

NATCA Safety & Tech Update
Week of August 15, 2016

Airport Capacity Decision Support Tool (ADEST): Kristen Laubach represents the membership as the Article 48 Representative for ADEST. Her report is below.

Over the past month Airport Capacity Decision Support Tool (ADEST) has moved into a testing phase for SFO where we continue to find issues. Initially the weather and NOTAMS pages were not updating correctly but this has been corrected. More concerns arose when ADEST continued to show a runway as open after a simulated closure of that runway had been entered into the program. In addition, ADEST calculated an Airport Arrival Rate (AAR) for the closed runway. Programmers are working on correcting these issues.

COLLABORATIVE DECISION MAKING (CDM): Kyle Andrews (ORD) is the NATCA Representative to the Surface Concept Team (SCT). Mr. Andrews forwarded the information below for the membership

The Surface Concept Team did not have any scheduled meetings or telcons in July. On September 21 the SCT has been scheduled to travel to Charlotte to engage with NASA on many of the concepts involved with surface efficiency, with a focus on use of EOBT and surface metering.

The FAA recently met with MSP Center towers to inform them of SCT Tasking 66 - Early-Call-For- Release. The test period is scheduled to start in early September. It is going to be evaluated after 30 days then after 60 days.

NextGen Distance Measuring Equipment (NG DME) Program: Samed Rizvi (PCT) is the NG DME National Representative. Mr. Rizvi forwarded the information below for the membership.

- Samed Rizvi met in person Lesly Samedy (Manager, ATO/PMO Enterprise Services) in person for a face-to-face introduction at FAA headquarters.
- Mr. Rizvi participated in weekly NextGen Status Meeting and Steering Engineering Workgroup telecons.
- At this moment, Mr. Rizvi does not foresee any impact from NextGen DME on the controller workforce at the moment.
- Mr. Rizvi requested a briefing packet from Lesly Samedy containing a large-scale overview of the program and timelines. The PM has not been cooperative in providing the briefing. Mr. Utley and Mr. Rizvi are working together to gain his cooperation.
- The following is a description of the program provided by the PMO:

The FAA is transitioning the NAS to Performance Based Navigation (PBN) to enable aircraft to fly flexible point-to-point routes and parallel tracks to support forecasted increases in air traffic and enplanements and to eliminate chokepoints and delays to improve En Route navigation efficiency. PBN allows aircraft to fly precise tracks closer together for more efficient use of the airspace, while reducing noise, fuel consumption, and carbon emissions. The transition to PBN is being enabled, to a large extent, by the US Global Positioning System (GPS) and its aviation augmentations, which are collectively referred to as Global Navigation Satellite Systems (GNSS). GNSS enables aircraft to fly Area Navigation (RNAV) and Required Navigation Performance (RNP) routes and procedures virtually anywhere in all phases of flight. However, GNSS is vulnerable to outages caused by Radio Frequency Interference (RFI), both jamming and spoofing. Therefore a portion of the ground based NavAids will be retained to provide a PBN-capable resilient service to GNSS.

The Distance Measuring Equipment (DME) infrastructure is most suited to provide a backup to GNSS because most air carrier aircraft are equipped and significant infrastructure already exists. DME was not originally designed to provide RNAV, but over the years, avionics manufacturers have integrated scanning DME receivers with their Flight Management Systems (FMS) to provide positioning suitable for RNAV. The current DME network has significant RNAV coverage gaps in Class A and terminal airspace over Continental United States (CONUS), which restricts DME RNAV to aircraft that also carry Inertial Reference Unit (IRU). Approximately 70% of air carrier operators carry DME RNAV and IRU equipment. The remaining 30% carry DME RNAV avionics without IRU and are therefore not approved to fly RNAV procedures. The inability of those DME RNAV without IRU to fly RNAV procedures is a significant shortfall that the NG DME Program intends to close.

This shortfall exists today but the impacts are manageable because En Route and Terminal operations are largely based on airways defined by Very High Frequency Omni-Directional Range (VOR) and conventional instrument flight procedures, which can be flown by aircraft equipped with either VOR or GNSS equipment. As the VORs and conventional routes and procedures are removed, a GNSS disruption could render, approximately 30% of the air carrier unable to continue flying the PBN procedures because a resilient PBN-capable RNAV alternative is not available at all areas where it is needed. Those aircraft will transition to less accurate conventional navigation using the VOR Minimum Operational Network (MON) and aircraft separation using radar vectors which could increase workload for pilots and controllers. In high air traffic areas, these events may cause disruptions to traffic flow resulting in delays and diverts for passengers and cargo delivery which may also ripple through the air traffic system causing additional pilot and controller workload increases and delays.

