NATCA Safety & Tech Update
Week of August 14, 2017

AIRSPACE TECHNICAL DEMONSTRATION 2 (ATD-2): Pete Slattery (CLT) represents the membership as the Article 114 Representative for ATD-2. His report for is below.

During the month of July NASA conducted another ATD-2 Remote Demo for FAA and Industry personnel. These on-line meetings are held periodically and are designed to keep all stakeholders advised of the progress that is being made with the project. These meetings also keep interested parties generally informed about how the system is expected to work in the operational environment once it goes live in September of this year. I participated in this demo remotely and answered a few questions about how the system fit into our current way of doing things and how I thought it was going to help us do our jobs more efficiently in the future.

I was able to speak about the potential benefits of ATD-2 from a more informed perspective since the system has been in CLT tower for a few weeks now and we have been observing how it works and how it can be used in conjunction with current FAA systems to more effectively manage surface operations at this airport. The system has limited connection to other NAS systems currently and not all features have been enabled yet, but it appears that it will be a very powerful new decision support system for TMCs once it is fully operational. Ultimately ATD-2 should make TMC and controller's jobs less complicated and allow us to be more efficient.

Beginning on August 7th, NASA began providing training on the system to CLT TMCs and FLMs. ZDC TMCs will also receive training on the system prior to going live at the end of September. All training is scheduled to be complete by September 15th.

The way the ATD-2 system integrates with existing TBFM means that what ZDC TMCs will see on their TBFM displays will be the same as what they are already used to seeing with other IDAC/IDST facilities. Therefore the impact to ZDC operation should be minimal if not an improvement.

NASA is also training AAL Ramp personnel on their use of the Ramp Traffic Console part of the system.

Departure metering is a relatively new concept between FAA and ramp management personnel to manage airport surface operations. While different forms of metering have been used at many airports across the NAS over the last several years, the use of an automated metering system is a relatively new development. ATD-2 has been designed to emulate what is expected from an automated departure-metering program when the TFDM

system becomes a reality in the next few years. Using automation to meter departures will reduce the number of phone calls and other voice communications necessary to conduct a departure metering program thus allowing for a more efficient use of time and resources.

Finally, NASA Public Affairs personnel were in Charlotte tower and TRACON last week taking video and photos of CLT personnel using the ATD-2 system for a forthcoming informational video on the system. Interviews were conducted with NASA researchers, myself, and AAL ramp personnel for inclusion in the production.

As always, I will continue looking out for the best interests of TMCs and controllers as this research project progresses.

AIRSPACE: Jim Davis (PCT) is the National Airspace Representative for NATCA. Below are reports from the various airspace team leads and Mr. Davis

Florida Metroplex July 2017 Report
Florida Metroplex team had the following activates during the past month:
Participated in briefing Airport Authorities status of Florida Metroplex
Caribbean Group activates:
Participated in Caribbean Study update meeting with ZMA and ZSU
Participated in spectrum analysis for Caribbean Study
Participated in Telcons with Industry
Participated in numerous Caribbean, ZMA, ESA Teleconferences
Submitted by Greg Harris, Florida Metroplex NATCA Art 48 rep and Caribbean Lead

Las Vegas Metroplex
To date the Las Vegas Metroplex has been waiting on ZLA to provide support to our project. They have been held up due to staffing issues, as well as, wrapping up the SoCal Metroplex. We have begun discussions with them the past month or so. All the other affected facilities are in place and ready to go.

The plan for our project is to kick off with an Admin week and training for ZLA the week of August 28th at ZLA. Our schedule is in place to begin design work with the full team starting September 18th through early 2018. Up to this point we've been working primarily with L30 and LAS to develop RNP procedures and internal issues that only effect those facilities. We will be traveling to Oklahoma City next week to simulate that RNP work with AFS 460.

Submitted by Chris Thomas, Las Vegas Metroplex Article 114 Co-Lead

CSA PBN 2017-08-1

Major work in Central this month has revolved around waivers to mitigate new criteria that is causing many problems with procedure design and managing high level of tasks and workload to support community engagement activities

We continue to discuss and develop strategies and tools to help prioritize and quantify costs for each PBN project. As demands from VORMON increase, some PBN projects might be put on hold. Obviously, facilities that discover safety concerns will continue to be high priority.

As previously reported, the Austin-Bergstrom Airport project has been slipped one chart cycle to October 12, 2017. There are two procedures at Austin Executive Airport and the ZEEKK STAR (KIAH) that are also being worked for October. All procedures for the three airports have been flown by Flight Check and all were satisfactory (passed). The Waivers and Letters of Authorization have been reviewed by the Procedure Review Board, but several items have been returned to us for rework. We met with AIS to fully understand what the PRB is looking for but Flight Standards was not able to participate. We hope to have resolution on all items in time to not delay the publication. However, the chart date is at risk and another slip is possible. There are numerous items in the new criteria, which need to be re-evaluated, and until these items are corrected, PBN development at many sites will be more difficult. Our Industry partners have also expressed their concern with recent criteria changes. On a more positive note, Community Engagement activities for the Austin post-implementation amendments continue to meet the local needs and are on track to support the new publication date.

More sites are starting the decom process under VORMON. ZMP was briefed by several Operational Support Group personnel in May and the existing waterfall of navaids impacting ZMP was identified. We are currently preparing for the following VOR decoms in FY17: BRD, BTL, DDD, ENW, HRK, HUW, RIS, STE, & SYO. ZMP is also participating in discussions regarding potential Q-Route development that may involve ZDV, ZMP, ZAU, and ZID in the future.

Preparation for Community Engagement for the KSAT and KCMH projects is being planned and executed: In Central, the Community Involvement Team (CIT) has been stood up and includes the Co-Leads, OSG Environmental Specialists, and Airspace Redesign Manager. This team is working with Great Lakes and Southwest Regional Administrators, their Staff, local FAA facilities, and FAA Office of Communications. All involved are giving tremendous support for every level of this growing activity.

