NATCA Safety & Tech Update
Week of July 18, 2016

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

> Not many changes to Airport Capacity Decision Support Tool (ADEST) since the last report. The team had three scheduled telcons but due to staffing and vacations not everyone was present for all telcons. The newest base line version of ADEST was moved to staging late last week and we are still in the process of testing this version.

AIRSPACE TECHNICAL DEMONSTRATION 2 (ATD-2): Pete Slattery (CLT) represents the membership as the Article 48 Representative for ATD-2. His report for this week is below.

> On July 12 through 14th, NASA ATD-2 personnel returned to Charlotte and began the first of what will become monthly 'Engineering Shadow Evaluations'. The session was held in the recently commissioned CLT ATD-2 Lab located in the old terminal building. Shadow evaluations will be held in this location until the ATD-2 equipment is installed in CLT tower and TRACON next year. Once the equipment is installed in the operating quarters, the lab will still be available for engineering and other demonstration work as necessary. The objectives of this initial shadow session were:
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> - To orient users to the lab layout and equipment,
> - Introduce the ATD-2 TMC display,
> - Describe how the predictive modeling of the ATD-2 concept works,
> - Obtain feedback on both the equipment and the shadow eval process
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> Present during this three day event were NASA engineers, NASA Human Factors personnel, CLT tower controllers, TMCs, and CLT airport authority representatives. NATCA was well represented during each of the 3 days.
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> Also during this time, NASA human factors personnel visited CLT tower and TRACON and observed both the TMU unit and ground operations. The specific information they were looking for was how APREQ release times are calculated and obtained,

and how this can be replicated and improved with the ATD-2 equipment.

On July 14th I participated in a meeting at FAA headquarters for ATD-2 Stakeholders that centered around the role of TBFM in ATD-2. NASA is seeking slight modifications to TBFM in order to make the transition to ATD-2 as seamless as possible.

Further development of ATD-2 equipment and procedures will occur at both the ATD-2 lab in CLT and at NASA Ames Research Center in California. Myself and other NATCA members involved in these events will keep controller interests at the forefront of any decisions made that affect controller/TMC working conditions.

COLLABORATIVE DECISION MAKING (CDM): Ron Foley (ZOB) is NATCA's Article 48 Representative to the CDM initiative. Mr. Foley provided the following information for this week:

- FET has proposed tasking as of now.
- FCT has proposed tasking as of now.
- September these two groups will resume.

Surface Concept Team (SCT)

The Airports Surface Efficiency Office held a meeting for the Surface
Concept Team on June 28th to plan for the Early-Call-For-Release program to MSP, and to have discussions about ATD-2 at CLT.
The four airports within 300 miles of MSP that send the most planes to
MSP (ORD, MDW, MKE, MSN) are outside the TBFM scope of ZMP TMU
scheduling, but comprise over 30% of all the inbound flights. This has a
serious potential to skew the data. The Surface Office has noted this
concern.
AEFS implementation has been delayed due to technical issues. As a
result, the FAA will give permission to Lockheed-Martin (contract award
winner for TFDM) to provide their own EFD system. The hope is that this

will enable all new systems dependent on EFD (SCDM being just one) to
move forward with a higher confidence level that the EFD will be available
when they need it.
NASA needs cost basis metrics to be able to quantify tangible benefits.
The ability to show workload reduction, and resulting cost reduction across
the users' environment will be a key component in promoting the program.

RUNWAY SAFETY: Bridget Gee (DFW) is NATCA's Runway Safety Action Team (RSAT) Representative. She also serves as the Article 48 Representative to the Runway Status Lights (RWSL) Program. Below is her report to the membership.

Runway Status Lights (RWSL):

ORD: Being conducted in three phases: Phase 1, Runway 10L/28R, was turned online April 27, 2016. Phase 2 and 3 are scheduled to come online 2017.

Phase 1 (10L/28R): Initial Operating Capability (IOC) took place 4/27/16.

Phase 2 (10C Enhancement) – Cable work begins July 2016. Fixture installation begins early August 2016. Completion date shift due to south airfield shelter. Completion now scheduled for Spring 2017.

Phase 3 (9R Enhancement) - Scheduled to begin Spring 2017.

DTW: Hardware issues fixed and Commissioned on 4/20/16.

Phase 2 (21L): Circuits to be installed Fall 2016 or later

BWI: Construction is ongoing. System set to come online in 2017.

SFO: Installation is complete with the exception of fixtures, due to be delivered July 2016. IOC planned for Nov 2016.

JFK: ORD declared on 6/8/16. System operating well.

BOS/DFW: Work is ongoing to secure funding from the Agency and agreements with the airport operators at BOS and DFW. JRC scheduled for September 2016.

