



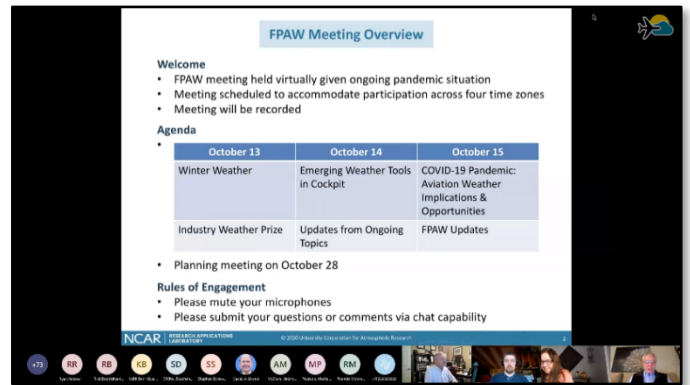
Fall 2020 FPAW Plenary Meeting Summary

The Fall 2020 FPAW Plenary Meeting took place virtually 4-5 hours daily over three consecutive days in mid-October. The meeting was attended by an average of just over 90 participants each day. The half-day Fall 2020 FPAW Planning Meeting, attended by more than 30 people, was held two weeks later, in late October. Summaries of both follow.

Fall 2020 FPAW Meeting Day 1 (Tuesday, October 13, 2020, 11:00 AM – 3:00 PM EDT)

Day 1 Session 1 (11:00 AM – 2:30 PM EDT)

FPAW co-chairs Matt Fronzak (MITRE) and Matthias Steiner (NCAR) opened the meeting promptly at 11:00 AM EDT via MS Teams, with Dave Strand (MITRE) overseeing and coordinating the Chat Log. After going over meeting logistics, the meeting was turned over to Josh Paurus (MSP Airport), the lead of Day 1 Session 1, titled “*Winter Weather.*”



Day 1, Session 1 Getting Underway

Stephanie DiVito (FAA) kicked off the half day focus on winter weather with an update on the In-Cloud Icing and Large-drop Experiment (ICICLE) project. She explained the process of collecting, documenting, and assessing data collected through numerous test-flights into forecast and known icing and non-icing conditions. The program has many goals in mind, primarily targeted to improved diagnosis and forecasting of icing conditions.

Gordy Rother (FAA) discussed the ongoing initiative to include Braking Action Reports in a specific PIREP field and/or standardized format. A list of proposed braking action contractions was discussed, as well as possible changes needed to the PIREP reporting system. The end goal of having Braking Action PIREPs is improved safety and operational efficiency – namely reducing the risk of runway excursions and overruns.

Matt Wandishin (NOAA) discussed a collaboration that NOAA undertook with NCAR, NWS and the Denver International Airport regarding forecast uncertainty information for winter weather events. The goal was to understand how decision-makers at the airport currently use this forecast information, and how the forecasts can be improved and used more effectively by those charged with operating the airport safely and efficiently.

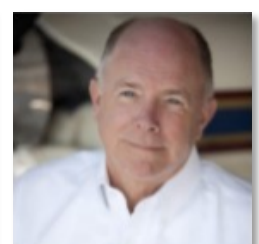
For the final segment, Josh outlined current methods of “forecasting” when a runway will need to be closed for treatment during a winter storm, which led to a partnership with Seth Linden (NCAR) for the development of a new automated decision-making tool. Seth presented a detailed look at how the Runway Friction Closure Prediction System (RFCPS) uses data modeling with numerous inputs such as current and forecast weather data, airport runway friction data, and runway treatment data to truly forecast when runway closures may be needed. Further development is planned, but the tool shows great promise to further refine safe and efficient airport operations.

Day 1 Session 2 (2:30 PM – 3:00 PM EDT)

Captain Tim Miner (APA), on behalf of the Consortium of Aviation Weather Users (Airlines for America [A4A], Aircraft Dispatchers Federation [ADF], Air Line Pilots Association [ALPA], Aircraft Owners and Pilots Association [AOPA], Allied Pilots Association [APA], National Air Traffic Controllers Association [NATCA], National Business Aviation



Dr. Roy Rasmussen



Tom Horne

Association [NBAA] and Range Commanders Council – Meteorology [RCC-Met]) announced that Dr. Roy Rasmussen, a Senior Scientist and Section Head of the Research Applications Laboratory’s Hydrometeorological Applications Program, at the National Center for Atmospheric Research (NCAR) had been named the winner of the 2020 Aviation and Space Operations Weather Prize. Tim also announced that Mr. Tom Horne, AOPA Pilot Editor at Large, was presented an Aviation Weather Service Award. Congratulations to both winners for this well-deserved recognition!