We just completed two Public Engagement Meetings in Columbus, Ohio. These public workshops presented the notional designs that have been developed and explained the Environmental process and PBN Development process to those who attended. Attendance was good and many questions were answered. Once the public comment period is completed, the full workgroup will reconvene and evaluate any areas of concern and determine

whether these concerns can be mitigated in some way. The next step will be for our Industry partners to fly the proposals in their Simulators. The full workgroup will then reconvene and evaluate the data.
Pre-Implementation activities for KABQ (RNP RWY 26) and ZMP (BRD Decom) have been completed and both facilities will implement the changes next week on the August 17 Chart Date.
Finally, meetings for the KSAT PBN Project and a number of Chicago Area PBN Requests are being scheduled. In San Antonio, we will meet with the Airport Authority to discuss what an appropriate Community Engagement Plan would be for them. We will also meet with the full KSAT workgroup to discuss how criteria changes are impacting the notional design work that has been done. In Chicago, there are numerous requests. We will meet and determine which requests will be included in the project. This scoping meeting will allow us to develop a clear mission and then reach out and engage the appropriate officials and communities.
Submitted by CSA PBN NATCA Art. 48, Brent Luna

Eastern Service Area (ESA) PBN July 2017
Capital Area Project DCA/BWI/IAD
Traveled to DCA and BWI to meet with the respective airport authorities on August 9th and 10th to discuss the upcoming design meeting. Bennie Hutto and John Belk joined us to help with the transition the local community roundtable concerns/request to the .41 PBN design process. The full working group (FWG) will begin looking at the request to amend procedures at all three airports beginning the week of August 23rd. The ESA community outreach team has been working with HQ on an outreach plan, which will be presented on August 15 to elected officials.
Cincinnati/Northern Kentucky International project (CVG)
The PBN team was scheduled to return to CVG in September but has delayed that meeting until the week of December 4th. It has come to our attention that the local airport authority and the Memphis Airport District Office (ADO) are working a separate environmental study for runway 18R and 36L. We are working to coordinate efforts.
VOR MON IFP Working Group
I attended the VOR MON IFP WG meeting July 18-20th with John Vogelsang the article 114 rep. The primary concerns for eastern PBN was the flexibility in the MON waterfall and backfill overtime. Leonixa Salcedo, the project manager, informed the group that the MON project now has overtime money. The project overtime (PROT) is available beginning in FY 18. This will allow us to move forward on multiple projects in eastern, such as PXT. MON waterfall schedules appear to be more flexible moving forward. The eastern PBN and MON teams will meet to coordinate and make adjustments to the MON waterfall.
Instrument Flight Procedures (IFP) Production Process
The eastern PBN Co-Leads were asked to attend the IFP Production Process WG August 1st-3rd to review the proposed validation phase. The Co-Leads

were joined by representatives from AFS and FPT. The tasking from the group was to take current request and run them though the validation phase proposal. We ran multiple current requests though the process and provided our feedback to the WG. The group has requested we continue work to refine the process and report back September 5th.
Projects publishing over the next few cycles;

8/17/17 MEM 11 SIDs, TEB RUUDY6 SID, JAX MARQO2 STAR
10/12/17 ORF RNPs, ZID Q39 & Q67, Cuba y-routes

Additional projects being worked;

PLB is VORMON generated – T705 between ZBW and NavCanada 2018 publication
ROA – RNPs, FEDEX request for safer operation
Projects on hold or waiting prioritization in eastern;
T-294 extension – ZTL request for TDG VORMON
TJSJ SIDs & STARs – Datacomm generated
ZME Q-routes – 8 new routes and 10 amended
ZME/MEM – FEDEX request to update OPD STARs & RNPs
RDU – on hold BFOT and TARGETS 5.2
PXT – VOR MON, BFOT issues
WRI – Multiple NAVAIDS VOR MON generated
BGR – RNAV STARs
BNA – facility request
NPA – RNAV SID & STAR for the military
ZBW – NavCanada T-route project
LGA – SIDs and RNPs, may fall under North East Corridor (NEC)

ACR- Atlantic Coast Route Program

Submitted by Bill Wise ESA PBN Article 114 Rep

<u>PBN and EoR 7/5-8/10</u>

7/5-7 In DC working on site at AJV-14
7/10-12 Attended MIT noise project meeting at the UPS Simulator facility in Louisville Kentucky. Simulator testing was conducted regarding MIT/Massport/FAA project to study options for reducing Boston Logan noise footprint
7/11 Participated in EoR telcon to discuss EoR next steps as related to TF procedures following ALPA objection to non-VNAV procedures. TF sites (Denver, Salt Lake, DFW) are on hold for further development under further notice
7/12-21 In DC working on site at AJV-14
7/17 Participated in EOR SRMD/DCP pre-brief. The purpose of this meeting was to brief AJT/AJI on the SRMP and pending DCP for Widely Spaced/Duals and Trips EoR.
7/19 Participated in VOR MON meeting at Tetra Tech. Briefing conducted on current and future state of VOR MON project

7/20 Participated in telcon for amendments to the LAS SITTI STAR. The procedure, published on 1/4/17, has runway transitions to 19L/19R but not all other runways causing questions and increased workload for controllers when flight crews do not know what to do. Determination was made that amendments will be handled by Metroplex and publication planned for February.
7/21 Participated in NATCA/AJV-14 collaboration meeting
7/24 Participated in Atlantic Coast Route and Northeast Corridor telcon
7/31 Participated in DCA Noise Roundtable meeting to brief the roundtable on the .41 process
8/1 Attended Florida Metroplex Planning meeting and Florida Metroplex Atlantic Coast Routes Briefing
8/2 Participated in Northeast Corridor procedures scrub
8/3 Participated in initial PBN Co-lead telcon to discuss Community Outreach Desk Guide
8/4 Participated in PBN Co-lead telcon with AJV-0 to discuss expectations for PBN Full Work Group on DCA/BWI procedures
8/10 Participated in Denver Metroplex TBO telcon

