NATCA Safety & Tech Update
Week of November 21, 2016

HUMAN PERFORMANCE: Jay Barrett (MIA) is the Article 114 Representative for Human Performance. His report is below.

Human Factors Activities

My recent trip to the UK yielded great results. Not only from a connections perspective but also from an informational perspective. I spent Saturday meeting with members of NATS human performance team. They have a considerable team of 29 people who do a lot of work for the company. NATS as a business entity is convinced that this group is adding extreme value to the operation. By comparison we have 9 including me. They employ a number of scientists as well as researchers and operational personnel. I was encouraged to find out that many of the items on my "to do" list for our HP office are things that they have either already done or are in the process of working on currently.

One item that we are developing, that they have made the decision to steer clear of is the health and wellness program. They allow their CISM folks to dabble in that area, but they try to steer clear of issues involving what they perceive to be mental health issues. I explained the focus of our program is more along the lines of providing workshops and information to assist controllers in navigating a 30 year career that is very demanding and requires forethought and planning, as well as making good choices over the long term. They are now interested in seeing what it looks like.

Monday -Wednesday was the CIEHF (Chartered Institute of Ergonomics and Human Factors) conference. Lots of ANSP specific presentations. There were also a number of military research talks and some about UAS and maintenance operations. Mostly though it centered on air traffic.

Important discussions and my take aways:

- Human Performance Standard of Excellence - this was a briefing on a paper completed by the FAA and Eurocontrol. It focuses on 12 elements that are ranked from 1 to 5 for ANSPs to assess how they are performing on that scale. I worked with Jason on assessing the FAA last year. There is a steering committee that will be concentrating on 3 areas by which to create standardized benchmarks for ANSPs to attain, from a human performance perspective.
- Remote Towers -This professor did an experiment where he compared the actions of controllers at a live air traffic facility and a high fidelity simulator in Spain. The study

found that the controllers in the simulator did not stand to verify VFR aircraft inbound or taxiing, even though they had hi def video screens. They also forgot to turn on runway lights when it became dark outside. They also did not take required weather observations. Most interesting was that during the study there were 3 reported runway incursions and the investigation and analysis listed as a contributing factor that the controllers in the simulator environment felt too relaxed and did not place enough emphasis on the reality of what they were doing. They felt it was an artificial environment.

- Wake Turbulence separation minima - This SESAR computer tool was tested to see if using aircraft type rather than aircraft class would increase runway capacity. It is understood the ICAO wake turbulence categories are over restrictive in many cases and this tool strives to provide spacing to the controller working the final that is more appropriate. This tool factors in compression as well and provides target indications on the glass for the controller to know exactly how much space is needed (indicated in black) and the minimum required (indicated in red). It was well received when tested in France. The tool does not take into consideration airline or pilot individual variability. From a human performance perspective the increase in information on the glass was found to be both good and bad for different reasons.
- Discussion on Culture change in Organizations - The speaker used a case study from maintenance technicians to illustrate that a human centered design process should be the center of any change process. His observation is that you cannot effect future change through training classes or classroom activities. There has to be a fostering and development of an environment of trust among all the team members. He advocated for the 70/20/10 time approach for learning and change to occur. With special emphasis on the 70% where individual job related activities and experiences do the most good. Leadership has to be fully involved and transparent in order for the trusting environment to take hold.
- Power distance discussion - This speaker specialized in organizational culture and used Hofestede's power distance discussion to evaluate safety cultures within ANSPs. Power distance refers to the level of comfort the less powerful have with the distribution of power. He discovered that organizations and cultures with large power distances had a negative affect on safety culture in the organization. The US as a whole has a number of around 40, which is relatively high and contributes to the less powerful feeling like they generally do not matter to the leadership.
- Emotional resilience - ER is a characteristic that can be learned, developed and practiced. This talk centered on observations in NATS where 4 of 10 developmental failures were due to reasons other than technical competency. This is similar to the concept I floated over a year ago where we would recruit and train performance coaches. They also have embedded this program in the academy training, similar to what we are trying to do. Since the development of the program over 50 controllers have overcome non-technical issues and become productive members of the workforce.

