SWAP

An Industry Perspective

Federal Aviation Administration

SWAP

- **SWAP is a detriment to industry operations and customer experience. The following is a consensus of the planning and strategies during SWAP events from an industry perspective.**

Industry Planning

- **Airline Meteorologists, before the PERTI telcon in the afternoon, start forecasting for the next day's operations**

- **They relay the information to the airline ATC representatives to analyze for the PERTI discussion.**

PERTI Discussion

- **With the discussion on the PERTI telcon, the Critical Decision Window (CDW) is a particular point of emphasis for the industry.**

- **The CDW, for an airline, sets a point of initiation of the plan for the SWAP events.**

- **The PERTI plan is disseminated to numerous Business Aviation flight operators by the NBAA Air Traffic Services.**
  - This provides situational awareness and sets expectations for business aviation operators.

PERTI Planning

- After participating in the PERTI planning telcon, the information is relayed to the airline planning units to look at the next day's operation and potential impacts.

- Possible modifications to the schedule for crew integrity, customer experience, and equipment are evaluated with triggers put in place based on the CDW

Day of SWAP event

- **Airline meteorologists evaluate the weather as the day progresses to analyze the timing and relay the information to the airline ATC groups**

- **NBAA Air Traffic Services is following the current day's plan throughout the day via the ATC System Command Center Advisories/Planning telcons and relaying the information to their constituents.**

Possible Strategies and Throughput

- **As an airline, gate availability, and gate operation times are a large determinant when it comes to throughput.**
  - Gate occupation time is determined by:
    - Where the crews for the flights are coming from
    - How many customer connections we have
    - The ability to accommodate customers on flights the rest of the day.
  - Gate availability is determined by:
    - The rate of departures
    - Current or anticipated taxi times
    - The ability to have an open gate if gate returns are expected

Possible Strategies and Throughput

- **Communication with the facilities is paramount when determining these factors, and good collaboration with all organizations allows for a good plan going forward.**

- **The plan will be conservative or aggressive based on:**
  - Confidence of the meteorologist
  - Load factor of the day's operation
  - The location of impacted region

Possible Strategies and Throughput

- **The airspace is also considered, as some airports share the same departure and arrival fixes.**
  - Awareness of other airport surfaces is monitored, even though not served by a particular carrier, because of possible favoritism needed to avoid surface gridlock.
- **Low-rate GDPs are considered when the impact will affect a station, or an arrival/departure fix for some time.**
- **Considering a zero/airborne rate GDP for some time reduces the possibility of**
  - Diversions
  - Airborne holding
  - Ground stops
- **Using this tactic is not without risk, as the timing and forecast credibility at a station will be paramount, so as not to lose the efficiency of the operation.**

Low-rate GDP vs. Ground Stop

- **Low-rate GDPs for an airport generally help with surface congestion and throughput issues. Having a low-rate GDP frees gate availability in case of gate returns or high gate occupancy times. This could also reduce diversions and holding, provided the weather forecast that the GDP was built on was accurate.**

- **Having a low GDP rate would require monitoring in case of a forecast change.**

Low-rate GDP vs. Ground Stop

- **A good tool to use for enroute constraints is the Airspace Flow Program, but it can pose some challenges for the operators.**
  - While slowing traffic down in a particular region, it presents no bias on the airport impacted.
  - This could have a significant amount of traffic flowing to one particular airport and create surface congestion at that airport, while other airports do not have enough traffic.

