National Air Traffic Controllers Association
1325 Massachusetts Avenue NW, Washington, DC 20005
Safety and Technology Department
Office: 202-220-9818
Fax: 202-628-7286

SAFETY AND TECHNOLOGY DEPARTMENT UPDATE

Week ending January 15, 2016

ADMINISTRATIVE SOFTWARE: Rich Santa (ZDC) is the Administrative Software Article 48 Representative. He represents the NATCA Membership on several software projects and his report for this week is below.

- **Webschedules (WMT)**
  - We have a new support contractor for WMT.
  - Mr. Santa has been working with the new contractor to review the dozens of open tickets generated by the month long lapse of support. Getting the servers and program more stable is also high on the priority list. We do have weekend support now and Mr. Santa expects a slow movement towards more stability in the program.
  - Please contact Mr. Santa (richzdc@yahoo.com) if you have any concerns or needs from this program.
- **ATOMS**
  - ATOMS is the CRU replacement program.
  - The team is working daily to roll this out by the end of this year. We have 4 NATCA SME's on the program. Two of them are geared at making the general program better and two are focused on shift management.
  - We have weekly meetings on the construction of the program and it is going pretty good but slow. The agency is trying to roll out the first test facility on April 1... that seems unlikely. As soon as we get an operating demo, Mr. Santa will try to include a few more NATCA testers.
- **CRU**
  - Along with WMT, the agency has added a bunch of new OT codes. These codes were meant to be only for management usage and should not be impacting the BUE's.
  - If you know of any instances where management is requiring CIC or BUE to use these new codes, please let Mr. Santa know.
- **OPAS**
  - Mr. Santa has recently heard that OPAS (the replacement for WMT) is on an indefinite hold.
- **CEDAR**
  - We are planning a meeting to discuss the approval for expanded training form usage in CEDAR. This has been on hold for a few years now but we have finally received the initial go ahead to explore the possibility of expanded usage of CEDAR for electronic recording of training.
  - The MOR portion of CEDAR will have a few new dropdowns for runway safety.

- **FALCON**
  - The biggest ask for FALCON is automatic synced voice. It is being worked on but is still a few months away.

HUMAN FACTORS: Jay Barrett (MIA) is the DC-Based NATCA Article 48 Representative for Human Factors. Below is Mr. Barrett's report to the membership.

- The Human Performance Team (HPT) continues to be very active defining exactly what the scope and substance of the team will be. The ultimate goal is to influence Agency vision, analysis and policy in all areas of NAS operations. The office is trifurcated with the mature fatigue risk management office, a human factors office and a health and wellness office. My role continues to require me to work alongside the HPT manager (Jason Demagalski) and coordinate activities in each office and collaborate on the implementation of activities.
- The fatigue office activities include:
  - ZOA – Mr. Barrett reported last month that there was a waiver request from ZOA to work a schedule not in compliance with the 7210.3 BWS rules (Alternate Means of Compliance (AMOC)). He received word through Jason that this request was denied by Tim Arel's office, but when Mr. Barrett coordinated with ZOA, they had no idea. Jeff Richards (NATCA Fatigue Lead) was unaware of this as well. We will be coordinating to ensure that both Safety and Air Traffic are aware that the compliant schedules are worse from a fatigue scoring perspective than those that ZOA requested.
  - Compliance reports continue to be massaged in order to monitor fatigue work rules contained in the 7210.3. These reports will allow for identification of facilities where the fatigue work rules may be misunderstood and/or inappropriately applied. In the last go around we found that L30 (Las Vegas TRACON) was violating the 0530L start time before a mid on a regular basis. We are working on finding out what the issue is.
  - Work continues on a fatigue alertness application. Our issue is coordinating with the DoD on ownership rights and use of previously written code. This is actually held up in legal. We still are hopeful for a release at CFS.
  - PFS content for January centered on how alcohol negatively affects sleep.
  - Dr. Wesensten is working on analyzing the modeling work that was done in Oct 2013. When the work was done by Dr. Hursh the methodology and process was not memorialized in any significant way. She will have a solid baseline list of assumption for the team and FSSC to use going forward so that all further fatigue modeling will be precise and consistent with past modeling.
  - Further field fatigue studies have been written up and submitted for prioritization with other fatigue and human factors work to be performed over the remainder of the fiscal year. We should know what will be funded soon.
  - We have been working with ICAO for months now on a new SARP for ANSPs that will stand up a FRMS. There is an ICAO conference in April