- Personal Well-being and the three pillars of positive mental health - This discussion centered on surveys done of the pilot communities. It discovered that a person's mental, physical and social well-being are part of a 3 legged stool where if any one leg is missing, the pilot can experience feelings of depression, high stress and anxiety. The speaker predicted that these results would be similar in an ATC study. They will be conduction one in Europe in the coming year.

Those were the discussions I felt had the most transference to what we are trying to accomplish.

Ongoing projects

N90 - There are resource and financial issues with this project. The contract is expiring at the end of the calendar year. AJT/AJI are working on a way to continue to fund the initiative using resources from other contractors or quite possibly the HPT. It may be some time next year before implementation of the standards takes place due to issues surrounding getting the facility trained and proficient at using them.

HCF - No movement from AJI on whether or not we are going to engage in helping them and to what level.

Team Resource Management workshop - is coming along well. A dry run of the WS was completed 2 weeks ago and we are regrouping and making adjustments. We have a self-imposed deadline of year-end to make this ready for prime time.

Nothing really new to report in the Health and Wellness branch.

ZOA - we are in the process of sorting out the LR issues surrounding an actigraphy study we will perform with the help of the oceanic areas. We are hoping to have 30 or 40 volunteers wear Actigraph watches for 30 days. The intent of the study is to further the discussion surrounding the amount of sleep operational people are getting and also to see what impact ZOA's early start times have on overall fatigue profiles.

INTEGRATED DISPLAY SYSTEM REPLACEMENT (IDS-R): Richie Smith (N90) leads NATCA's efforts on the IDS-R project as the Article 114 Representative. Below is Mr. Smith's report.

This past week the latest Operating System for NIDS failed testing at the Technical Center in Atlantic City. Forty-three of the forty-four tests passed testing but it was found that an important fix was omitted from the build causing the single failure. This discovery was made on Wednesday afternoon and an attempt

was made to download an updated version from the vendor's California labs. Due to server issues the download had to take place overnight and the revised build had issues during installation. These issues prompted the vendor to declare the build a failure and testing was terminated. The FAA has proposed new test dates for the week of January 9. That is the first available date due to the upcoming holidays and moratorium.

SCT successfully declared IOC during the week of November 7th. There are still kinks to be worked out but it looks like the build (3.6) that was constructed for SCT is performing as needed. This build was key sited at I90 and there are also kinks to be worked out there but overall things are looking good.

An issue has arisen in the 3.6 build dealing with workstations freezing up due to an excessive amount of pages being stored in the "back button" feature. Negotiations are taking place currently as to how to limit the number of pages stored in memo, thus preventing the freeze up.

OSHA: Mike Odryna (ZBW) is the Chairman of NATCA's OSHA Committee. He has provided an update for the membership.

New Orleans Lakefront Tower Mold Issues

The project to seal the exterior of the Base Building has started. The first stage will include removal of failed caulking and the application of an exterior sealant. This process will take several weeks depending on weather. Once completed a project to remove all areas affected by mold in the interior of the building will begin. Weekly Air Monitoring continues to show interior mold levels at acceptable levels.

POC: (Mike Odryna, Geoff Bacci, Nichol Bell, Lawrence Pharr)

Dallas Love (DAL) Tower Mold Issues

An ongoing water intrusion issue is being investigated at DAL Tower. Several employees had voiced concerns about the IAQ at the facility that is caused by areas within the facility that have been showing signs of Water Intrusion for many years. The Agency hired an independent Certified Industrial Hygienist (CIH) to investigate. The CIH found an area within the Breakroom that showed signs of mold. Also, areas in the stairwell that appear to have been moist in the past. They also identified areas outside the tower where the chalk is failing and must be repaired. The Agency is working on a plan to move forward.