Fall 2020 FPAW Meeting Day 2 (Wednesday, October 14, 2020, 11:00 AM – 3:30 PM EDT)

Day 2 Session 1 (11:00 AM – 2:00 PM EDT)

Captain Rocky Stone (United Airlines) introduced his panel, which was focused on the connectivity being deployed by airlines that is allowing for updated graphical products to be deployed in the cockpit. He then led off the session with a discussion on Collaborative Decision Making (CDM) and how the cockpit has minimal involvement currently. Improved graphical weather and traffic flow management products make it possible for the cockpit to be more involved than before in requesting trajectories that are different from those prescribed by FAA Traffic Management Initiatives (TMIs). Rocky discussed the role of the pilot and the dispatcher in a typical FAR Part 121 operation and how the synergy of pilots working with new graphical products and their dispatcher may lead to requests from the cockpit for deviations from TMIs. This in turn could hasten the entry into and exit from TMIs.

Roger Sultan (ALPA) followed up with his perspective of cockpit involvement in CDM. Training and clear ground rules are key to effective pilot involvement. Debbie Kowalewski (ADF) followed up with the dispatcher perspective on coordinating with ATC and the ATCSCC for exceptions to TMIs. Dispatchers do this today for flights prior to departure, but with the new information available in the cockpit it makes sense to extend this capability for dispatchers to aircraft inflight.

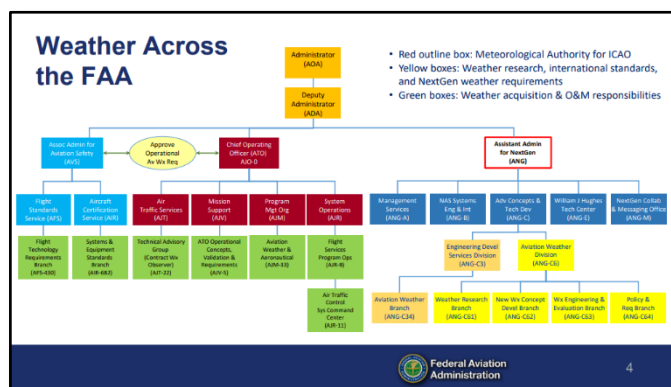
Finally, John Kosak (NBAA) completed the panel with a discussion of the NBAA perspective. Since most professional general aviation pilots do not have a dispatcher to lean on, they act as their own dispatcher. In that capacity, they would like similar input into exceptions from TMIs as air carrier pilots, especially since, in many cases, they are the ones more likely to put on the extra fuel, making them able to take the non-standard routing.

At the end of a session that featured lively discussion, it was clear that there is room for growth and new ideas in this space. Session chair Rocky Stone and his panel look forward to participating in future discussions, in FPAW and elsewhere, on cockpit involvement in CDM.

Day 2 Session 2 (2:00 PM – 3:30 PM EDT)

Tom Ryan (AvMet Applications) hosted the first of what is intended to become an FPAW fixture, namely a status review of key initiatives briefed at prior FPAW meetings. This review featured presentations from Bill Bauman (FAA), Steve Darr (Dynamic Aerospace), and Walter Combs (FAA).

Bill briefed the group on the progress of the FAA’s Weather Community of Interest (Wx COI), an effort that had been mentioned at the past several FPAW meetings. He shared a fascinating diagram that showed the extent to which weather issues are currently being worked across the FAA, and shared that the goal of the Wx COI is to break down the “silos of excellence” that stand in the way of effective cross-agency coordination. While it is still early, the breadth of FAA participation in the Wx COI and the engagement and energy level of the participants has so far surpassed expectations.



Weather Across the FAA, from Wx COI Briefing

Steve provided an update on the status of the ADS-B Weather efforts, a follow-on to presentations that have also been given at the last several FPAW meetings. This functionality, delivered as an optional feature of ADS-B V3.0, enables fully

automated, routine broadcasts of meteorological and other data sensed or derived onboard a properly equipped aircraft, and it provides an on-condition broadcast of pilot-observed weather data (i.e., a PIREP). After reminding FPAW that no mandate for this equipment is planned, Steve dove further into ADS-B Wx details, and posed a series of implementation questions that remain to be answered.