Runway Safety

Closed Runway Occupancy Prevention Device (CROPD): Live Testing is scheduled initially at JFK for the month of August then RNO and MDW into next year. CROPD if proven reliable will be the first use of voice recognition to provide safety alerts. Each facility's test will run for a month after which all test equipment will be removed by the contractor, data examined by MITRE, and next steps planned. I was present for the initial train-the-trainer training on July 12th. I will be returning when the system goes live.

Airport Construction Advisory Council (ACAC):

The ACAC continues to support construction activities throughout the NAS. NATCA representatives are reminded that Bridget Gee represents NATCA on the council and can assist with challenges associate with airport construction. Due to recent events at uncontrolled airports, both non-towered and towered, a communication gap in NOTAM distribution has been uncovered. A construction notice automation process is being worked. The funding portion has been approved. Our next step is to do a design review and the detailed requirements in which myself and the ACAC will be involved with during the development. We are currently in the scheduling phase. The PMO office should be ready for further discussion the week of August 8th. I expect the project should be completed approximately 7 months from now.

Root Cause Analysis Team (RCAT):

Bridget Gee is now the RCAT Industry Co-Chair on the RCAT. The RCAT met on 6/2/16. We reviewed 4 Category "B" incursions which included DTW, FLL, HNL, and LGA. Myself and my FAA counterpart briefed the RCAT at the recent RSC meeting on July 13th.

BNA CAR: I am currently working on a CAR for BNA due to the airport being expanded twice since the control tower was opened in 1981. The expansions have resulted in multiple runway and exit areas having limited or completely obstructed views from the tower. The inability to observe aircraft exiting the runways,

or holding in position makes it difficult for BNA controllers to effectively control traffic. Currently waiting on ERC review.

Timely Airport Maintenance Notification CAR: This CAR was in briefed on June 21st. Research and outreach are currently being conducted. More information to follow.

Runway Safety Call 2 Action Communication Initiative:

Runway Safety Best Practices Workgroup – The workgroup met the week of June 20-24. The group identified and reviewed Runway Safety best practices and will make recommendations for formalization where appropriate. The group will collaborate with the Runway Safety group and the Runway Safety Council to formalize the "best practices". The workgroup will be identifying and recommending training and familiarization to ensure pilot/vehicle/air traffic controllers are fully informed about communication related issues in Runway Safety. I sit as the co-lead for this workgroup, and our next meeting is proposed for September 2016 for further development.

Runway Incursion Prevention Shortfall Analysis (RIPSA):

RIPSA is funded by the Runway Safety group. This Runway Incursion Reduction Program (RIRP) is tasked to investigate, develop, test, evaluate, and deploy low cost runway incursion prevention technologies. This is the result of the NTSB recommendation to "require, at all airports with scheduled passenger service, a ground movement safety system that will prevent runway incursions; the system should provide a direct warning capability to flight crews." Currently, research is being conducted for 15 airports without any surface surveillance system which should be completed at the beginning of 2017. The hope is to have a low cost technology solution to reduce the risk of runway incursions and be production ready within the next 5 years. I expect the prototypes to be rolled out at possibly 2 airports.

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.

UAS Enroute Contingency Operations

The NextGen organization is engaged in a study of UAS contingency operations in the enroute environment. As a part of this study, the NextGen organization is visiting several enroute facilities around the country. During these visits the team interviews controllers, management personnel, airspace and procedures specialists, and other personnel in each facility.

The purposes of these interviews is to gain information on current UAS procedures and to identify areas where improvements can be made to the overall enroute UAS operation. The research being conducted by this group will help inform overall lost link procedures development. Ultimately the agency is moving toward a set of standardized lost link procedures. In May this group visited ZLA and JCF. This week the group is visiting ZMP and ZAU. Mr. Weidner has been participating in the activities of this work group.

Small UAS Rule

On June 28th the FAA published the small UAS rule, creating FAR Part 107 and codifying hobbyist/model operations into FAR Part 101, Subpart E. The rule will become effective on August 29th. Expect additional information and training on this rule in the coming weeks and months. Mr. Weidner and Mr. Richards are working with the agency on a daily basis to develop training and procedures for operations under the small rule.

Part 107

Regular commercial operations can now occur in the NAS for small UAS under Part 107 without the need for a Section 333 exemption and a Certificate of Authorization or Waiver (COA). In order to fly under Part 107, the following conditions must be met:

- Unmanned aircraft must weigh less than 55 lbs. (25 kg).
- Visual line-of-sight (VLOS) only
- Daylight-only operations, or civil twilight (30 minutes before official sunrise to 30 minutes after official sunset, local time) with appropriate anti-collision lighting.
- Must yield right of way to other aircraft.
- Maximum groundspeed of 100 mph (87 knots).

- Maximum altitude of 400 feet above ground level (AGL) or, if higher than 400 feet AGL, remain within 400 feet of a structure.

- Minimum weather visibility of 3 miles from control station.