Phil Hargarten, PBN Rep/National EoR Rep

PBN/Metroplex Design and Implementation Lead Monthly Report – 8/10/17

Metroplex: Because of budget and funding concerns, there have been numerous budget drills conducted by the Metroplex program over the last several months. Because of the agency's self-imposed requirements for community involvement, the costs associated with this effort, along with the escalating environmental costs, on a project the size of Florida Metroplex has caused the project to be unsustainable. Several options for re-scoping Florida were presented to Lynn Ray (VP, Mission Support) on March 24 and currently we are working towards a Summit meeting on September 14 to re-engage facilities and present a strategy for moving forward. Post-implementation of SoCal Metroplex amendments is scheduled for October 2017, November 2017, and February 2018. We are currently in discussions regarding the appropriate time to close out the SoCal project.
Detroit/Cleveland Metroplex is still working towards a May 2018 implementation date but may move to the right due to environmental timelines. The CLT project will close out the week of September 12. The next Metroplex Leads meeting is scheduled for August 22-24 in Denver.
Funding issues has also caused us to look at other PBN projects as well, not just Metroplex. There has been much discussion around what to do with the Atlantic Coast (AC) Q routes. Part of the current Florida re-scoping options is to incorporate a portion of the AC Q routes. The AC Q routes may also be segmented with the northern routes (ZDC and north) and could possibly be

incorporated into the NE Corridor initiative or a stand-alone project with a dedicated set of Co-Leads.
The PBN office is currently working with Flight Standards (AFS), Aeronautical Information Services (AIS), Service Center Operational Support Groups (OSGs), Flight Inspection, and PASS on a workgroup to look at ways to streamline the Instrument Flight Procedures (IFP) development processes to improve the way we validate incoming IFP requests. This workgroup will also look at ways to better prioritize valid requests that aligns better with safety needs and the PBN NAS Nav Strategy. This workgroup kicked off on March 28 with a weeklong meeting in Seattle and just finished it's fourth weeklong meeting on August 4 in Atlanta. The timeline for completion of this work is TBD. Also, the document defining Industry roles and responsibilities on PBN workgroups and projects is still currently in draft status and is awaiting final approval.
Submitted by PBN/Metroplex Design and Implementation Lead Art. 114 Ed Hulsey

NATCA National Airspace Rep
A lot of personnel changes are happening in Mission Support and the Airspace Services division at FAA Headquarters, the changes taking place with the VP of Mission Support and the Director of Airspace Services will most likely affect how we do business moving forward. I look forward to developing a collaborative relationship with the new VP and Director as we develop new airspace and procedures for the NAS.
We continue to work with the FAA to deal with the changes surrounding community involvement. Our goal is to develop a usable guide that can be implemented consistently nationwide. The first draft was completed and our experts in the field will be meeting with headquarters personnel to make necessary changes.
Many of the PBN projects moving forward have moderate to severe funding concerns. Nobody has any answers as to what the budget will look like moving into October and we will most likely have to make some hard decisions moving forward as it appears we will not receive the proper funding to continue our implementations in a consistent manner. The NATCA Airspace Committee will be meeting next week.
Submitted by Jim Davis (PCT) NATCA National Airspace Rep.

AIR TRAFFIC PROCEDURES (AJV-8): Andy Marosvari (BOI) is the Article 114 Representative in the AJV-8 Office. Mr. Marosvari's update is below.

I have participated in two Safety Risk Management (SRM) panels during the last month that include:

- Changes to 3-7-2, Taxi and Ground Movement Operations that clarify clearances to vehicle operators on the airport movement areas and provide additional guidance for aircraft issued clearances to hold short of active runways.
- There are 44 countries around the globe that have registrations that begin with a numeral and 2 that have 7 alphanumeric registrations. The various automation platforms in the NAS do not process aircraft with registrations that begin with a numeral, forcing controllers to amend the data block using a letter as the leading character. Different facilities have used different letter combinations to track these aircraft. A change will make the letter "Q" the standard for those aircraft until software changes can be made to facilitate the tracking of these aircraft.
  Several changes to the 7110.65 are slated for publication in October 2017 and March 2018.
- The ability to assign properly equipped GPS aircraft the Minimum Obstruction Clearance Altitude (MOCA) along established airways where NAVAID reception and distance created artificially high Minimum En Route Altitudes (MEA). Previously, the MOCA was assignable only within 22 NM of the NAVAID or conditionally beyond that distance. This change removes the current conditions for GNSS aircraft since these aircraft do no rely on reception of the ground based NAVAIDS.
- Class G Airspace has been defined as any airspace that is not Class A, B, C, D or E and this definition fell short of defining our responsibilities as controllers. Although the majority of Class G or Uncontrolled Airspace above 1,200 AGL has been converted to controlled airspace, the definition in the 7110.65 did not provide sufficient guidance as to the separation requirements in uncontrolled airspace. This change defines Class G as "Uncontrolled Airspace" and reminds controllers that although flight through Class G is permitted as requested by the pilot, there are no separation standards within Uncontrolled Airspace. However, ATC still retains responsibility to prevent collisions between aircraft and must issue traffic advisories and safety alerts to those aircraft receiving services.
- Previously, the 7110.65 never defined the terms Chop and Mountain Wave, commonly used for ride reports on a daily basis in the NAS. At the suggestion of several controllers at various facilities, NATCA and the FAA collaborated on a change that would introduce definitions for these terms.
- The current guidance for Formation Flights is poorly worded and applied differently throughout the NAS. After a Memo was sent out confusing the issue even further, NATCA and AJV-8 worked on language that would clearly define both controller and pilot roles and responsibilities for Formation Flights, to include both join up and break up of these flights.
  I am in Washington DC a minimum of two weeks every month representing NATCA in the FAA Procedures office. Please don't hesitate to contact me at procedures@natca.net or 208-870-1621 if you have any questions, suggestions or comments.

Airport Capacity Decision Support Tool (ADEST): Kristen Laubach represents the membership as the Article 114 Representative for ADEST. Her report is below.

> There has been some progress with the Airport Capacity Decision Support Tool (ADEST) over the past months. The programmers completed a basic version of ADEST for 10 airports and these have been moved into a staging environment for testing. While testing we found problems with both the manual override and mile in trail functions of the program. These appear to have been corrected but the team continues to do more testing.
> The NOTAMS page also continues to have issues. Recently the page went blank and wasn't showing any NOTAMS or updates. This is being looked into.
> Once this basic version of ADEST is in working order the team will start collecting and inputting specifics from each airport.

Remote Radio Control System (RRCS): Corrie Conrad (PDX) is the RRCS Article 114 Representative. Ms. Conrad's report to the membership is below.