- **Low-rate GDPs solve the issues at an airport level to relieve those problems.**

Dynamic weather throughout the year

- **Weather and weather types are always dynamic. Some airports have snow in the morning and thunderstorms in the afternoon. Airline operations centers are connected to meteorologists to assist in these dynamic weather patterns. Whether in the airline operator's office or the local national weather service offices, dispatchers and pilots have access to these services and are aware of the events.**
- **An airline operator has many daily company briefings in the operations center to discuss the weather and the plan for the current day as well as a few days out. The plan is updated, and modifications to the schedule happen routinely throughout the day.**

Dynamic weather throughout the year

- **As a SWAP event unfolds, the operators have many tools that allow them to monitor the situation and adapt their plan. As an example, operators have access to:**
  - TSD
  - FSM
  - CIWS/COSPA
  - ITWS
  - and many of the NSW models.
- **Each operator has access to their suite of tools for flight following, weather radar, enroute turbulence, and weather prediction displays to name a few. Access to the NOD is beneficial as the operators can see real-time restrictions and fix closures as well as predict airspace openings utilizing the RAPT.**

Dynamic weather throughout the year

- **One of the significant tool's operators utilize is a hotline.**
  - Listening to coordination on a hotline between the facilities keep the operators tuned into the ever-changing operation without needing to call a facility. Many of the questions that would arise are part of the discussions between the facilities on the hotline, and a phone call may not be necessary.

Ramp Closures

- **Airlines generally have the same rules for airport weather.**
  - Lightning strikes 5 miles from the airport, put the airport in yellow condition
    - Yellow condition gives the awareness to the ramp personnel that there is a potential of a ramp closure due to lightning
  - At a 3-mile proximity, the ramp is required to shut down for safety
    - Personnel take shelter, either staying in vehicles or moving to a secure area until the lightning moves beyond 3 miles.

- **The ground operations centers communicate this information to the Airline operation centers and the inbound flights for their awareness.**

Ramp Closures

- **Airline Operations centers, utilizing their Meteorology departments, access the time frames to determine the timing of the event. If lightning is around the airport for a significant amount of time, the inbound aircraft could be diverted to other airports to prevent gate congestion or a gridlock situation.**

Carrier Only GDP vs Airport GDP

- **Utilizing a carrier-only GDP for gate congestion during swap is a good tool for the airline operator as it allows us to control gate congestion easily.**

- **With AFPs, operators cannot define the exact number of aircraft to feed a particular airport, and gate conflicts can arise. By implementing a carrier-only GDP during an AFP, the GDP would act as a safeguard against that constraint; however, a byproduct would be the possibility of getting that particular carrier out of a larger delay through an AFP.**

Carrier Only GDP vs Airport GDP

- **Concerns about the carrier-only program**
  - Further constraints at the airport could lead to an all-industry program.
    - This requires a purge of the carrier program, a pause for approximately 10 minutes, and then the issuance of an all-industry program.
      - The pause is a data requirement to allow for delay equability
    - The revision to a full industry program would impact the original carrier again after the purge, and delay times would be adjusted again confusing customers on the departure times of their flights

- **Carrier programs work very well for gate congestion and deicing issues, but caution must be given to the possibility of a larger impact at the airport.**

Carrier Only GDP vs Airport GDP

- **There may be instances when two carriers with sizable operations at the same airport would request a carrier-only ground delay program.**
- **The current technology restriction allows only one ground delay program per airport.**
- **A mitigation strategy could be if there is a carrier-only ground delay program, and another carrier also needs a program, an airport-only AFP could be implemented.**

Regional Weather Briefings

- **These briefings are extremely helpful and ensure that the facilities and industry are working off the same forecast foundation.**

- **If it is known that there will be a discussion on the System Planning Telcon (SPT) about an impacted region, consider a preplanning weather discussion at the top of the hour before the SPT.**
  - The discussion before the SPT will give more focus on the SPT and not slow it down with weather discussions
  - The preplanning weather discussion and confidence in those forecasts must include facility and industry meteorologists
  - After all the weather discussions, a good foundation is developed to form a strategy for all

Regional Weather Briefings

- **Although not a desired avenue to discuss a regional operation plan on an SPT, sometimes it is necessary. Please keep in mind that any current operational issue should take priority and be addressed before a planning discussion.**

- **Planning discussions should include the industry that serves that airport or region, along with appropriate facilities.**
  - For awareness, towers are encouraged to attend, this gives everyone the strategy of what the plan is going forward throughout the event.