that Mr. Richards and Mr. Barrett will be attending. Mr. Barrett believes the SARP should be done by then as it is currently in the final editing stages.
    - Mr. Barrett has been coordinating with Tom Adcock (NATCA National Training Lead) on revamping the Fatigue module that is taught at the Academy. Currently it is a 2hr lesson that is "death by ppt." We may want to change this to a Human Performance module. This conversation included Garth and centered on the delivery of a Foundations of Professionalism component at the Academy. With the HPT office now including HF,Fatigue & H&W Mr. Barrett feels his office has a larger content role to play. Nothing has been decided and work is ongoing.
    - Mr. Barrett has coordinated with a group that developed a personal fatigue management app. He was introduced through Mel Davis (former NATCA NextGen Representative). The FSSC will receive a briefing on this in February. The software is somewhat expensive and would be a game changer for personal fatigue management as it would require a controller to perform a psychomotor vigilance test (PVT) to assess the individuals alertness prior to allowing them to sign onto a position. The software is customizable, but also very pricey. ($15/employee-month) Mr. Barrett is not hopeful that it will get anywhere with the FSSC.
- The human factors office activities include:
    - The new certification standards work at N90 is progressing and we should have a fully vetted set of standards by the middle of February. It has been agreed to with the facility leadership and ANGC-1 (conducting the work) that 2 areas will be fully trained and the next 8 new arrivals will be placed in the new standards certification path. It remains to be worked out how the rest of the trainees will transition if at all. This will require an MOU and waiver from Terry Biggio (FAA VP) for them to move forward. Mr. Barrett is coordinating these activities for completion before June.
    - The teamwork training Mr. Barrett referred to last update has been roughed out and we will call it Teamwork Resource Management (TRM). We have partnered with the CWG/IBC group to develop a product that is appropriate for delivery to the workforce and not just facility leadership. The entire course will focus on the attributes of highly effective teams and how teams that work collaboratively are safer, more efficient and more successful than those that do not.
    - We attended a briefing on SIRAP analysis that is being rolled out in TechOps. This is an analysis process that assign values to events in accordance with the SMS process. It has a red, yellow, green matrix and seeks to identify those events that increase the risk profile in the NAS. We will be developing something very similar for the HPT to use in analyzing ATSAP reports and system events going forward. This is another to-do on our development waterfall. We are hopeful that when the next support contract is awarded for AJI that the Ft. Hill group will be included and provide us with the much needed support for development of this. They developed the SIRAP process for TechOps.

  - The Individual training assessment we performed at the request of the WSA ERC in November has stalled and our office appears to be powerless in forcing the facility to conduct the agreed upon training. We have kicked the issue back to the ERC for them to deal with. The HPT has been afforded no authority other than to provide assessment, analysis and suggested training. We will be discussing this further with Mr. Biggio this week. We did however, memorialize the process and develop a generic protocol to be followed should we be asked to provide this type of support somewhere else.
  - We attended an all day briefing at MITRE and received information on all the programs they have that relate to what the HPT may decide to address in the future. Our intent was to develop a partnership where they can assist this office in accomplishing its mission. Much more to follow here.
  - We have been asked to do facility assessments at C90,A80 and D10 to uncover whether there are systemic training and/or cultural issues that may be responsible for each facilities low certification rates. This will begin in February.
  - Later this week Mr. Demagalski and Mr. Barrett will brief the NTSB on the organization and scope of the Human Performance office. Our hope is to develop a working relationship with them going forward.
  - We attended a follow up briefing on the JYO remote tower. Mr. Barrett is working closely with the Ft. Hill group on the HF issues associated with this project. His understanding is there will be an SRM panel next month.
- The Health and Wellness activities:
  - February's content will debut the Health and Wellness arm of the HPT and will explain the 8 areas that the office will attempt to cover.
  - A formal scoping document is all but agreed to and should be completed this month.
- The residence engineering work Mr. Barrett mentioned last update is no further along, so he really has no new information other than he has peeked the interest of AJI leadership on the concept.
- Mr. Barrett worked with Dean Iacopelli (NE RVP) on a draft for Article 55 for the successor CBA. Mr. Barrett believes we have a good proposal that will capture all anticipated activities for the HPT

WEATHER: Matt Tucker (ZTL) leads NATCA's efforts as the Article 48 Representative for Weather. Mr. Tucker's update for this week is below.