> RRCS Planned Activites:
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> - Complete RRCS OCT Report – August 2017
> - Submit Source Selection Official (SSO) Report documentation to RRCS SSO for review and approval – September 2017
> - SNA is the designated key site for the new RRCS procurement project

RNAV and PERFORMANCE BASED NAVIGATION (PBN): Bennie Hutto (PCT) is the Article 114 Representative for RNAV and PBN criteria work. Mr. Hutto's report for the membership is below**.**

> **AFS Criteria**
> Participated via telcon regarding criteria to establish a problem statement, proposed solutions, and common expectations on schedule for the 8260.3C STAR criteria revision team. During the telcon we focused on summarizing the issues, then developed a list of interests we have for any solution we adopt and then brainstorm possible solutions. The goal by the end of the telcon was to have a shared definition of the problem, at least three proposed solutions, and an agreement on priority/schedule. We agreed that a small group was required to work the issues, which would include personnel from NATCA, AJV-14, Industry, Flight Standards, and I also recommended that personnel from AJV-8 (NATCA/Management) being included since any change could have an impact of ATC requirements.
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> **Pilot Controller Procedures & Systems Integration (PCPSI)**

I was unable to attend the PCPSI meeting on July 18th and 19th as I was on annual leave, however Andy Marosvari (NATCA Procedures Rep) was in attendance. The following information was discussed during this meeting.

PARC PCPSI Obstacle Departure Procedures Recommendation

The Pilot and Controller Procedures and System Integration (PCPSI) workgroup made a discovery in conjunction with its work on Climb Via Phraseology. There is widespread confusion for both pilots and controllers as to when an Obstacle Departure Procedure (ODP) (to include Diverse Vector Areas (DVA)) would apply and the responsibilities for obstacle clearance for each group. Subsequent review of ASAP and ATSAP reports confirmed the confusion, and the ATSAP team actually put out a bulletin on the subject. In summary, there is an apparent disconnect in guidance to pilots in the Aeronautical Information Manual (AIM) and the guidance to air traffic controllers in JO 7110.65.

The PCPSI devoted substantial time reviewing and understanding the current guidance. The issue is most common when an aircrew is assigned a RNAV off-the-ground Standard Instrument Departure (SID) or conventional SID, and is subsequently given a heading to fly off the ground from the local controller that is not part of the procedure (effectively cancelling the SID). However, it is also common for a facility to assign a heading off the ground with no initial SID. By taking the crew off the procedure with the vector heading, the tower has now invoked Federal Aviation Regulation (FAR) 91.175 (f) (3), which states for Part 135 and 121 departure operations: "…No pilot may takeoff under IFR from a civil airport having published obstacle departure procedures (ODPs) under part 97 of this chapter for the takeoff runway to be used, unless the pilot uses such ODPs or an alternative procedure or route assigned by air traffic control." Although optional for Part 91 operators, it of course would also be a good idea for them.

Assuming a penetration of the 40:1 plane by an obstacle for the departure runway, there are four ways to comply with all engine obstacle clearance with this regulation:

1. Use the SID or another SID – obstacle clearance is ensured by the procedure and pilot is responsible for compliance (to include climb gradients)
2. Use an ODP– obstacle clearance is the responsibility of the pilot and must be complied with to ensure obstacle compliance
3. Use of a DVA- obstacle clearance is ensured procedurally though ATC assigned headings within the DVA.
4. ATC may invoke JO 7110.65 section 5-6-3 Vectors below Minimum Vectoring Altitude when prominent obstacles are displayed on the video map. Obstacle clearance is the responsibility of the air traffic controller. ATC has responsibility for obstacle clearance unless a DVA is published.

If a facility issues a heading off the runway (that is not part of a procedure), there are no readily available resources for the pilot to know if that heading was issued under 5-6-3, a DVA, or with an intention that the pilot could fly the ODP and then the heading. However, under current guidance the pilot

can fly an ODP without informing ATC (with the exception of a Visual Climb Over Airport (VCOA) ODP which requires ATC notification). This can create a contradiction in pilot/controller expectations for airports with complex ODPs that require a routing and holding pattern in busy airspace. Additionally, it is legal for ATC to issue a Graphic ODP (example SID name (obstacle)), however current ATC policy is to issue a "Climb and Maintain" clearance rather than "climb via", creating confusion as to whether the altitude constraints are cancelled (ATC cannot cancel restrictions on an ODP nor can they vector a pilot off an ODP once they are on the procedure.). Therefore, the PCPSI workgroup makes the following recommendations:

1. Control Towers and TRACONs can only issue a heading off the runway when prominent obstacles are displayed on the radar video map in accordance with 7110.65 5-6-3 Vectors below MVA. This should be clear in 7110.65. Pilots would be expected to know if a DVA exists and comply, or the gradient is standard (200 ft./nm) and ATC is responsible for terrain and obstacle clearance.
2. Explicitly inform all pilots of their responsibility, per §91.103, to check for ODPs and DVAs as part of preflight planning as last-minute clearances involving headings can be given.
3. Explicitly inform all pilots of their responsibility, per §91.123, to inform ATC if an ODP is to be flown instead of the clearance involving a SID or radar vectors.
4. Suggest a policy change for ATC assigned graphic ODPs for obstacle clearance to use a "Climb Via" clearance.
5. Guidance in 7110.65 and AIM to be updated to explain these changes. This should result in the expectation that ATC will provide obstacle clearance using vectors in accordance with 7110.65 section 5-6-3 or using a DVA. If the pilot determines that the DVA climb gradient is unacceptable, he/she should inform ATC prior to departure of the intention to fly an ODP with a lower gradient.

PARC PCPSI FEEDBACK REPORT JEPPESEN'S NEW "TO-SCALE" SID / STAR FORMAT by Ted Thompson, Jeppesen Corporate Technical Standards

COMPLEX CONSTRAINTS & INFORMATION BOXES

- Some Complex Procedures involve Complex or Conditional Constraints
- Complex or Conditional Constraints still require Combined Constraint Boxes
- Information Boxes remain on a number of Charts

UNDERLINE & OVERLINE – ALTITUDES & SPEEDS

- Underlines & Overlines for Altitude & Speed have been widely accepted and well received. Only a few queries were received.
- Compositional adjustments are being made to Spacing of text when necessary to show Altitude or Speed within an Information Box outline.