POC: (Shannon Smith, Mike Odryna)

Great Falls (GTF) Tower/TRACON Mold Issues

Shawn Kramer received reports of water continuously infiltrating the first and second floors of the facility at Fort Smith. It turned out that TechOps was aware of the problem and allowed it to continue with plans to fix it in the next fiscal

year. The FACREP was instructed to immediately file a UCR. Subsequently the FAA appeared on site to initiate a short-term fix to the leaks and remove the wet sheetrock and carpet.
POC: (Shawn Kramer)

Indoor Air Quality (IAQ) MOU Webinar

With the ratification of the new Air Traffic CBA, an MOU went into effect. That MOU requires the Agency to adhere to the Indoor Air Quality, Program Implementation Requirements (IAQ PIR). It is important to immediately report any and all signs of water intrusion. Amongst other requirements, the MOU requires action within a given timeframe after water intrusion occurs. The OSHA Committee, along with Geoff Bacci, will be holding a webinar regarding the MOU on December 15th at 1pm Eastern. To register for the webinar, click on the following link.
Webinar Registration
POC (Mike Odryna)

OSH issue reporting

If you have an OSH issue at your facility, use your normal reporting process. I.e. OCC, UCR etc. Also, contact you NATCA Regional OSHA rep. The regional OSH Rep's work as liaisons between the lines of business.
If you have a concern about something occurring at your facility, you can fill out the following form to request a member of the OSHA Committee contact you to discuss your concerns.
OSHA Committee Information Request Form

Committee Membership:

We still have vacancies in both the Southwest and Great Lakes Regions.
POC: (Mike Odryna)

BTV ATCT Water Intrusion and Mold

Evidence of Water intrusion and Mold has been highlighted at Burlington ATCT/ TRACON. The FAA has conducted preliminary mold investigation and has sealed the area so as to prevent Mold spores from entering the workspace. A plan is currently being developed to determine where the water is coming from, and remove the mold.
POC: (Dave Schmitz, Mike Odryna)

Cape TRACON Water Intrusion and Mold

A drainage trough in the floor at the Cape TRACON has backed up with sewage. The facility began to get infested with Sewage flies and a bad odor. An insecticide was used in conjunction with a cleaning plan to help with the sewage fly issue. Fans are being used to help with odor.
Currently a plan in place to clean up the trough and solve the drainage failures.
POC: (Scott Robillard, Mike Odryna)

Regional OSHECCOMs

The NATCA Air Traffic Regional Reps and Region X reps attended their respective Regional OSHECCOM meetings throughout October and November in

the New England, Great Lakes, Southwest, Central, and Northwest Mountain Regions. Minutes from the Regional OSHECCOM meetings can be found at: OSHECCOM KSN Site

Fire Drill Requirement

All FAA employees are required to participate in a fire drill annually. Ask your local management for the status of fire drills at your facility.

POC: (Mike Odryna)

HSV (HSV) Tower/TRACON IAQ Issues

At the convention Mike Odryna was approached regarding IAQ issues at the Huntsville Facility. Then on during the week of September 19th painting was going on at the Tower. The employees voiced concerns over fumes in the Tower that lingered in to the weekend. The Agency is currently looking into the issue.

POC: (Matt Tucker, Mike Odryna, Molly Ware)

Hurricane Mathew Water Intrusion throughout Southern Region

Matt Tucker (Southern region OSHA Rep.) has been working with the Agency to resolve any water intrusion issues that occurred during Hurricane Mathew. If you know of any areas that have not been addressed as of yet, contact Mat Tucker.

POC: (Matt Tucker)

NOME FSS

NOME FSS experienced a loss of heat at their facility. In the process of resolving the issue, TechOps punctured a heating pipe that subsequently drained all the Glycol out of the system and into the facility. The facility went ATC Zero and will remain so until the fumed are dissipated and the heating system repaired.