- **American Meteorological Society (AMS) Annual Meeting**
  - Within AMS is a group known as Aviation, Range, and Aerospace Meteorology (ARAM) this group conducts panels that are relevant to aviation and especially air traffic management. Some of the panels focused on in-situ reporting of airborne weather phenomena. Aircraft based sensors currently measure for wind, temp, water vapor, and turbulence. Most of these reports are currently on broadcast to the company via ACARS or if the company is part of a research program the information may be broadcast to researchers or private company that is using the date

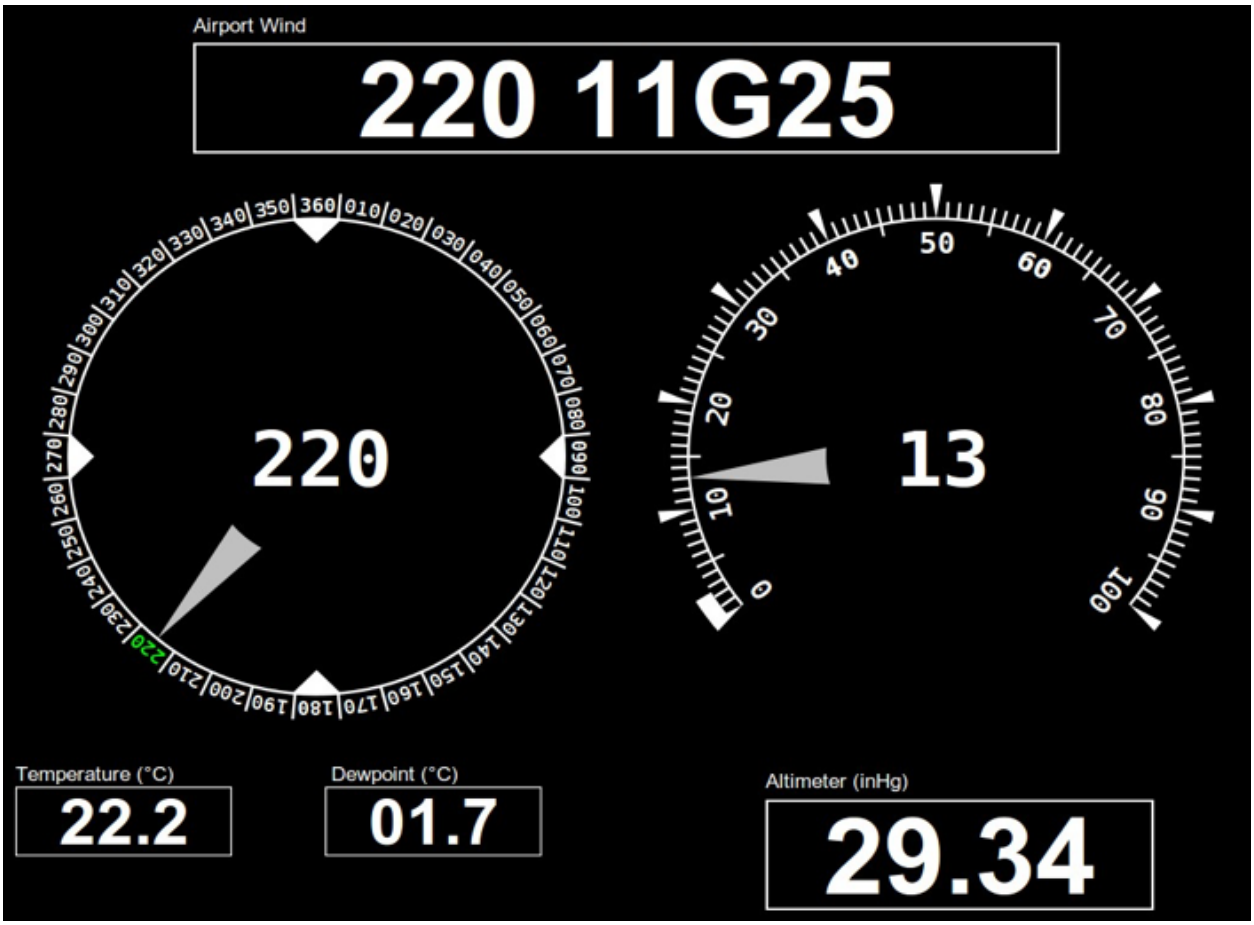
for subscriber based information. The FAA currently funds some date downloads of wind and Temp data to augment weather forecasts and update wind models that are used in TBFM and conflict probe in the ETFS. Water vapor research is being conducted to determine icing type and intensity, one of the sensors that is being used is also be used to research volcanic ash detection. This research is only being conducted on a very limited number of aircraft at the current time. There are plans to expand the research and equipped fleet by 2020.