MINIMUM SAFE ALTITUDE ("Borrowed" MSA)

- On some RNAV procedures, for "borrowed MSAs, the origin or CenterPoint Waypoint may be Confused with other Waypoints used in the Flight Procedure.
- This is especially true if the location of the MSA WP happens to be on or near the charted flight tracks.
- In these circumstances, the MSA origin or CenterPoint (waypoint) will not be charted.
- Borrowing MSAs can introduce unintended complication, as described.
- Jeppesen has submitted a recommendation to the FAA Aeronautical Charting Forum for the FAA to consider the addition of MSA information as part of the procedure design consideration and inclusion on official FAA SID or STAR procedure source.

TERRAIN & OBSTACLE CLEARANCE INFORMATION

- The new depiction features Terrain and Obstacle Clearance information depicted in 3 forms;
    - Colored Terrain Contours
    - Grid MORAs
    - Minimum Sector Altitudes
- Feedback from some customers indicates that the combination of 3 different types of Terrain and Obstacle Clearance information is "a bit excessive" or "too much of a good thing".
- The decision to include all 3 types accommodated a range of customer input across the globe. Some operators favor one method over the others.
- The feedback is understood. No changes are anticipated.

SIDs & STARs COVERING HUGE GEOGRAPHIC AREAS

- Many U.S. Procedures Cover Hundreds of Miles Beginning-to-End (I.e. 200 - 300 NM from Enroute Terminus Fix to Runway)
- Areas of Complexity may Vary or Exist at Beginning, Common Segment, or End (Numerous or Complex Enroute, or Runway Transitions, or Complex Constraints)
- Scale of Chart based on Maximum Extent of Coverage vs. Area(s) of Complexity
- Some Scales are Comparable to Scales Typically used on Enroute Charts (I.e. 1 inch=30 nm)
- Scale, Size and Layout of Chart Contingent on Extent of Coverage & Complexity
- If Not Possible to Draw Entire Chart To-Scale, then Not-To-Scale Insets Required
- Information in Insets is Depicted Schematically is <u>NOT</u> drawn To-Scale

NOT-TO-SCALE (NTS) INSETS

- NTS Insets are NOT Geo-Referenced
- NTS Insets do NOT include Terrain Data or Topography
- NTS Insets do NOT Support Own-Ship Depiction (when available, otherwise)

TRANSITION BETWEEN TO-SCALE PLANVIEW & NOT-TO-SCALE INSETS

- Difficulties have been attributed to user habits related to Electronic Displays, namely the tendency to "Zoom-In" to a part of the chart, then being surprised when encountering the border or neat line around the NTS Inset.
- Where Flight Tracks are involved, some pilots have reported difficulty or confusion when visually transitioning between the To-Scale portion of the chart Plainview and a Not-To-Scale inset, or vice-versa.

NOT-TO-SCALE (NTS) INSETS – DEPICTION ISSUES

- Depiction considerations attributed to electronic display "Zoom-In" Phenomenon
- Fix Labels & Text: along the edge or border of a NTS inset, for Fixes located inside an inset place Ident, Labels and related Information Text inside the inset.
- Inset Label: along the edge or border of a NTS inset, increase the Size and Location of 'NOT-TO-SCALE' inset label and position the label closer to the Flight Track vs. in an open area along the border.
- Inset "Sided-Ness": along the edge or border of a NTS inset, indicate which Side of the inset outline is Not-To-Scale vs. the To-Scale side of the Plainview.
- Inset Flight Track: along a Flight Track, which extends from a NTS inset to the To-Scale portion of the Plainview, indicate with a Symbol and/or a physical "Break" in the flight track where the track crosses from the Inset into the Planview.

GEO-REFERENCE & OWN-SHIP DEPICTION

- Some electronic chart display systems are able to automatically recognize the difference between areas of a chart drawn To-Scale vs. Not-To-Scale. For example, one major avionics display provider's system cannot make the distinction.
- Representation of Own-Ship position in a NTS inset is incorrect and misleading.
- The affected OEM is looking to Jeppesen so solve the problem by modifying the chart files instead of modifying their operating software.

HOLDING PATTERN DEPICTIONS - INSETS

- Existence of a Holding Pattern is Normally shown as a Symbolic representation (not true to size) at the applicable Fix location in actual Orientation
- For SIDs and STARs previously drawn as NTS schematics, for readability, the Location, Proximity, relative Alignment and Length of Flight Tracks can be adjusted compositionally to allow for a clear but 'artificial' depiction of the symbols and text.
- On To-Scale charts where a large Scales (i.e. 1 inch = 30 NM) result in compressed locations of Fixes and Shortened flight tracks, a clear Depiction of Holding Pattern symbols might not be possible due to congestion or overprint due to Fixes being shown at true location and associated tracks drawn to true length. (For example, on a chart drawn at 1" =30 NM, a 10-mile-long track is only 0.33" long. A holding pattern symbol is 0.5" long.)
- Some SIDs & STARs involve multiple Holding Patterns, sometimes 4 or more.

- When unable to depict Holding Pattern symbols in true locations, Insets are used instead of placing the Symbol and Bearings at the Fix.
- Pilots who "Zoom-In" to an electronic display of the chart often overlook HP inset(s) remotely located along the neat line of the Plainview graphic.
- The absence of the Holding Pattern symbol at the Fix has confused some pilots when instructed to hold.
- Consideration is being made to improve the association between the Fix and the applicable Holding Pattern inset when the HP Symbol is otherwise shown remotely in an inset. (I.e. Text Labels, Ball Notes, HP icon, other?)
- Consideration is also being made on ways to improve the Depiction and Arrangement of remotely located Holding Pattern insets (i.e. Alphabetical by Name, by Sequence, placed in Proximity to the Fix (es), grouped together, other?)

GRID MORAs

- Grid MORAs are normally based on 1 degree of Latitude-Longitude intervals
- Scale of the chart Plainview directly affects Size and Number of Lat-Long Grids
- Charts with large scales resulted in Too Many Grid MORAs
- Excessive numbers of Grid MORAs adds Visual Clutter and affects Readability
- Specification changes made to address association between Scale-Grid Intervals
- For charts with large scales, larger Grid MORA intervals (2 degrees).