RNAV and PERFORMANCE BASED NAVIGATION (PBN): Bennie Hutto (PCT) is the Article 48 Representative for RNAV and PBN criteria work. Mr. Hutto's report for the membership is below

RNAV ATS Routes

The current "Lateral Protected Airspace Criteria for RNAV ATS Routes" as contained within FAA 7400.2K states the "basic width of an RNAV route is 8 NM (4 NM on each side of the route centerline)." The FAA 7400.2K also discusses "Width Reductions", in which "a reduced width is permissible to obtain additional traffic capacity and flexibility through the use of multiple routes and to avoid encroachment on special use airspace or other essential maneuvering areas." We are in the process of working with AJV-14 and AFS-400 to have the criteria amended regarding "RNAV Width Routes" with the standard being 3 NM instead of the 4 NM, especially since the accuracy requirements for RNAV 2 aircraft is 2 NM, 95 percent of the flight and if that accuracy can't be met, then those aircraft are not eligible to fly an RNAV ATS Route and would require radar vectors or assigned a conventional route.

Pilot Controller Procedures & Systems Integration (PCPSI)

A meeting was held in Boston on August 15th in which the following topics were discussed:

- Top Altitude and Climb Maintain clearances- At the Aeronautical Charting Forum (ACF), NATCA raised concerns that the way "Top Altitude is referenced within the FAA 7110.65 and AIM has now made every SID a Climb Via procedure, which was never the intention. A recommendation has been made to change language within these documents, therefore allowing "Maintain" or "Climb and Maintain" clearances to be issued for all radar vector SIDS and those procedures with published lateral paths that do not contain publish crossing restrictions. This will allow, "Climb Via" to only be used when the SID contains both lateral and vertical guidance. A DCP has been formulated and sent out for comment.
- STAR Runway Transition Guidance - Follow up discussions continued about amending the language and requirements for the FAA 7110.65 and AIM based on the results from the Houston and Oklahoma City Flight Simulations. During the simulations, we changed the aircrafts "Runway Transition" provided in contained the same lateral and vertical path when they were within 10 NM or had passed the "Runway Transition Waypoint (RTW)". All simulations showed this could be accomplished by various operators, but since it places the pilots in a "heads down" situation and being closer to the airport they would need time to make the change. There have been several airlines who have brought up issues, especially regarding the FMS and

how any change cause problems because the FMS wants to recalculate the descent and speed once the change has been executed. We will continue to work the issue and hopefully a resolution will occur soon.

- STAR Top Altitude Charting – We raised concerns at the Aeronautical Charting Forum (ACF) concerning the criteria requirements contained within FAA 8260.46F about only being allowed to publish a maximum of two Top Altitudes on a SID when those SIDS also cover additional airports. The FAA and Ledo publishes individual charts for each airport, which would allow each airport to have a maximum of two “Top Altitudes” but Jeppesen combines these procedures on one chart. We believe it’s much safer if each airport would have the SID published independently, so we will continue working with Jeppesen to understand the impacts of our request as well as AJV-8 and hopefully could to a resolution soon.

NextGen Integration Work group (NIWG) PBN

We held our last meeting on August 2, 2016, but there is nothing new to report.

Established on Departure Operations (EDO)

Followed up with the FAA based on the information provided from the “Tech Center” where they provided a few options on how to move forward with a cost ranging from \$300K to 450K. I was advised that funds have been allocated, but AJT will need to come up with a travel budget before we can move forward. During our conversation, I asked if some of the test could be accomplished at the facilities (A80/ZTL and D10/ZFW) to help expedite the process as well as save money, but it will need to be coordinated and agreed upon by the EDO WG. At this point, we are waiting on the FAA in order to move forward one-way or the other.

National Strategic Production Planning (NSPP)

We meet every Tuesday and discuss the procedures that are scheduled for implementation across the country making sure they are moving through the process correctly and in a timely manner and have no issues to report at this time.

AJV-14 & Flight Standards Conversations

- STAR Terminus - We have been discussing the recent changes to several documents (FAA 8260.3C, 8260.58A, and 7100.19G) concerning criteria for designing RNAV STARS. The changes for the STAR Terminus waypoint will have a direct impact on how we move forward designing STARS if the language is not changed. Currently, the language requires a mandatory altitude at the STAR Terminus waypoint for procedures that end with a track or heading even if the procedure is not a “Descend Via” procedure.
- RNAV Airways - Due to recent workgroups designing Q and T routes, discussions have come up about the width of these routes and the lateral protected airspace criteria for RNAV ATS Routes. Under the current guidance contained within FAA 7400.2K, paragraph 20-5-3,

the basic width of an RNAV route is 8 NM (4 NM on each side of the route centerline). We are working with the FAA to determine why the criteria is written this way when aircraft using these routes must be operating under RNAV 2 criteria. Under AC-100A, RNAV 2 requires a total system error of not more than 2 NM for 95 percent of the total flight time and the aircraft must correct to centerline as soon as they start to drift, so protecting 4 NM either side of the route doesn't make sense. We hope to have a resolution on this soon.

