the need to heighten pilots’ awareness to this problem, but this solution is not going to fix it.

Rich Boll, NBAA, asked if they are looking at before-and-after data to determine if the wrong surface landing risk hot spots that are published today are making a difference. Giovanni said they have no way to know if the addition of a hot spot is a mitigating factor. Rich then asked how the Arrival Alert page will be sourced to ensure that commercial chart providers also receive it for publication. Rich also pointed out that during the discussions at 18-02 there was concern expressed about the proliferation of hot spots on airport diagrams. He asked about the criteria that will be used to determine where hot spots are added and to ensure they don’t proliferate. Ray German, FAA/AJI-142, said the plan is for AJV-A to create the Alert page in coordination with Runway Safety and the airport. He said they are still in the process of developing the criteria for when a misalignment risk hot spot will be added. Tom Frakes, FAA/AJI-143, said they recognize they will need to limit the number published hot spots to the most critical risk areas. How this will be determined will be defined in the criteria. Rich stated that he may be able to support this initiative if he is able to first see the criteria that will be used and as long as the proliferation of hot spots is addressed. Chris Diggons, FAA/AJI-144, said that this effort is just one of many that Runway Safety is considering in an attempt to mitigate this problem. He said that not every parallel surface is a misalignment risk. The hot spot will only be shown at locations where these events are actually occurring.

Gary Fiske, FAA/AJV-P310, said that he supports this initiative. He said that wrong surface landings are a huge issue in the National Airspace System (NAS), and he supports using an existing resource to try to mitigate the problem.

Heidi Williams, NBAA, stated that she agrees with Lev and Valerie’s earlier comments. She said NBAA participated in the SRMP and said that they did not concur or non-concur, but recommended that the ACM is the appropriate place to work the proposal. She said she has been part of many SRMPs for wrong surface events and not once has the chart been looked at to mitigate the risk. She disagreed that this is a surface issue. She emphasized that concerns are being voiced by industry that need to be considered. Giovanni said that they are surface events, because that is where the incident occurs. Valerie reiterated that the airport diagram is a ground movement chart and there is no expectation that a landing pilot would be looking at the diagram for misalignment risk.

Joe Lintzenich, FAA/AFS-410, Contract Support, stated his agreement with Lev’s points and said it is better to train pilots than to put more clutter on the chart.
Bruce McGray, FAA/AFS-420, stated that there has been no data that has been presented that demonstrates adding a hot spot mitigates the risk to landing aircraft. He also said that adding clutter to the chart should not be part of any solution. Chris responded that they have recently begun tracking the effectiveness of hot spots.

Jim Spencer, NGA, noted that there was no data presented regarding the military. He recommended that Runway Safety solicit military input before adding something new or changing the symbology on a significant number of charts. He asked for the justification for changing the symbols and agreed with previous comments that it would not make a difference to pilots. Giovanni said that was the consensus of the workgroup in order to standardize the symbols for consistency across charts.

Jim McClay, AOPA, commented that it would be valuable to carry this discussion forward in this arena, to continue to look at this proposal and also to look at other alternatives to mitigate the wrong surface landing issue.

Valerie emphasized that it is understood by all that wrong surface landing is a huge and important issue. The questions being raised here are whether or not this proposed solution is appropriate and would solve the problem. She asked if a copy of the SRMP final report could be shared with the audience. Giovanni agreed to share the final report with Valerie so that she can in turn share with the ACM audience.

Gary McMullin, Southwest Airlines, stated that this is an important topic, however when he read the report, he had serious concerns about the effectiveness of the proposal in mitigating risk for arriving aircraft. He asked if pilot input was part of the SRMP because he, on behalf of Southwest, does not see that these proposed changes will have any positive mitigating effect. He stated Southwest does not agree with moving forward with these recommendations. He suggested that a new workgroup be formed that includes pilots to come up with a proper solution. Giovanni responded that many pilots groups were included in the SRMP.

Bruce McGray stated that there should be follow-up at future ACMs before this proposal moves forward. He said that the SRMP overlooked the concerns of the pilots on the panel.

John Moore, Jeppeson, asked what will be done with the feedback received at this meeting. Giovanni said that he would take the ACM feedback to his management and to the workgroup and discuss the next steps. He said that these specific proposals are not a “done deal” but emphasized that doing nothing is not an option.

Michael Stromberg, UPS, said that while doing nothing may not be an option, doing the wrong thing isn’t going to help the problem and that it is more important to come up with the right solution. He stressed that there needs to be data that demonstrates that a solution will have a positive effect before pilots will support that solution.
Calvin Lott, FAA/AFS-220, stated that landing runway incidents are a navigation error that should be solved through pilot training.

Valerie pointed out that legal liability needs to also be considered. She pointed out that there are hundreds, perhaps thousands, of airports in the NAS that have parallel surfaces, so the first thing that is needed is strong, clear criteria that designates what constitutes a misalignment risk. Waving a red flag at one airport and not at a similarly configured airport could be problematic.

Valerie summarized the discussion and stated that there was consensus of the audience that wrong surface landing risk is a known issue that needs to be addressed. There was also a clear consensus of the audience that did not support the proposal presented here as an appropriate solution.

**STATUS:** OPEN

**ACTION:** Giovanni Dipierro, FAA/AJI-141, will take the ACM feedback back to Runway Safety management for further discussion and will report at the next ACM.

**ACTION:** Giovanni Dipierro, FAA/AJI-141, will provide the final Safety Risk Management Panel (SRMP) report to Valerie Watson, FAA/AJV-A250, for distribution to the ACM mailing list.