GRID MORA DEPICTION ISSUES

- Some feedback indicated Grid MORA values were too prominent. It was suggested the screen percentage and color be modified slightly.
- Consideration is being made to modify the density and color.
- In general, depiction issues related to color present complex challenges, including electronic displays in Day vs. Night modes. (For example, lightening the color of a charted element in one mode [Day] may result in the element becoming more prominent the other [Night].

COMMON LOCATION OF PROCEDURE NOTES

- The consolidation and consistent placement of Procedural Notes in a single location, including all-encompassing Speed Notes in the upper right corner of the chart Plainview, has been very favorably received.

USE OF COLOR TO DISTINGUISH ALTITUDE & SPEED RESTRICTIONS

- The new SID and STAR chart depiction introduced color to help pilots better distinguish between Altitude and Speed Restrictions.
- Altitude Restrictions are shown in Blue & Speed Restrictions shown in Magenta.
- The introduction of color for these elements has been extremely well received.

PARC PCPSI Report for Established on a STAR with Descend Via Clearance

When is an aircraft authorized to begin a descent when issued a Descend Via clearance?

Korean Airlines Request for Interpretation - Does the "descend via" clearance authorize the flight crew to begin descent out of FL290 prior to reaching MGW so as to cross the first waypoint on the STAR with an altitude restriction (HIROY) between FL270 & 290? On the surface, this seems like a simple answer - After receiving a descend via clearance pilots are cleared to begin the descent at their discretion, but under ICAO rules, Descend Via is not a discretionary descent. The FAA 7110.65, Paragraph 4-5-7 Altitude Information states issue altitude instructions as follows:
h. Instructions to vertically navigate on STAR/SID with published crossing restrictions.
1. Assign an altitude to cross the waypoint/fix, if no altitude is depicted at the waypoint/fix, for aircraft on a direct routing to a STAR or SID waypoint/fix.
Korean Airlines Request for Interpretation - Is the intent of this note (h1.) to make a distinction between instances when a flight is cleared to "descend via" while on a published route that will join the STAR and instances when a flight is cleared to "descend via" while on a random route direct to a waypoint to join a STAR? The FAA 7110.65 Paragraph 4-5-7 Altitude Information under "h" currently states "Instructions to vertically navigate on a STAR/SID with published crossing restrictions." However, based on the request for interpretation by Korean Airlines it sparked discussion within the FAA and the PCPSI leading to a request to amend the current the language to read "Instructions to vertically navigate for aircraft established on a SID/STAR with published restrictions, or navigating on a published route inbound to a STAR." This request would amend language with the AIM and AIP if approved. But that can occur; it would follow the normal process for amendments and would also require a Safety Risk Management Panel.

PARC PCPSI NAVCANADA SID/STAR Update

NAVCANADA provided an update on their latest implementation and suspension of Descend Via. Prior to the implementation of the new Descend Via phraseology, NAVCANADA followed the ICAO initiative to create global harmonization for SID/STAR phraseology. This was approved by Air Navigation Commission in November 2015 with a State Letter 2015/40 issued November 2015 and effective date of November 2016. However, the actual implementation occurred on April 27, 2017, which was after Training packages were developed with airline partners, multiple briefings and publications across many associations and airline groups, as well as a training video.
Shortly after implementing, operational challenges presented themselves that stemmed from multiple safety occurrences, increased workload, frequency congestion, unexpected altitude deviations with the most critical issues occurring in Toronto. Due to the unacceptable number of altitude deviations, significant increase in workload, and capacity being affected in Toronto, NAVCANADA suspended the new phraseology on May 20, 2017. They are currently having an internal SMS review, making an AIP amendment, addressing the ICAO ATMOPS Panel, looking at the redesign

project for YYZ, and ongoing coordination is occurring between NAVCANADA, FAA, and ICAO.

Other topics discussed during the PARC PCPSI meeting concerned proposed changes to FAA 7110.65 paragraph 4-7-1regarding Descend Via, Runway Transitions, and Landing Directions, Data Comm, and AOPA Temporary Restricted Areas (TRA).

PARC NAV WG

The PARC NAV WG recently held a meeting in Seattle, WA and covered the following:

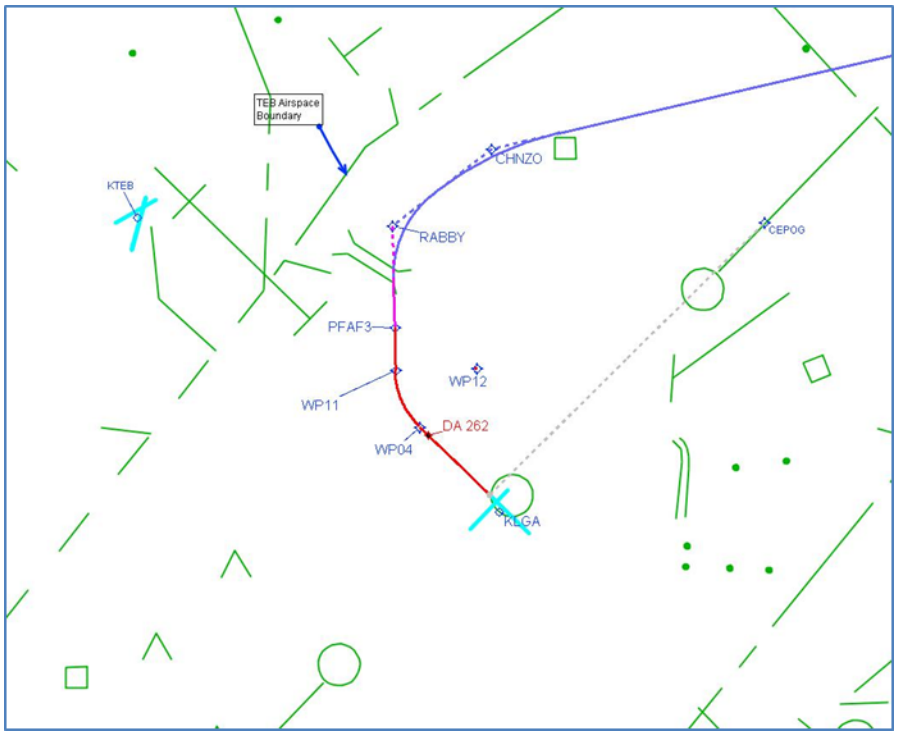
1. Overview & Recommendation Status
    a. Question on Historical Winds Application
2. 50 second Rule (RNP AR) Action Review

