



National Weather Service
Employees Organization

Golden Triangle Initiative Accomplishments and Testimonials and Specific Services

The first year of the Golden Triangle Initiative, the work of aviation meteorologists helped cut the number of flight delays in half. See graphic p. 4 of this document.

Internal Performance Measurement:

- **FY15 Performance: nation cumulative FY15 POD is 68%, 3% above goal, and FAR is 31%, 7% above goal.** This is the percent of time that critically low cloud heights and visibilities were forecast ahead of time (POD) and number of times we incorrectly said they'd happen (FAR). In both situations, the Chicago/Romeoville office far surpassed the national goals and were among the best in the nation.
- **Golden Triangle (Chicago) for cumulative FY15 POD is 84% (83%) above goal, 19% (18%) better than goal and 16% (15%) better than nation.** The addition of a dedicated aviation forecaster allowed our office to far surpass nationwide NWS aviation forecast verification metrics.
- **IFR % Improvement TAF CSI Over MOS: Year 1: +49%, Year 2: +82% :** Tremendous improvements in our forecasts for visibility and cloud heights, 2 elements of vital importance in aviation ops)
- **TAF Thunderstorm CSI: Year 1: +23%, Year 2: +30%** (Immense improvements in thunderstorm forecasts)
- **Wind Shifts Requiring Airport Operations Reconfiguration - Number of Missed events: Year 1: -82%, Year 2: -72%, Year 3: -92%.** Wind shifts require Chicago Midway International Airport to reconfigure all of the flight patterns coming into and going out of the airport, with an average of more than 100 flights per hour landing at Chicago Midway International Airport during the day, flipping the airport due to a wind shift could take 30-45 mins of aircraft holding, burning fuel and large delays when un-forecasted wind shifts occurred. Being aware of the wind shifts ahead of time allows FAA to seamlessly flip the airport with little/no holding and delays. Chicago aviation forecasters dramatically reduced the number of infracts wind shifts by having a forecaster exclusively dedicated to monitoring aviation weather for things such as this.
- **TAF Lead Time on Wind Shifts that Require Airport Operations Reconfiguration: Year 1: +28%, Year 2: +37%, Year 3: +45%.** These numbers show how much additional time in advance of the wind shift that FAA was notified, the primary driving force of these wind shifts is lake breezes off Lake Michigan which forecast models cannot forecast well and require diligent attention that can only be provided with a dedicated aviation forecaster.

External Performance Measurement – Testimonials from key partners in the air travel industry:

- *"We are extremely happy with level of competency. CWSU folks are not satisfied with their own level of knowledge... they are constantly looking for even greater insight into convective impact or slight changes in the wind."* - Air Route Traffic Control Centers (ARTCC) TMO Dave Scaffidi

- *"Lake Michigan causes things to change, more dynamic than other parts of the country. Our meteorologists seem to be pretty on top of that. The working relationship is a very two way street both learning from each other."* - ARTCC STMC, Kevin Freidlein
- *"I'm really happy to see the NWS attending the [FAA Customer] Forum. They have been committed to delivering new services and are looking for opportunities to improve the communication of weather information that will enhance the decision-making process."* - Tim Matuszewski, Sr. Manager Air Traffic Services, United Airlines
- Two phone calls to thank the aviation forecaster for a heads-up phone call on June 29 storms that developed and moved into the terminal vicinity. *"The information really helped us out."* - Jay and John, O'Hare Airport Traffic Control Towers (ATCT).
- *"...can't get over the change in the CWSU. Every couple weeks they've got something new for us to look at."* - ARTCC Manager Bill Cound
- 2/27/2013: phone call from Tim Matuszewski, United Airlines, to inquire about the impact of sequestration – *"will NWS still be able to do all the extra services for Chicago?"* This is a sign of how important to operations they have become.
- *"A belated thank you to everyone at LOT for an excellent job on the big storm this past weekend. The TAFs we great, as well as the telecons and discussions. SWA was able to get ahead of things and get the cancellations in place to help our Customers, and keep our operation as efficient as possible. Please pass along our sincere kudos to everyone who worked this event".* – Rick Curtis, Chief Meteorologist, Southwest Airlines, February 2015

Specific Daily Services of the Chicago/Romeoville Weather Forecast office as part of the Golden Triangle Initiative:

- **IDSS briefings provided to FAA O'Hare Tower, FAA Midway Tower, FAA Chicago TRACON, O'Hare Operations, Midway Operations** - Dedicated aviation forecasters closely monitor weather conditions. Immediately initiate phone briefings to key local FAA facilities whenever adverse weather conditions threaten to impact aviation operations at O'Hare International Airport or Chicago Midway International Airport. The Chicago office averaged 3 calls per day, and ramped up to as many as 10-20 briefings per day during high impact weather (snow storms, thunderstorms, etc.).
- **Enhanced aviation AFD issued 10 times daily: Brief outlook for the next 5 days.**

The Chicago/Romeoville Office created a specialized forecast discussion tailored to the needs of the FAA that specifically addressed their needs, including highlighting any potentially high impact weather over the next 24 hours and providing an indication of forecaster confidence in various potentially high impact elements of the forecast. We issued these discussions 10 times per day vs. other offices that are not part of the Golden Triangle Initiative that issue them 2-4 times per day.

- **Experimental O'Hare Precipitation Outlook issued 3 times daily (in season):** Produced an in depth hourly forecast of key winter weather precipitation elements that would have Impacts on airport operations, including hourly snowfall rate forecast, mixed precipitation forecast, temperatures, wind direction/speed, etc. This highly specialized detailed forecast was produced and updated 3 time per day, with update time tailored to the needs of the FAA and airfield operations who are in charge of plowing and treating runways.
- **TAFs issued every 2 hours during the day and every 3 hours at night. Daytime issuances aligned with FAA planning telcons.** Frequent updates to aviation forecasts during daily high

travel volume times. Align forecast issuances with the regularly scheduled national 2 hourly FAA conference calls used for planning air traffic and weather impacts

- **FAA Planning Telcons:** Aviation forecasters participated in national 2-hour calls monitored throughout the day are critical to maintaining high situational awareness of FAA issues/concerns real time.
- **Aviation Response Meteorologist (ARM) at FAA Chicago Tracon:** Provided 28 operational briefings to FAA managers and controllers (following ZAU fire). During high impact weather, an aviation meteorologist would provide on-site weather support to FAA TRACON. This also occurred regularly during the extended period when the Chicago Air Traffic Control Center was closed due to a fire.
- **Redesigned CWSU webpages, new FAA/Airport Ops Facility Specific Web portal (heavily based on FAA input).**
 - **TRACON-scale thunderstorm decision aid** - Webpage that provided hourly detailed thunderstorm forecast maps that were updated every 2 hours)
- **Provide a devoted 16/7 Aviation Shift Forecaster.** (16 hours per day, 7 days per week, 365 days per year, we had 1 forecaster dedicated to nothing but aviation forecasting.

Ongoing Collaborations:

- **Recurring outreach collaboration such as NWS Aviation Weather Workshop and FAA Customer Forums.** Planned and hosted regular conferences and meeting with FAA and other aviation partners (airlines, pilots, etc.) to advertise our new enhanced services, gain feedback on the services, and seek input on what additional services were needed.
- **Weather education/training and impacts gathering ongoing with FAA, Chicago Department of Aviation, and United, American and Southwest Airlines.** Provided detailed weather training to non-meteorologists in the FAA and airlines who routinely use meteorological data in their jobs.
- **Established a continuous process for evolving/improving aviation services** using customer interaction, feedback, evaluation, and training.

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Weather and Non-weather Delays 1 June – 31 August

