

Thursday 5/11 - Meeting with TFMS SME and Mosaic ATM

Agenda

- Collaboration Feature Question
 - How important is it to know someone's name or identity when communicating with them (compared to their position)?
- ATM Software questions
 - Desktop vs Web-Based Application?
 - What are the current pain points with TFMS applications?
- Communication
 - What recurring meetings do ARTCCs or the command center have?
 - What are names for these meetings? [How are these meetings grouped?]
 - Can you talk more about the communication / collaboration among FAA colleagues related to AFP planning and implementation?
 - How is that facilitated through current TFMS applications?
- NTML
 - Can you talk about the process for requesting / approving a restriction through NTML? (facility to facility)
 - How does the ARTCCs interaction with NTML differ from the command center?
 - What information do you prioritize in NTML?
 - What are the most relevant NTML options on the left menu and what are they used for?
- Post-event review
 - How is the FAA Toolbox used for post-event review?
- What shapes do you draw the most (circle, polygon, line, etc.) when evaluating/modeling AFPs?
- Division of labor within command center and ARTCCs

Notes


- [Zoom Recording of Meeting](#)
- Engineering Degree
 - Pilot
 - Went off to Houston Center (retired 32 years later)
 - Started at Houston, switched back to Minneapolis
 - Air Traffic Controller, then Supervisor out in Minneapolis Center's airspace (Billings, Montana to near Tortonto, Canadian Boundary; from the north side from winnipeg to south of kansas city)
 - 23 en-route centers, all have a TMU, lot of large towers/TRACONs with TMUs there
 - All report to the Command Center (almost like Mission Control, overseeing the entire mass; they run the show; coordinating with all the facilities)
 - 24 of 32 years in traffic management (at the Minneapolis Center TMU)

- On the teams who developed the top menus of TSD (in addition to other important features)
- Retired in 2015
- Currently a systems engineer for Mosaic ATM employed specifically as a Traffic Management systems expert
 - For Mosaic, they are the expert in Traffic Management Systems
 - Perfect Resource for us
 - Working on FMDS project for Mosaic
- Overview (demonstration of day in-day out the people who are using FMDS)
 - Every morning, TMUs (5 am to 11 pm, some 24/7) open up and start their day by looking at what is going on in the NAS
 - Every morning, the Command Center holds a Telecon (around 6 am) that goes every two hours throughout the day
 - Every facility in the NAS, every operator, all the GA representatives, all the airlines get on the call to discuss all the constraints in the NAS and plan for where these constraints will be and issue TMIs throughout the entire day
 - Every two hours, they update the plan as conditions change
 - Looking at weather and flights on TSD (decision-support tools)
 - Being able to look at what is going on in the NAS and having these decision-support tools to do better planning
 - Planning starts the afternoon prior through the PERTI Plan
 - Look at the next day so when the staff comes in the next morning, the plan has already been started the previous day
 - TFM Learning
 - If you need to learn anything, this has the course that covers the TMI of interest
 - Viewing Today's Advisories
 - Show all Advisories (on today's date)
 - Can go back two weeks back
 - Shows everything that is going on in the NAS
 - Goes by Zulu time
 - A lot of the first entries may be from the night prior
 - Some things that are wrapping up last night
 - Look at what's happening earlier in the day
 - OPS Plan is one of the first advisory plans
 - This aggregates all of the information (as OPS Plan can update every two hours)
 - The two hour Telecon updates every iteration
 - ZMP Swap Plan (refers to Thunderstorms)
 - Can further interact with the advisories to see more specific information
 - Playbook PDR Version
 - Made the Playbook