RNP AR – 50 Second Rule

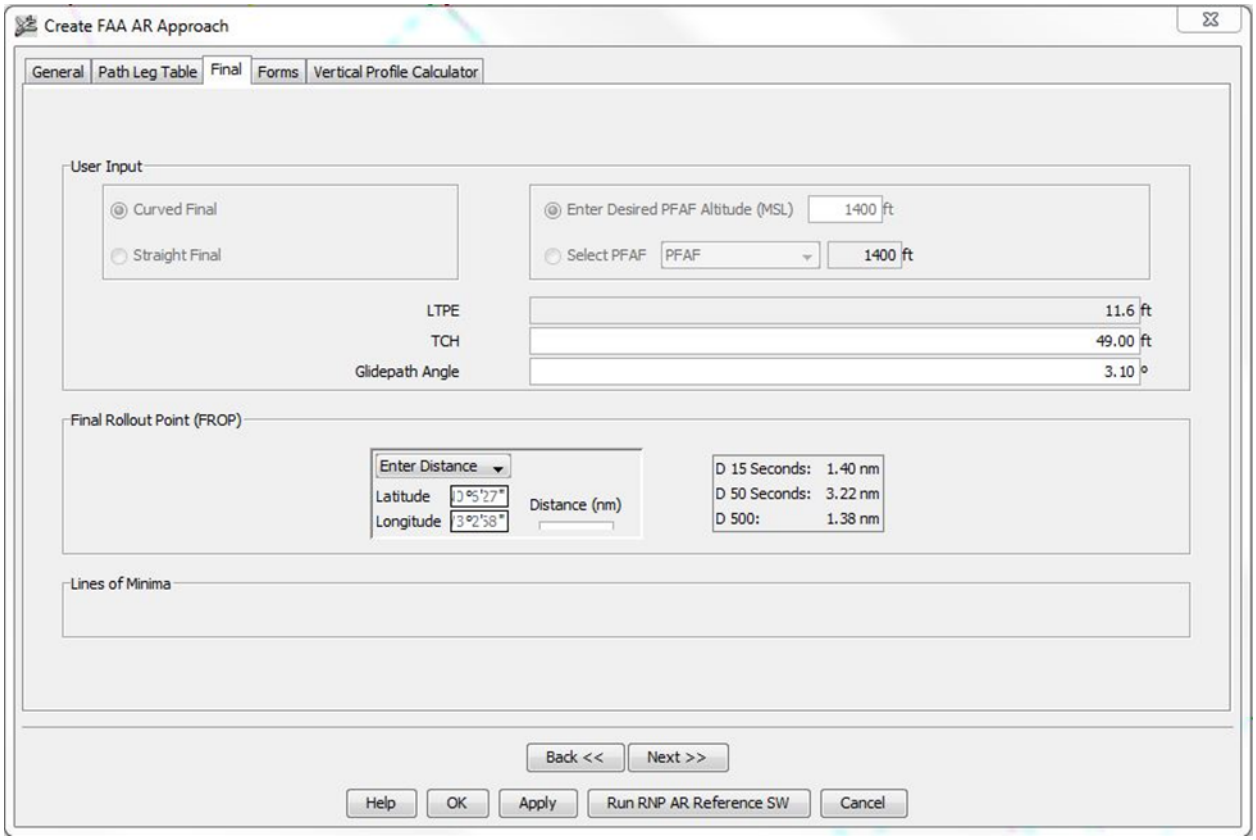
Recently, RNP AR approaches have been difficult to design at several airports constrained by either airspace or terrain. The issue has been caused by criteria (8260.58, para. 4-2-2) that states there must be 15 or 50 seconds between the final rollout point (FROP) and the decision altitude (DA). An approach designed for KLGA is the latest example that best demonstrates this issue.

When runway 13 at KLGA is required for arrivals, KTEB departures are highly restricted due to airspace constraints. To facilitate a better arrival rate to runway 13 in IFR conditions the FAA has implemented a RNAV (GPS) Rwy 13 approach but this approach has limitations that can be corrected with an RNP AR approach. The GPS approach has high minimums along with a 15-degree offset and many consider this type of approach a moderate level of risk. To reduce this risk a RNAV (RNP) approach has been proposed but the 15 and 50 second rule may not allow this approach to be implemented.

The picture below shows the RNAV (RNP) approach that remains clear of KTEB airspace and overlays the existing RNAV (GPS) approach that meets the requirements for ATC and Environmental approval. The problem lies with the distance from the FROP (WP04) to the DA being less than the required distance to comply with the 15/50-second rule.



In the picture below Targets generated a distance based on both the 15 and 50-second rule. The proposed RNP approach for LGA may be possible using a RNP 1 missed approach segment that will facilitate the use of a 1.40NM FROP segment length. However, if the FAA moves the DA to a higher altitude the 15 second rule will cause the FROP to move away from runway 13 causing an airspace issue that will prevent this approach from being developed.



Recommendation

Consideration should be given to a reduction in the time required in 8260.58A to better facilitate the design of RNP AR approaches into highly constrained airports. All RNP approved operators are required to complete additional training to ensure the lateral path of the RNP approach is accurately flown with or without flight director guidance.

One key point to address is most RNP missed approach procedures are not designed with a defined lateral track. Most use VA/DF or a CA/DF leg type and this database coding will not produce a defined lateral track. Additionally, published missed approach procedures will never be used unless the TRACON loses radar. With the loss of radar RNAV (RNP) approaches cannot be used because the FAA has mandated "RADAR REQUIRED" for these procedures. Also, even when the aircraft is in radar contact, approach control will not allow an aircraft to fly a published missed approach because of conflicts with other traffic.