POC: (Larry Trottini)

National OSHECCOM Meeting

Mike Odryna, Dominic Petrelli and Larry Trottini will be attending the National OSHECCOM meeting in Washington DC on October 26th and 27th. Discussions and updates to include the National PAD Program, 3900.19B Revision, FAA OSH Program Update, Injury and illness reports, and Facility OSH Inspection Findings.

POC: (Mike Odryna, Larry Trottini, Dominic Petrelli)

Current Facility issues being worked by the committee and others.

FAY: Fumes	BTV Tower/TRACON: Mold and Water Intrusion
NEW: IAQ Mold	FAI/ATCT: Roof Fix and repair Tower Cab Ladder
FAI FSS: New Roof and HVAC Unit	YNG: Roof Replacement
Alaska FSS: OTZ Housing/FAI HVAC-ROOF Replacement	ARR Overall Facility Condition

GRR: Odor, ASR Contamination	PHF: Mold/IAQ
Hurricane Matthew water intrusion issues	KET FSS-FSS Facility Rehab
NWM Regional Office: Water Quality Issues: New Regional Office Build	New NWM Regional Office Design
DAL ATC: Water intrusion and Mold	SGF Mold/IAQ
ANC ATCT: IAQ Article 53 Investigation	ZAN: Seismic Upgrade
DSM SSC Office: Comprehensive Mold Evaluation	FSM: Water Intrusion, IAQ
ANC ZAN- Seismic upgrade	SGF ATCT: HVAC Project
PHL: Water Intrusion, Mold	Cape TRCAON: Sewer flies, Odor, Plumbing issues.
GTF: Mold	NWM Regional Office: Water Testing
STL Tower: Elevator	ZAN: Drinking Water Issues
Mansfield Tower: Water, Security, FLS	HSV: IAQ, Fumes

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**.**

- **<u>RNAV ATS Routes</u>**
- We are still in the process of working with AJV-14 and AFS-400 regarding the "Lateral Protected Airspace Criteria for RNAV ATS Routes", which we hope will lead to change in criteria and reduction in the basic width of an RNAV route.
- **<u>Pilot Controller Procedures & Systems Integration (PCPSI)</u>**
- A meeting was held in Henderson, NV on November 8th-10th. I was unable to attend as I was in Montreal for the ICAO PBN STUDY WG, but Andy

Marsovari, NATCA Procedures Rep was in attendance. Items discussed or presented were as follows:

- **Speed Guidance** - Pilots have been confused with a "Descend Via" clearance after a previously assigned speed as by definition a "Descend Via" clearance cancels any previous instruction and all altitude and speed constraints on the procedure are mandatory. During the discussions, the team learned the Airmen Information Manual (AIM) did not contain the proper language or examples as those within the FAA 7110.65. Proposed language was suggested and agreed upon and will be implemented into the AIM on April 27, 2017.
- **ICAO –** Adopted Climb/Descend Via on November 10, 2016, which is slightly different from the FAA and Canada will implement on March 2, 2017.

• USA •	• Canada
• Top/Bottom altitudes are charted: *DESCEND VIA* EAGUL6 ARRIVAL	• Always assign an altitude. DESCEND VIA STAR [TO] (altitude)
• *DESCEND AND MAINTAIN (altitude)* = DELETE ESTRICTIONS	• DESCEND UNRESTRICTED [TO] (altitude)= DELETE RESTRICTIONS ABOVE THE CLEARANCE ALTITUDE
• *DELETE SPEED RESTRICTION*	• SPEED RESTRICTION CANCELLED
• *DELETE ALTITUDE RESTRICTION*	• ALTITUDE RESTRICTION CANCELLED

• DESCEND/CLIMB VIA – Cancels previously issued speeds and aircraft must comply with published speeds.	• DESCEND/CLIMB VIA – Does not cancel a previously issued speed
• *DESCEND VIA* – pilots discrétion descent to meet speed & altitude constraints	• DESCEND VIA – pilot to begin descent immediately to comply with altitude constraints. NOTE: Canada plans to make DV clearance discretionary to harmonize with US
• Uses the STAR/SID name and number with descend/climb via clearances	• Does not use specific STAR/SID name with descend/climb via clearances