- One of the onboard reporting items that have the most potential for air traffic control is the turbulence detection. Through the use of accelerometers the aircraft can report the intensity of turbulence encountered. This information is currently reported as Eddy Dissipation Rate (EDR) and Derived Equivalent Vertical Gust velocity (DEVG) both of these are very aircraft specific. There is currently a number of studies being done around the world using EDR to determine the type and intensity of turbulence being reported by the aircraft and then by the flight crew. One of the studies being conducted by another country was using weight classes to try comparative readings from the aircraft. The issue Mr. Tucker pointed out to the conductors of the study is that they really need to make sure they are comparing apples to apples. The example that was used consisted of EDR data collected from both Boeing and Airbus airframes but they were comparing B777-200 to the EDR of A320/321. They were advised that using aircraft of such weight differences was why they were seeing very inconsistent data. They also had a hard time comparing EDR to PIREP information. In the long term this research could result in a numerical based turbulence reporting system taking out the subjectivity that currently plagues the system. In addition to a standardized reporting format with datalink and ADS-B in and out aircraft could transmit what their aircraft is reporting to surrounding aircraft and take the controller out of the loop. Also if all aircraft were transmitting the information down it would enable forecasters to create much better and accurate turbulence forecasts than what are currently available.
- The FAA is currently funding studies based on water vapor sensing from onboard sensors in the climb out phase of flight to determine the cloud bases around an airport. This research could result in more accurate ceiling information around an airport. The ASOS that currently creates the METAR for an airport only has one ceilometer at most airports thus only report the cloud heights directly above the sensor. Use of water vapor data during climb and decent could replace the ceiling information in the METAR providing a more accurate picture of the ceiling conditions around an airport. The same sensor has the ability to detect icing that could impact the aircraft sensing systems I.E. Pitot system. This detection capability could provide better information that they are encountering conditions that may affect the readings on the aircrafts angle of attack and airspeed. This is the issue that contributed greatly to the Air France 447 accident off the coast of Brazil. In addition the water vapor sensor paired with a laser based particle sensor can detect volcanic ash and provide air