Established on Departure Operations (EDO)

We received the final Fast-time Simulation report from the Tech Center on April 21, 2017 and on July 11, 2017 received the HITLS final report. The HITLS final report contained errors, in which we submitted corrections to the Tech Center, but have not heard the final report containing those corrections. Additionally, the HITLS for EDO may not have been accomplished using all the requirements as identified by the EDO Safety Work Group, so the following will occur:

- August 14, 2017 – Debriefing from ANG-C on the results of the HITL (AJT, AJV-8, NATCA, PBN, ANG-C).
- Sept. 2017 – meeting with the larger Safety Group (including industry) for a debriefing of the HITL results.
    - Decision point at the Sept. 2017 meeting;
        - Discussing benefits
        - Decision on whether or not to convene an SRM Panel to identify safety hazards,
        - Decision whether or not to further develop EDO based on HITL results,
        - Determination of feasibility or non-feasibility
- Risks – If determination of non-feasibility cannot be made at Safety Group then an SRM Panel needs to convene
    - This will be after Oct. 31st date, which will not meet PBN NIWG milestones.
    - SRMP could convene 1st quarter of FY18

Baltimore, MD and Washington, DC Roundtables

Based on meetings that have occurred with Baltimore, MD and Washington, DC communities, there will be a Full Working Group following the processes with FAA 7100.41 kicking off during the week of August 21, 2017. Washington National (DCA) is the trigger mechanism for this project based on the request from the DCA Roundtable. With DCA's close proximity and interconnectivity to other airports, it was recommended that work requested from the Baltimore Roundtable as well as request from Potomac TRACON (PCT) regarding Washington Dulles (IAD) "ILS Trip Arrivals" and northern STAR amendments be included.

There are additional meetings scheduled for September 26-28, 2017 and October 17-19, 2017, which will occur at PCT. The target publication date for these changes will be November 11, 2018 for DCA and February 28, 2019 for BWI & IAD.

UNMANNED AIRCRAFT SYSTEMS (UAS): Steve Weidner (ZMP) is the NATCA Article 114 Representative for UAS. Jeff Richards (ZAU) is assisting Mr. Weidner on this project due to the workload and activity associated with it. Below is the update for the membership.

NATCA/FAA WORKGROUPS

The NATCA/FAA Lost Link Standardization sub-workgroup will hold its first meeting in Washington DC on September 12-14. Five NATCA SME's (2 enroute, 2 terminal, and 1 oceanic) were selected to participate in this activity. The SME's are Danny Watson (ZAB), Jeremy McGinty (ZAU), Jamie Sanders (COS), Joe Klimes (TRI), and Abigail Anderson (ZOA). This workgroup will formulate recommendations to the FAA on standardized UAS

lost link procedures. Our thanks to all who volunteered to participate in this workgroup.

UAS FACILITY MAPS

In an effort to improve the quality of Part 107 authorization requests coming into the FAA, the agency is making public the UAS Facility Maps that each terminal facility was asked to complete. The agency has found that absent any guidance on what altitudes may be authorized around airports, proponents are simply requesting 400' AGL for every flight - whether they need it or not. This is leading to a high rate of disapprovals and greatly increased coordination time with the affected facilities.

With the maps publicly available, it is believed that the proponents will become more precise with their authorization requests. The second groups of maps were made available on June 22nd. The agency will continue to publish new maps, along with any map updates on the normal 56-day chart update dates. The next set of UAS Facility Maps will be released on August 17th. All maps are expected to be released by the end of 2017. The maps can be viewed by clicking here.

LOW ALTITUDE AUTHORIZATION AND NOTIFICATION CAPABILITY (LAANC)

The Agency is continuing to move toward deployment of is Low Altitude Authorization and Notification Capability (LAANC). LAANC will automate the UAS authorization (for Part 107) and notification (Part 101/Hobbyist) process. The Agency is working with several industry partners who will provide this service to the various UAS proponents. The Agency will provide UAS facility map data to the industry partners. The partners will, in turn, develop tools that will provide authorization and notification services to the proponents, on a real-time basis, based on the UAS facility map data. The authorizations and notifications will be instantly transmitted back to the facility for which the authorization/notification was made.

The agency will be deploying the LAANC tool in the following facilities by the end of CY2017 - MIA, CVG, ZMP, LNK, RNO, SJC, PHX, ANC/LHD and MRI. Provided all goes well at the initial sites, the LAANC tool will be deployed in facilities across the NAS throughout CY2018. The initial deployment will simply replace the manual process in which notifications are accepted and authorizations are approved. The tool itself will be used solely by staff support/management during the initial phase. It is envisioned the future iterations will be incorporated into operations. Mr. Weidner and Mr. Richards are working closely with the Agency on this project.

14 CFR 99.7 SPECIAL SECURITY INSTRUCTIONS

Using its existing authority under 14 CFR 99.7 - Special Security Instructions, the FAA has implemented airspace restrictions that apply specifically to UAS. The Agency published flight restrictions over 133 Department of Defense facilities, restricting UAS flights up to 400' AGL over these facilities. The restrictions apply to all types and purposes of UAS flight operations and remain in effect 24 hours a day, 7 days a week. These sites can be viewed on an interactive map by clicking here.

ARC'S

NATCA has been asked to participate in an SME capacity on the recently formed UAS ID & Tracking ARC (Aviation Rulemaking Committee). An effective way to identify or track UAS (particularly small UAS) does not currently exist. This fact makes it particularly difficult for law enforcement to track down UAS that are not operating in a safe manner and/or take enforcement action against a rouge UAS operator. The ARC will make recommendations to the FAA regarding policy and procedures on the tracking and identification of UAS in the NAS. Mr. Weidner and Mr. Richards are participating on behalf of NATCA.

NATCA has also been asked to participate in an SME capacity on the upcoming UAS Controlled Airspace ARC. The objective of this ARC is to specifically develop recommendations for the integration of UAS into the NAS. The first meeting of this ARC is scheduled for the end of September. The ARC is to complete its work and make recommendations to the FAA within 15 months.

7200.23A

The 7200.23A is the FAA order for Unmanned Aircraft Systems (UAS). The 7200.23A addresses all things UAS in the NAS. If unmanned aircraft are a part of your overall operation, you should familiarize yourself with the content of the 7200.23A

UAS QUESTIONS

As a reminder, any UAS related questions can be addressed to Mr. Weidner and Mr. Richards at UAS@natca.net.