- **Departure Clearance (Climb Via DCP) SRM Report** – An SRM panel was conducted several weeks ago, pertaining to the FAA 7110.65 Document Change Proposal (DCP), paragraphs 4-3-2 Departure Clearances, 4-3-3 Abbreviated Departure Clearances, 4-5-7 Altitude Information, and 5-6-2 Methods. The panel determined no hazards will be introduced by changing the current guidance and using a "Maintain" when formulating departure clearances containing SID procedures that do not contain published crossing restrictions, radar vector SIDs and those SIDs with a Radar Vector Segment. These changes will become effective on April 27, 2017.

- **<u>Established on Departure Operations (EDO)</u>**
- After the "Shakedown" Human-In-The-Loop- Simulations (HITLS) were conducted on November 7-10, 2016, we agreed adjustments needed to occur by the Tech Center before data collection could begin. Based on the changes that were required a second "Shakedown" has been scheduled for the week of November 28th, which required adjustments to the data collection schedule. The new data collection is as follows:
- December 13-15 will be Group One Data Collection involving ZTL and A80.

- January 24-26 will be Group Two Data Collection involving ZTL and A80.
- January 31 - February 2 will be Group Three Data Collection involving "Other Facilities".
- **National Strategic Production Planning (NSPP)**
- We meet every Tuesday and discuss the procedures that are scheduled for implementation across the country and have no issues to report at this time.

- **Digital Approach Procedure Initiative**
- We are still working on Phase 2 of this initiative where the primary approach advertised on the ATIS when weather conditions are below Visual Approach minimums 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. The facilities that have agreed to participate are PHL, SJC, SMF, and NCT. We traveled to PHL on October 25th and met with NATCA and Management to brief them on what the program was about to ensure they understood and could participate. Everyone was in agreement and the start date will be December 19th and will last for 120 days. Additionally, we meet last week with NCT, SMF, and SJC and have agreed to start on January 9, 2017. The test for all facilities will end on April 9, 2017 and our final report will go out in May 2017.
- **Performance Based Operations Rulemaking Committee (PARC) Navigation (NAV) WG**
- We met in Atlanta on October 19th and 20th where we discussed the follow:
- ATC Climb Gradients
- Precipitous Terrain
- RF Display Action Team
- On November 18th, these items were presented to the PARC Steering Group with the following outcome.
- **Precipitous Terrain** – recommendation accepted for PARC formal submittal to AVS-1 following addition of a listing of locations where the criteria changes could have an immediate impact on NAS operation. I have some of that material from Southwest, but would like to ask that any operator with locations where either the STAR-IAP change or the allowing AR final over precipitous would have an effect submit those to me with an explanation ASAP.
- **RF Non-Display Operation** – the recommendation was accepted as written.

- **Climb Performance for ATC Altitudes on Departure** – not accepted in this meeting, will be further discussed during the December SG F2F in Miami.

WEATHER: Matt Tucker (ZTL) is NATCA's Article 114 Representative for Weather. His update for the membership is below.

Weather and Radar Processor

The upgrade for WARP is nearly complete. Some issues have come to light that were not evident in testing. The mosaic only shows precipitation when the weather exceeds 29dbz. The issue that is being seen is that the higher altitudes are not seeing precipitation on ERAM and aircraft are asking for deviations. This is due to the tops not having enough precipitation in them hence not being displayed. This issue is a legacy problem due to limitations of DSR and the earlier versions of WARP and the introduction of the selectable layer's mosaic. One intern solution to this would be to use the 000-600 mosaic instead of one of the other filters. Another possible solution is to increase the levels of weather covered in the Moderate filter. The other issue has to do with the follow on mosaic "high confidence ". During the meteorological evaluation it was found that the sometimes-real weather was being removed as clutter. Due to this problem coming to light the new mosaic will be delayed until late January at the earliest.