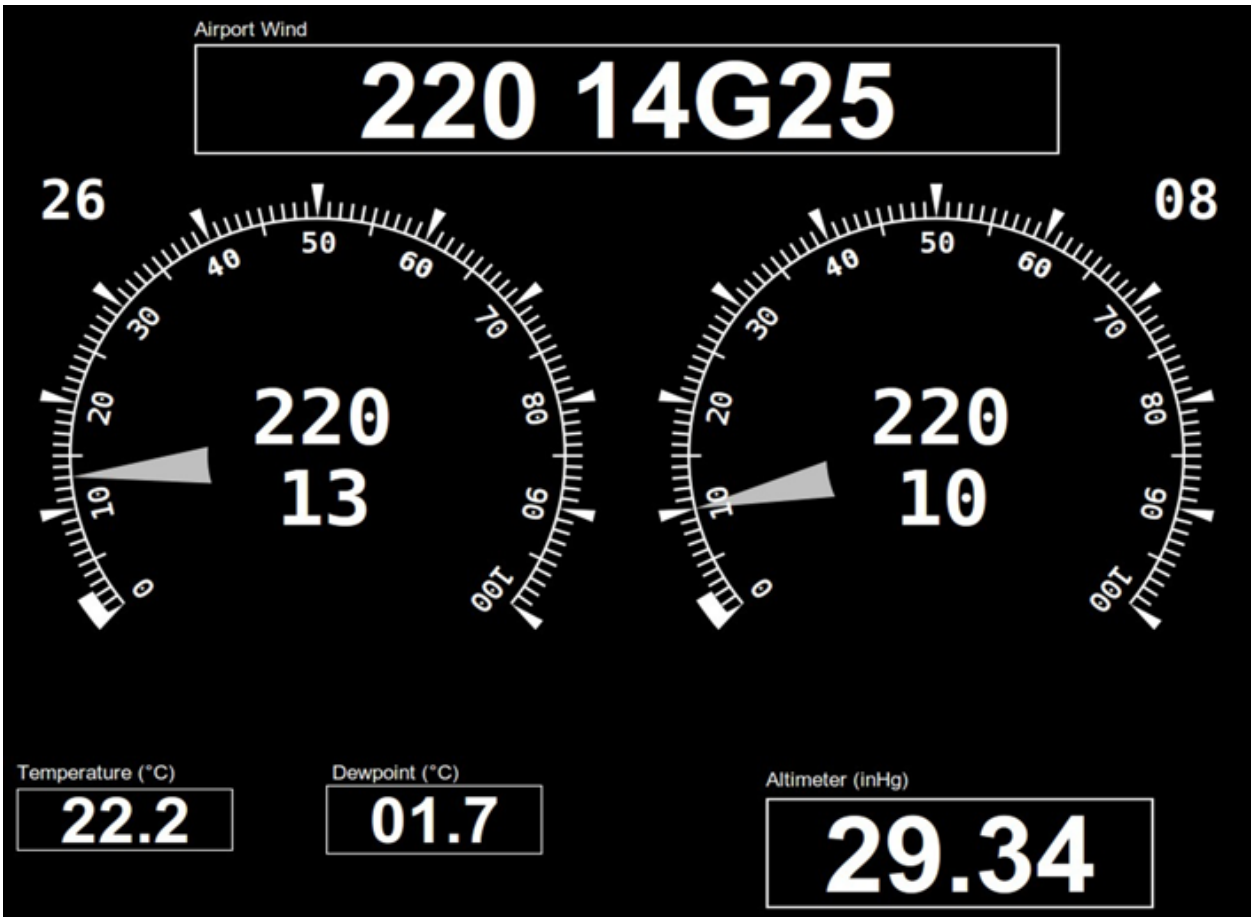
crews with accurate ash locations and intensity thus possibly resulting in less impacts from an volcanic eruption like the one in Europe that ground flights due to lack of accurate ash cloud location information.

- Multiple panels were held about volcanic ash, ranging from airborne detection to using satellites for early eruption detection. Currently NOAA has created a satellite based system known as Volcanic Cloud Analysis Toolkit (VOLCAT), this system has the ability to:
  - 1). Identify volcanoes that are in a state of unrest prior to an explosive eruption,
  - 2). Detect explosive volcanic eruptions in a timely manner and provide alerts to VAAC's and volcano observatories,
  - 3). Track volcanic ash clouds,
  - 4). Extract information on volcanic ash cloud height and amount,
  - 5). Generate the parameters needed to initialize volcanic ash dispersion and transport models.