Finally, Walter delivered a follow-up to the excellent Weather Camera Program briefing that was presented at the last FPAW meeting. Progress continues to be made in installation and use of Weather Cameras, with the State of Colorado recently installing more than a dozen in key mountain locations, and the State of Hawaii making preparations to implement a similar number in the coming two years. Walter also updated FPAW on the Visual Weather Observation System (VWOS) effort and the work of the Pilot Report (PIREP) Refinement project.

Visual Weather Obs System (VWOS)

- Modernized Weather Camera Data Platform**
 - Combines 360 cameras and wx-obs into one platform
 - Provides Supplementary (Advisory) Observations
 - High value to NWS Forecasts (e.g., LAMP, AAG)
- Automatic self-certification**
 - Sensor auto-calibration, Sensor data validation, auto-reports sensor/data failures
- Collaborative development**
 - Flight Standards and WCAMs teams
 - Test and Development (R&D) Program
 - Four AK airports: Palmer, Eek, Tatitlek, Healy River

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ELEVATION - VIEW

Visual Weather Observation System (VWOS)

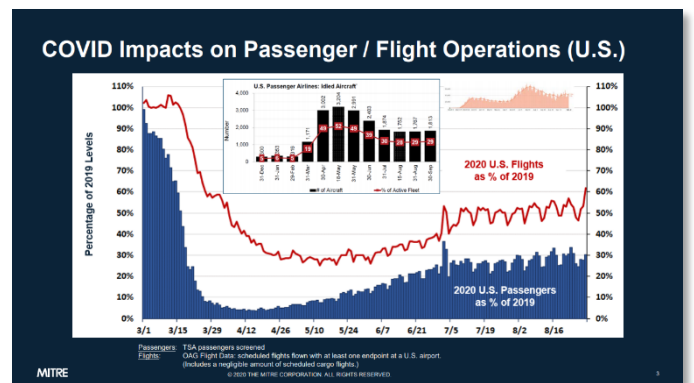
Fall 2020 FPAW Meeting Day 3 (Thursday, October 15, 2020, 11:00 AM – 3:30 PM EDT)

Day 3 Session 1 (11:00 AM – 2:00 PM EDT)

Mike Robinson (MITRE) led a fascinating session focused on the impacts of COVID-19 on aviation.

The first portion the session was focused on the impacts of the pandemic on the aviation ecosystem. Passenger numbers have plummeted since mid-March, and scheduled airlines have struggled to adapt their schedules and operations to these changes in a consistent way, given that long-held models of both no longer appear applicable. In turn, air navigation service providers, such as the FAA, have had to evolve legacy practices to accommodate the new staffing and air traffic management realities associated with COVID-19.

Conversation then turned to a wide range of sub-topics related to the impact of COVID-19 on aviation weather and the aviation weather community: NWP Data Assimilation during COVID, Changing Operations with New Constraints in Focus, Weather Research Priorities in the New Economic Reality. Climate-Forward Opportunities, Increased sUAS Opportunities, Increased Ops Integration and Human Impact on Met Operations. Although each sub-topic was covered, two featured short presentations.



COVID Impacts on Passenger/Flight Operations (U.S.)

With respect to NWP Data Assimilation during COVID, Eric James (NOAA GSL) shared the results of analyses on the effect of fewer *in situ* airborne weather observations on the accuracy of numerical weather prediction models. Unlike what took place after 9-11, when there were ZERO aircraft in the air for approximately 48 hours and a demonstrable reduction in NWP model performance was noted, the reduction (but not elimination) in the number of aircraft flying due to COVID has not produced a decrease in NWP model performance that can be distinguished from background noise.

Gordy Rother (FAA) shared information about a rule change that the FAA has implemented to resolve a situation affecting some U.S. carriers. COVID-19 has resulted in key observation personnel not being available during operational hours at certain foreign airports, for which surface weather observations (i.e., METARs) require input from human weather observers. The FAA Flight Standards team has written an alternative set of weather observation and forecast requirements that can be used whenever this situation occurs, regardless of whether it is due to COVID or some other reason (e.g., industrial action).