- Operations in Class B, C, D and E surface area airspace are allowed with the required ATC permission.

- Operations in Class G airspace are allowed without ATC permission.

The change to air traffic vs. how operations occur today is not substantial, but there are a few items that are noteworthy:

There will be far fewer COA's for small UAS operations
NOTAM's will not be required for UAS operations under Part 107
Class G operations no longer require ATC permission to operate
Operations in Class B, C, D and E surface areas are allowed WITH air traffic authorization (look for an mandatory briefing item on this process)

Part 101, Subpart E

Hobbyist/Modeler operations have now been codified in this section of the FAR's. Guidance on these operations is now much clearer. Part 101/Model/Hobbyist operations may be authorized in Class B, C or D airspace given the following conditions:

- Operation will take place at a fixed location
- When there is a LOA between the controlling facility and a community–based organization

Any other Part 101/Model/Hobbyist requests in B, C, or D airspace will be denied.

WEATHER: Matt Tucker (ZTL) is NATCA's Article 48 Representative for Weather. His update for the membership is below.

Weather and RADAR processor (WARP)

The current upgrade for WARP has completed factory and site acceptance testing at the tech center. In addition to the

hardware testing the system has undergone one of two meteorological evaluations, the first one was a review of 10 test cases that were selected to look at specific types of weather events that happen in the NAS. This evaluation has been ongoing for almost a year as HARRIS and UNISYS delivered the test cases to the Tech Center. A demonstration of 6 of the 10 test cases took place at the tech center to validate and manipulate the mosaics to make sure they were suitable for deployment to ERAM. The national deployment of the upgrade will start at ZTL, ZDC, and ZAU the end of August with completion of the deployment by mid November. The first Mosaic to be deployed will be the all data mosaic which will have some clutter still in the mosaic. This mosaic will be replaced with the high confidence mosaic by January. The high confidence mosaic is still under going metrological evaluation, so far the mosaic far exceeds the expectations.

Offshore Precipitation Capabilities (OPC)

The FAA started a field evaluation of OPC at ZMA and ZHU in the oceanic sectors. This evaluation has the OPC generated mosaic displayed on the large WARP displays in the ocean areas. The product is a RADAR proxy rendered from lightning, satellite, and machine learning. Operational information is being gathered to determine wither the produce is suitable to proceed in the process to include the OPC mosaic into the national radar mosaic to be put on ERAM. The test is scheduled to continue through the end of July. Once the report is completed the decision will be made to proceed in getting the mosaic to ERAM.

NextGEN Weather Processor (NWP) and Common Support Services-Weather (CSS-WX)

NWP and CSS-WX have both achieved Preliminary Design Review (PDR), and CSS-WX has completed Critical Design Review (CDR). Both programs are conducting a lot of human factors work to get the basic interface and product descriptions documented for Raytheon and HARRIS. This process has changed as originally the contractors were doing the description documents but are now being done by the agency. Both programs have had human factor workgroup meetings for maintenance and control functionality and NWP has had one meeting for the initial design meeting for the Aviation Weather Display (AWD). The AWD will be replacing ITWS,

CIWS, and WARP terminal in all domains including the command center. The AWD is being designed from scratch and will configurable for each position that will be getting a display, i.e. ATCT TMC, TRACON TMC, Arrival TMC in the ARTCC. All users will have the ability to save configurations to allow easier use. Training for the AWD will be more than just teaching how to access the products but also how to use the actual weather products which will be a new direction for the weather programs.

Weather Evaluation Team-Collaborative Decision Making WET-CDM

The WET team is currently running the Collaborative Aviation Weather Statement (CAWS) summer demo and evaluation within the CDM community. There have been a number of issues that have come up this year due to confusion on how it should be used, when it should be issued. The team has been discussing ways to improve the understanding of the product and making it a lot more impact based not just weather based. The goal is to have a forecast that will only show weather that will have an actual impact on NAS operations, i.e. playbook or TMI was generated because the CAWS showed an impactful weather event. The Tech center is making site visits at a number of facilities to observe how the CAWS is being used in the field and then decisions will be made on where to take the product for the next convective season.

Surface Weather system (SWS)

The SWS is replacing the old F420 wind sensors as well as the wind measuring equipment (WME) with new state of the art wind sensor, temp/dew point, and a triple redundant altimeter sensor. The system will replace the F420 wind dials with either a 10 inch or 8 inch display depending on space the facility has. Money has not been allocated to do console modifications so the display is designed to cover the holes left by the F420. This displays are slat wall compatible. At facilities that are using WME or wind shear system this will be a mostly a behind the scenes replacement as the wind will be displayed on the current display. The SWS is compatible with ACE-IDS and IDS-R. SWS is currently be deployed and sites that will require new displays are being delayed due to a earthquake that damaged the plant that makes the glass for the displays.