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

Both systems are progressing though the development phase. A large contract modification has been going through the adjudication process. A number of items were bid that actually will require a larger effort from the contractor to create. Also the original contract only allowed for one face to face human factors meeting and in actuality a number of meetings will be require because of the clean sheet design for the Aviation Weather Display. Raytheon has completed build one and demonstrated the results to the human factors meeting that was held the first week of November. Some of the items developed so far are the sign in screen and the allowance for multiple user preference sets and the requirement for a default configuration that will allow the system to always boot into a usable display without having to log back in after a reboot. Raytheon was also able to show the first couple of weather products like basic satellite loops and a precipitation mosaic. A lot of progress was made on upcoming build items and issues that we had been working since the last meeting. The team will plan to meet again at the end of build two, which is scheduled

for the end of April. A number of go-to meetings will be conducted to show the results of the sprint demos that will be completed between now and the end of build two. The site survey for the test system at the technical center is schedule for the second week of December. NWP is scheduled to conduct its critical design review (CDR) the week after thanksgiving.

ICAO Meteorology Panel

The panel met in Montreal to continue working on the weather requirements for global weather advisories and trajectory-based operations. Some of the hot topics were Space Weather advisories and how and who would produce the advisories and what information would be actually needed and useful. The issue with space weather is twofold in that you have a flight crew exposure risk and an effect on navigation and communications, which result in two different types of advisories. A number of discussions were centered around the ICAO standards for data transmission and format. The US adds a number of items in the remarks of the ASOS that is used for climatology and expansion on the information in the METAR, i.e. variable ceiling and lightning and storm information. One of the contentious issues was adding these remarks into the new formats and allowing other countries to expand the information that they include in the METAR. The new data format is intended only for automation to read, where a current METAR is about 200 bytes of data the new format makes a METAR almost 1 mb due to the underlying information being include in the data stream.

Air Traffic Control Association (ATCA) NEXTGEN Weather Forum

A NEXGEN Weather forum was conducted in the NEXGEN theater at ATCA to discuss the how NWP/CSS-WX will be the weather provider for all NAS systems and what data will be available. MIT/LL gave a very good overview of some of the weather products that will be available. This was followed by a Q&A period; the panel consisted of a meteorologist, a controller, an airline dispatcher and an airline pilot.

Friends and Partners of Aviation Weather (FPAW)

FPAW is an ongoing semiannual meeting involving the aviation meteorology community and operators. The second meeting is always conducted in conjunction with NBAA's annual meeting. The panels covered topics from weather in the cockpit, turbulence information and dissemination, weather modeling data, and airframe reporting and PIREPS. A heated discussion was held about the radar mosaic that is transmitted to the cockpit and what the pros and cons of the different types of mosaic and which provider was giving the best product. A panel was

conducted on airframe weather reporting and how they relate to PIREPS. One of the interesting questions was whether a voice recognition software would be able to translate a PIREP and then have it disseminated through the NAS. The turbulence panel covered Delta's new weather application that is being introduced into the cockpit and the need for sharing of information. In addition, the need to sharing information with the back of the plane to help reduce injuries. A concerned that was voiced is the use of ACARS and airline dispatchers to file PIREPS and then the controller not knowing they are being filed. Eddy Dissipation Rate (EDR) is an algorithm that uses onboard sensors to create a number that represents the turbulence around the aircraft. This information is being automatically transmitted to ground stations and added to the models for forecasting but controllers are not privy to the information and therefore are not aware of turbulence in their airspace. A number of airlines are now reporting this information and it was brought up the need to share the data for safety of flight. This is a global issue that is starting to be addressed in the ICAO-MET panel, but needs to be addressed in the US know as more reports are being done automatically without the controller's knowledge.