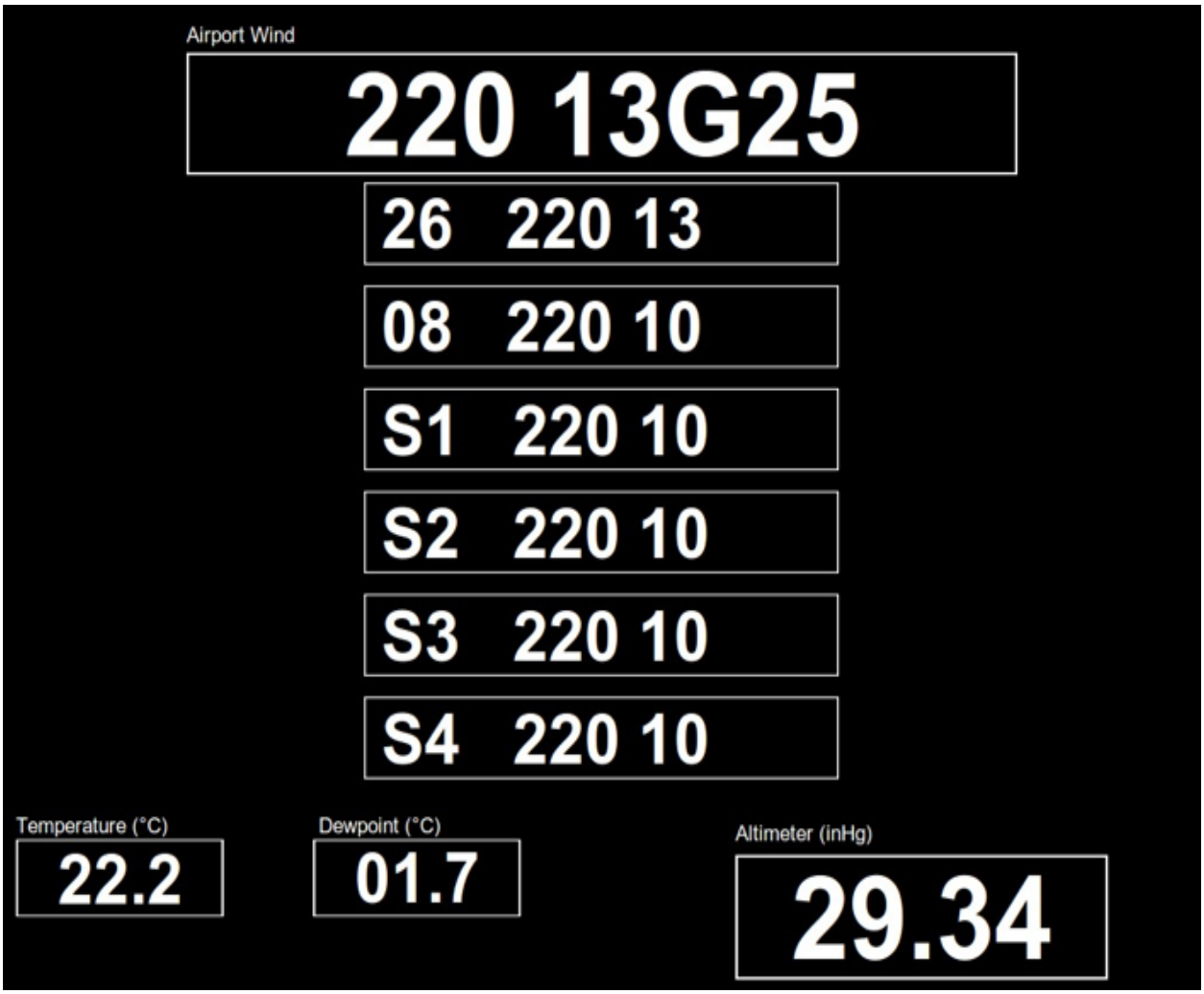
- Surface Weather System (SWS)
  - The SWS is designed to replace the old vane and cup anemometors that are in a large number of control towers around the NAS. The system consists of an Ultra sonic anemometer, temperature and dew point sensor, and an barometric pressure sensor. All the new sensors are new generation Visalia sensor that have on board diagnostics. The anemometer has rotating spikes to help keep birds off of the sensor and also can tell if there is an obstruction between the three sensor heads and will adjust the sensing to correct. The displays for the system are ten inch displays that will show the airport wind, temp/dew point and altimeter.
  - At airports with multiple anemometers the display is configured two ways. At sites with only two sensors the display will show two side by side wind roses with the airport wind as a ribbon read out. The airport wind will be a 2 minute average just like the ASOS winds and the current wind shear systems in the NAS. The two wind roses will be continuous readouts of direction and speed. Only the airport wind will display gust information. At airports with more than 2 sensors all the winds will in a ribbon format. The airport winds will use the 2 minute average and the other ribbon winds will be 30 second averages. Operational testing is set to begin any day at OKC and the system is currently being tested at ONT. There are a couple of other test sites to be determined due to the need to test the system interface with the IDS-R/NIDS. Samples of the displays are below and are subject to minor changes during testing.
- Single sensor system



Two Sensor System



Multi Sensor system



Dale Wright
Director, Safety and Technology