Digital Approach Procedure Initiative

About a year ago, we conducted Phase 1 of the "Digital ATIS RNP Advertisement" where six airports were selected and they advised on the ATIS that RNAV approaches were available upon request. The six airports in this study were ABQ, BNA, DCA, ELP, PDX, and RIC and each airport had RNP AR approaches with RF legs. The results of this study proved to be inconclusive because it was just data and did not include the nuts and bolts of what really occurs and we had no means to really know if advertising that RNAV RNP approaches are available upon request increased pilots asking for them without reviewing all the tapes. However, we did reach out the FACREPS from those facilities, but only two responded. The ELP FACREP stated, *"I personally think that advertisement does increase usage, however, training may sometimes have an impact on their usage because many new controllers are being trained to use vectors instead of the PBN. As far as my own controlling I immediately clear capable pilots on the approach and they are always prepared due to the advertisement."* The P80 FACREP stated, *"I think advertising the approaches on the ATIS does help to some degree initially. It at least puts the thought into their mind for that approach to be a possible option. What effects the rate increasing on the approach usage is our ability to approve that request. If the approach continually gets denied they will stop requesting to do the approach thinking they won't get the approach anyway, regardless if it's on the ATIS or not. Most the time these approaches are approved during slow traffic times and not at moderate or heavy due to the increased workload of trying to figure out where they will fit in the sequence with other aircraft not capable of or willing to fly the approach. When we get to the point where we can do these approaches simultaneously to parallel runways with reduced separation on the curved portions is when we will see a huge increase in them."* Going into the Phase 1 test, we did not believe that by just advertising that RNAV RNP approaches were available upon request would make a difference, but at some locations it did and others it did not.

We are now looking at Phase 2 where the primary approach that would be advertised on the ATIS would be the RNAV (GPS) at those facilities where the majority of aircraft can fly this type of procedure and RNAV (RNP) approaches at locations where the majority of aircraft can fly this type of procedure. We are looking at SJC and SMF on the west coast with NCT being the Approach Control Facility and IAD and RIC on the east coast with PCT being the Approach Control Facility and also looking at added PHL. We are looking at starting Phase 2 on or after October 1, 2016 and it lasting for one

hundred and twenty days (120). At this time, we are in the process of reaching out to the various FACREPS and the ATMs to ensure they can support this phase of the project as well as to ensure we are aware of any issues or concerns before moving forward.

UNMANNED AIRCRAFT SYSTEMS (UAS): Steve Weidner (ZMP) is the NATCA Article 48 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.

Small UAS Rule/Part 107

Mr. Weidner and Mr. Richards continue to spend the majority of their time on the implementation and rollout of the new small UAS rule. As a reminder, the small rule created a new part to the FAR's - Part 107. The rule also codified Section 336 of the 2012 FAA bill into the FAR's. Section 336 defines how hobbyist UAS operators function in the NAS. The Section 336 language was moved into FAR Part 101, creating a new subpart e.

The small rule goes into effect on August 29th. Mr. Weidner and Mr. Richards have been working closely with the agency to ensure that the impact to air traffic is minimal. The agency has set up a weekly telcon/webinar that is available for all employees to answer questions about the new rule and its implementation. The calls will begin on Wednesday, August 24th at 1pm Eastern Time and will be repeated weekly, on Wednesdays, through December 21st. Mr. Weidner and Mr. Richards will be participating in each of those calls.

Additionally, NATCA has an email address set up for individual questions about the small rule. That email is part107@natca.net.

Enroute UAS Contingency Operations

Mr. Weidner and Mr. Richards have been participating in a NextGen sponsored research project regarding UAS operations in the enroute environment. This research focuses primarily around lost link and how controllers react to lost link. The team has visited ZLA, JCF, ZMP and ZAU. The team will make its final site visits to ZJX and ZMA in September. The team has also interviewed UAS pilots to hear their perspective on lost link and the procedures they currently employ. The goal of this research is to help inform a standardized lost link procedure that will further enable UAS integration into the NAS.

White House Office of Science and Technology Drone Workshop

On August 2nd, NATCA President Paul Rinaldi and Mr. Weidner took part in the first White House Office of Science and Technology Drone Workshop. The purpose of this workshop was to explore ways to safely accelerate the integration of UAS in the NAS. Mr. Rinaldi took part in the morning session, held at the Eisenhower Executive Office Building. Mr. Weidner took part in the afternoon session held at the Newseum. Both sessions were very productive and informative.