- Wrote the proposal on July 14th, 1999
 - Currently 124 pages long (terminal and trans-con)
 - Will request reroutes based on particular need from particular weather
- TCF (TFM Convective Forecast)
 - What is used for planning all the time
 - Creating a training scenario for a specific date (in the past)
 - Drives all decision making in terms of planning
 - The time toggle starts at 1z then increments by 2 (1z, 3z, 5z, etc.)
 - Weather is displayed on TSD as well
 - Is this information overlaid onto the TSD or would the TMU have to navigate to this website?
 - This is available on one of the drop-down menus
 - Can display current weather
 - Rain shows up as Green on TSD
 - Can filter out different altitudes to see different convection
 - “When the tops go high, there’s a really bad thunderstorm”
 - One TSD for Minneapolis departures and arrivals, one for O’Haire, one for Denver, Newark, Laguardia, JFK, all on one particular screen
 - Miles-In-Trail: procedure to space planes out so they are not all squished together
 - On a normal day, volume can be a big driver
 - Metering closer to the airport
 - Controllers are given a closer delay time
 - Weather and volume are the two largest constraints
 - Then you have rocket launches, re-routes, delaying airplanes
 - In terms of volume, from Command Center perspective are you looking by airport?
 - Yes, the real pointed end of the spear is the arrival rate at the airport
 - San Francisco has a high demand
 - Every day at 10 AM they have to deal with a weather issue that causes them to cut their rate in half (due to fog in the bay) and then it eventually is lifted
 - Timing of weather and arrival rate of SF
 - Another big driver is sector capacity
 - In TFMS system there is monitor alert
 - For each sector in the NAS, each one has a capacity
 - Centers (ZJK, etc.), within each center they are divided into areas of operations and controllers are assigned to work in one of those

- areas (Usually 6-8 areas per center), within each area there are sectors
 - In sectors, monitor capacity, then with weather
 - Playbook routes are used to move traffic away from the red sectors
 - This Monitor Alert program alerts users ahead of time when the sector is going to go “red” (red is bad, green is good)
 - When you go red, an action has to be taken to resolve the issue
 - AFP is a really complex TMI
 - Was on the team who developed AFPs
 - Prior to AFPs, there was nothing to manage airspace
 - To slow down, they would throw out Ground Delay Programs and hoped it allowed the NAS to absorb the complexities and volume issues
 - If we slow those flights down, we should make it easier for controllers to safely manage traffic
 - Only impacted airlines at the large airports
 - AFPs came up to deal with this issue
 - If your flight goes through the line, you are a part of the problem, you are part of the solution
 - No matter what airport you’re departing from or where you’re going to, you get an EDCT
 - Anyone has the opportunity to depart on time as long as they reroute themselves around the AFP lining space
 - Created extra volume in Canada
 - Had to develop whole system of CAN routes (for Canada) because people tried re-routing North
 - Has experience with CDM (Collaborative Decision-Making)
 - Could be worthwhile to ask more questions about collaboration
- How important is it to know someone’s name or identity when communicating with them (compared to their position)?
 - Not that critical, although inadvertently it helps to know people and establish relationships
 - Not really critical to know the names because the turnover in traffic management has been intense (lot of retirements, lot of new people coming in)
 - Important to know what facility they’re from
- Have moved away a lot from telephones, but telephones are still used often
 - Command Center either approves the restriction, or if they deny it it requires a conference call
 - Command center needs to approve all teleconferences
 - Rather than requiring approval, maybe just including them in the teleconference?

- “It was more efficient in the heat of battle” ← good quote that really emphasizes the craziness of the work they have and how doing this really did improve the efficiency of their work
- FEA is an evaluation tool, FCA is going to be used as part of a TMI
 - Only the Command Center can initiation an FCA
- What shapes do you draw the most (circle, polygon, line, etc.) when evaluating/modeling AFPs?
 - Almost exclusively a line on the map
 - This gives an instantaneous ‘crossing time’ ← new terminology
 - All flights are bunched together in bins of 15 minutes
 - Monitor alert to tell if a sector is red in 15 minute increments
 - A line allows you for instantaneous data as the second it passes the line, we can work with it
 - A polygon has it entering the polygon, then exiting the polygon
 - Therefore can be more complex
 - Normally used to identify a piece of airspace that is restricted
 - Military airspace
 - All military airspaces can be made into FEAs
 - For evaluating traffic flows, almost exclusively lines
 - If it is not a continuous line, you would have MA7 and other names where the lines change to reflect it is not a continuous line
- Segmented AFP
 - CAN AFP System (eastbound into the new york metros)
 - Historically validated rates
 - What is the acceptable throughout value?
 - Have to validate the traffic volume through that line in space
 - When you exceed that, you have to do something out
 - Restrict using ground delays, reroutes



Federal Aviation Administration
32 yrs 1 mo
Farmington, MN

- **Traffic Management Officer (TMO)**
2014 - 2015 · 1 yr
- **Traffic Management Supervisor (STMC)**
1991 - 2014 · 23 yrs
- **Area Supervisor (FLM)**
1988 - 1991 · 3 yrs
- **Air Traffic Control Specialist (ATCS)**
1983 - 1988 · 5 yrs