After a short break, the session concluded with a long, wide-ranging discussion among panelists and audience members on several of the individual aviation weather topics listed above. These were selected by the audience via polling at the break, a capability made possible by conducting the meeting virtually.

Day 3, Session 2 (2:00 PM – 3:30 PM EDT)

The final segment of the last day covered FPAW administrative and organizational matters. Co-chairs Matthias Steiner and Matt Fronzak reminded the remaining meeting die-hards that the Fall 2020 FPAW Planning meeting was scheduled to take place on October 28th. The group decided that the Spring 2021 FPAW Plenary meeting would be virtual, at TBD dates sometime between the middle of March and May. The group was reminded that FPAW has a new, highly useful website at <https://www.fpaw.aero>, and that emails containing future FPAW activities and calendar invitations for upcoming FPAW meetings are only sent to those who register (FOR FREE!) on the FPAW website.

Finally, an extended conversation centered around the role and utility of FPAW took place. This topic, which has been discussed at each of the last several FPAW plenary meetings, continues to be “nudged” by FPAW leadership. We hope to have some draft material posted on the FPAW website in the coming weeks. We will be asking for feedback from you, the regular FPAW audience. But the only way you will know about this is to register (did we mention it is FREE?) on the FPAW website. So, please, please, take the plunge, sign up, let us know you are out there. Once it is posted there (an email will be sent out when we post it), plan to weigh in on the soon-to-be-proposed organizational material.

Fall 2020 FPAW Planning Meeting (Wednesday, October 28, 2020, 11:00 AM – 3:00 PM EDT)

The virtual Fall 2020 FPAW Planning Meeting took place two weeks after the Fall 2020 FPAW Plenary Meeting. FPAW co-chairs Matt Fronzak (MITRE) and Matthias Steiner (NCAR) opened the meeting promptly at 11:00 AM EDT via MS Teams. There were more than 30 attendees at the meeting – thank you, all!

Given that the just-concluded virtual, multi-day Fall 2020 FPAW Plenary Meeting was the first of its kind (recall that the virtual Spring 2020 FPAW Plenary Meeting was a one-day meeting), several minutes were spent reviewing it. Attendees voiced support for the general meeting format (three consecutive days at 4-5 hours per day, each consisting of one long session and one shorter session), the selection of topics and the use of MS Teams, including its Chat room feature. Several participants suggested that breaks were either too few and/or too short. This was noted by FPAW leadership.

Dates, locations and formats (in-person or virtual) for the 2021 FPAW Plenary Meetings were discussed next. The group decided that the Spring 2021 FPAW Plenary Meeting will take place virtually over three consecutive TBD days between late March and early May 2021, using the same format as the Fall 2020 FPAW Plenary Meeting. Likewise, the Spring 2021 FPAW Planning Meeting will be a four-hour meeting occurring on an appropriate midweek date 1-2 weeks after the Plenary Meeting. Attendees agreed that it was too early to decide if the Fall 2021 FPAW Plenary Meeting will take place in person or virtually. However, late October/early November 2021 was identified as the target timeframe.

A review of potential topics for the Spring 2021 FPAW Plenary Meeting next took place. These came from three separate sources: A General FPAW Topics list, a Newly Submitted FPAW Topics list and a Previously Considered Topics list. Following spirited discussion among the participants, the following three topics (and Session Leads) were selected to be featured in the Spring 2021 FPAW Plenary Meeting:

1. Filling the Pilot Briefing Weather Gap (Janet Ford and Jim Haseman/Capital Group DC)
2. Non-Traditional Weather Observation Sources and Standards (Steve Darr/Dynamic Aerospace, Inc.)
3. Operational Airspace Capacity Estimation/Prediction (Le Jiang/IMSG)

Finally, the Fall 2021 FPAW Plenary Meeting was considered. Given that FPAW had postponed the full Federal Weather Review planned for this past spring due to the pandemic, and that the group felt there was a reasonable chance of being able to meet in person in the fall of 2021, the decision was made to target, at this time, a multi-day Federal Weather Review for the Fall 2021 FPAW Plenary Meeting. A large room has been reserved in the Washington, DC area for this meeting, and a go/no-go decision will be made at the Spring 2021 FPAW Planning Meeting, so be sure to plan to attend!