

NOA SID Design Working Group – Session 2
Meeting Summary
November 1, 2021

1. Introductions

| Name | Organization |
|-----------------------|---------------------|
| James Allerdice | ABCx2 |
| Tim Chambers | ABCx2 |
| Jason Schwartz | ABCx2 |
| Stavros Sidiropoulos | Vianair |
| Dimitrios Terzopoulos | Vianair |
| Susan Shipp | Montgomery County |
| Janelle Wright | Montgomery County |
| Paul Janes | Montgomery County |
| Bill Noonan | Montgomery County |
| Richard Hinds | DC |
| Ken Buckley | DC |
| Rich Roisman | Arlington County |
| Shari Merrill | Arlington County |
| Stephen Geiger | Arlington County |
| James Phelps | Fairfax County |
| Ken Hartman Espada | Montgomery County |

2. Review of meeting notes from Session 1

- Jim led discussion by providing a review of the Meeting #1 summary noting it is also available on the NowGen website. He asked participants to review the meeting summary and provide feedback to ABCx2.
 - Bill Noonan asked if John Hansman’s (MIT) idea of aircraft turning to the next waypoint when they cross the threshold altitude was captured in the summary.
- Jim responded that it has been, however there is currently no [FAA] criteria for this and if requested it would delay implementation of the recommendations. Jim suggested that it could be asked that criteria such as this could be explored in the recommendations and opposed designing against criteria that doesn’t exist.

3. NADP1 vs NADP2

- The discussion continued on to the FAA’s NADP 1 (Close-In) and NADP 2 (Distant) noise abatement departure profiles. The question was asked if the appropriate profile (NADP1 vs 2) varies based on aircraft type.
 - Jason Schwartz, ABCx2, noted this is typically not the case, but that Vianair can analyze both profiles for multiple DCA aircraft types to confirm the best option.

- Jim's expressed concern with recommending different profiles based on aircraft type noting that the FAA would likely reject this because it will reduce predictability in maintaining separation between departing aircraft.
- Jim suggested the NOA/CWG recommend one or the other.

4. Discussion of DCA Performance Based Navigation (PBN) Implementation (7110.41A) Meeting

- Jim provided background about the meeting noting that FAA Order 7100.41A outlines the process for PBN implementation. The process includes meetings between stakeholders to determine the feasibility of procedures.
 - Jim stated that the opportunity to provide input during these meetings is a win for the NOA and CWG as this is not typical in the 7100.41A process.
- Jim described the highlights of the meeting. He noted that most of what was requested by the NOA/CWG was approved.
 - He mentioned that it is common for aircraft to shortcut from the STAND waypoint to FERGI.
 - He stated that the only issue is location of DARIC as it pertains to the leg length between DARIC and SUNNY.
 - Matt Fisher (FAA) agreed to reduce speed restriction allowing DARIC to be moved about a quarter mile NW, keeping it over CIA property.
 - Other leg-length and criteria issues close to the airport were helped by moving the final approach fix on the RNP from GREYZ back out to SUNEY, slowing the aircraft down the river so they may make turns better.
 - Jim stated that new criteria, specifically the extended visual segment which is applied to GPS approaches was discussed at the meeting, which allows these procedures to be public.
 - Jim said that FAA indicated the GPS procedure will be usable during poor weather.
 - Jim will provide additional information once FAA Flight Procedures [determines the approach minimums.]
- Jim mentioned that the FAA did not agree with the request to terminate TRUPS/FRDMM STARs on base leg at STAND. Regardless of this, aircraft must all eventually be cleared direct to DARIC, reinforcing the TAA concept.
- Janelle Wright, Montgomery County, asked a series of questions, the first one being if MWAA was represented at the 7110.41A Meeting.
 - Jim replied that Mike Jeck from MWAA attended.
 - She asked if the slower flying airlines would also be flying at a lower altitude.
 - Jim responded that they will not be lower and will cross DARIC at 2,700 ft.
 - Lastly, Janelle asked about FAA training and if/when these procedures are published what will the opportunities be for training.
 - Jim replied that training was recommended [by us in Recommendation #22] and yes, there will be training. He suggested that the CWG continue ask the FAA for information about controller training.

- Definitions for public and private procedures and extended visual segments were discussed. Jim will provide more details about the extended visual segment once received from the FAA. (Criteria still pending as of the writing of this summary)
- Next steps after the 7110.41A meeting were discussed. Jim highlighted the role of FAA Flight Standards in ensuring safety and the Flight Procedures office that will work towards publishing the routes as soon as possible (currently 10/5/2023) assuming that no other procedures with safety issues jump the line.

5. SID Design Discussion

- Jim started with the relocation of BEBLE which required the creation of a new waypoint.
 - REV-DAX is the new (notional) waypoint that was added between REVGE and ADAXE to better track over Potomac further [to the northwest.]
 - Jim explained that with the new procedure, after BEBLE aircraft would go straight to ALEEX, bypassing COVTO. After ALEEX the turn would take place over the interstate to the DOGUE waypoint.
 - Participants noted the benefit is to communities further out and that this change offers minimal benefit to communities closer in.
- Jim continued to discuss the new notional procedure. Jim noted the only way to get a sharper turn (to remain over the Potomac when departing) is to design an RNP-AR departure.
 - Matt has said that this cannot be implemented in the near-term and that the FAA was not ready to consider RNP-AR SIDs.
 - Discussion about the limitations of RNAV vs. RNP departures continued. Jim mentioned that the changes [in lateral path] between the current procedure and the proposed procedure will not produce discernable acoustic results. (i.e., acoustic changes will be less than 3dB.)
- Jim noted that the opportunity for improvement is minimal due to a number of constraints including the narrow and curvy path of the Potomac, the proximity of P56 Restricted Airspace, and flight procedure design criteria.
- Jim stated that changes can be made, reducing some of the overflight of residential areas, but improvements will be marginal, and in most cases, the acoustic changes will [not be discernable.]
 - Jim suggested that use of a map to show where waypoints can be moved may be important when explaining to the community that all options were explored, however changes in noise levels will be negligible.
- In addition to reviewing the lateral track geometry, ABCx2 will explore opportunities to increase altitude and/or climb rates to reduce noise.
- Ken Hartman asked if some of the items being discussed should be moved to a parking lot as team members may need time to think about what has been reported. Ken requested that the parking lot questions and images be sent to him and Jim via email.
 - A participant added a question for follow up to the parking lot asking if within the current FAA regulatory framework if altitudes can be modified to have leveling off

periods to have a more equitable noise distribution. (ABCx2 and Vianair will analyze the vertical profiles to determine if there are any other opportunities to reduce noise. This can only be accomplished between the surface and 5,000 feet MSL due to the Top Altitude of the SIDs being 5,000 feet.)

6. BEBLE TO AMEEE Segment

- Jim stated that changes to the procedure can be made to move the existing procedure, which is over residential areas, to over the interstate where it is assumed ambient noise levels are higher and population density is lower.
- The group discussed another option to maintain the existing procedure over residential development and adding the new path over the highway, thereby increasing dispersion, and reducing concentration.

Parking Lot Issues

NOTE- Parking Lot Issues will be fully discussed in the Final Report of the project.

DCA Design Comments from the NOA - 20211207

1. What climb profile do A/C currently use at DCA? – Janelle will ask American Airlines
2. Show an illustration of the distance between new and old REVGEW and BEBLE
3. Discussed NADP 1-2. ABCx2 recommends NADP-1 subject to what we find out in #1
4. Display Flight Paths in addition to routes
5. Fly Quiet Program – Quarterly Reviews of Conformance
6. What data did the FAA use to determine the placement of REVGE
7. Show Noise Comparison for the full route
8. Bill Noonan suggestion concerning the inner track location.

DCA Design Comments from the NOA - 20211101

Ken, below are my comments/items that might be considered as we move forward:

1. Explore the relationship between climb rates, noise production and the spreading out of noise over the course of the flight path. I know that the closer-in communities in Arlington have experienced greater noise since the early 2000's when climb rates rose sharply near the airport. I believe one of the noise abatement methods prior to that had been for planes to sort of level off after takeoff and then climb again near Chain Bridge.
2. Could ABCx2 provide a list of procedural changes that could affect aircraft noise above the 3 dB level? We already discussed that changing the mapped and expected flight paths will not result in noise reductions or decreases that are perceptible to the human ear. Assuming that the flight paths discussed yesterday will be more or less final, what other actions could result in a perceptible change. I think the point here is that we focus the investigation to those items that we could potentially have some control over.
3. Since I have been on the group, we have not discussed the first north-bound way point which is at the 395 bridge. Has this been discussed, or would a change in this point have an upstream effect on REVGE and BEBLE?

Steve

Under (6.b), would it be possible to more fully describe John Hansman idea? For example, when aircraft are flying the BEBLE-ALEEX segment, having them make their turn to the next waypoint (DOGUE) when they cross some set threshold altitude. Since A/C have different climb rates, they will cross the threshold altitude at different locations along the BEBLE-ALEEX segment. So, they will turn at different spots, creating some dispersion.

I realize that the implementation of this idea is a long-term goal, but it would be useful to document it for future reference.

—Bill