Collaborative Aviation Weather Statement (CAWS)

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CAWS

Agenda

• Background
• Feedback from 2015 Operational Demonstration
• Path Forward
CAWS

Background-Conceptual Plan to evolve the CCFP

• Operational Bridging; OB is a set of weather forecasting processes with communication and engagement protocols between meteorologists and Traffic Flow Management (TFM) decision makers
• Focuses NAS weather forecast collaboration resources on events with highest potential for traffic disruption
• “Bridges” strategic and tactical time domains
• Supports CAWS product generation towards “Event Driven”, non-scheduled critical weather forecast information
• Goal: to issue CAWS at an optimal lead time for TFM decisions
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Background: CCFP Changes

• Evolution from “Human-In-The-Loop” (HITL) to an automated forecast
  – Leverages computer forecast models to draw polygons similar to forecaster drawn polygons
  – Issued year round (Started 1 November 2014)
  – 2, 4, 6, and 8 hour forecasts on web; 4, 6, 8 hour forecasts on TFM System/Traffic Situational Display
  – Issued every 2 hours at bottom of the hour prior to the Strategic Planning Call
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**Background: CAWS Concept**

- Product of the OB process
- Event-driven (non-scheduled) advisory for US CONUS airspace
- Issued for Thunderstorms
- Textual and graphical forecast disseminated to alert on thunderstorms exceeding thresholds critical to air traffic operations.
- Collaboration towards CAWS production led by Aviation Weather Center; NWS and Industry meteorologists collaborating
- Notification of CAWS via Command Center Advisory

Original plan was for a 2016 implementation
CAWS

Background: Why CAWS?

- Reconcile multiple, often conflicting forecasts
- Accelerate delivery of high-confidence forecast information to support timely TFM decisions
- Alignment with NextGen towards Single Authoritative Source
- Human Over The Loop (HOTL) assessment of automated forecasts
- CCFP & CAWS used together by TFM to support Traffic Management Initiative (TMI) decision making strategies
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Background: 2015 Operational Demonstration

• Learning experience for producers and users
• Formal evaluation and assessment determined operational value and refined requirements
• Feedback needed to improve operational value
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Feedback

Live field observations
April – September 2015

• Observe collaboration processes, notification, and dissemination protocols
• Objectively evaluate, validate, and define CAWS product performance requirements
• Evaluate usability, effectiveness, and areas of potential improvement for OB and CAWS
• Obtain feedback from TFM decision makers regarding perceived utility of OB and CAWS
• Document issues and lessons learned
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Feedback-Producers

• Chat room is useful but need white board for collaboration
• Constant collaboration of non-scheduled product is difficult; adding a scheduled component would help
• Need more airline participation in weather collaboration
• Need rules of engagement; standardization of “impacts” and what needs to be forecast
• Clarification of CWSU role for requesting CAWS issuance
• Ability to provide amendments
• Improve lead-times
• More consistency and need for quality control and metrics
• Move CAWS production to ATCSCC—NAMs with 51% vote
CAWS

Feedback-Users

- Improved communication between weather and TMU
- Sometimes adds definition to CCFP
- Need to sharpen focus and improve lead times
- Need to improve depictions of location, coverage and evolution
- Key Terminology needs to be standardized
- CAWS Graphic sometimes complex/hard to understand
- Add amendments to show evolution of forecasts
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Feedback-Users

- Need to add to TSD, ability to see both CCFP and CAWS
- Need a common collaborated product back
- Improve Auto-CCFP
- Provide forecast of weather significant enough to impact NAS, not NAS impacts
- Clearer definition for role of CCFP and CAWS
Path Forward for 2016

• CCFP will continue to be automated and available 24/7, 45 minutes prior to SPC. It will incorporate planned NWS upgrades of models in spring 2016

• CAWS concept maturity and evaluation will continue in 2016 with another Operational Demonstration (March-October)
Path Forward for 2016

- CAWS issued only when forecast different than CCFP and there is weather significant enough to impact the NAS
  - More scheduled-based in synch with CCFP issuance and Operations Plan published after Strategic Planning Call
  - Thresholds being defined now for coverage, confidence, tops, etc and this information will be available for training by January 2016
  - Delivered via the web: [www.aviationweather.gov/caws](http://www.aviationweather.gov/caws)

- CCFP & CAWS used together by TFM to support TMI decision making strategies
BACK-UP
Case Days

The Good and the Bad
JULY 7\textsuperscript{TH} (TUESDAY) OVERVIEW

- **CAWS Issuances:**
  - 15 Preliminary
  - 8 Finals
  - 0 Corrections
  - 5 Cancellations
- **AFP A05 & A08 issued 1600z valid 1700z-0259z**
- **Ground Delay Programs**
  - EWR, 1400 for 1500Z – Ceiling & Visibility (no use of the overflow runway)
  - JFK, 1540 for 1600Z – TSTMs
  - LGA, 1540 for 1600Z – TSTMs
- **Ground Stops**
  - JFK; 1730 1830z – Visibility
  - LGA, 2245 2345z for TSTMs
- **Total NAS Delay, 1942**
- **2 Diverts (JFK)**
13Z CCFP RUN (AVAIL AT 1230Z)

- 2hr valid 15z
- 4hr valid 17z
- 6hr valid 19z
- 8hr valid 21z
CAWS 003 ISSUED 1416Z VALID 15-2100Z

Preliminary CAWS issued at 1346z

SUMMARY: Increasing TS expected over eastern Great Lakes and OH Valley through 21Z.

DISCUSSION: TS expected to redevelop and intensify over eastern IN-northwestern OH-southeastern MI and expand east-southeastward by 21Z. Numerous TS expected from central ZOB-northwestern ZID-northeastern ZME by 21Z. Tops initially will be around FL350 increasing to around FL400 with max tops FL450 by 21Z. Additional CAWS expected in this area.
15Z CCFP RUN (AVAIL AT 1430Z)

- 2hr valid 17z
- 8hr valid 23z
- 4hr valid 19z
- 6hr valid 21z
SUMMARY: Probable...developing TS northeastern ZNY-western ZBW after 16Z

DISCUSSION: SCT TS developing over eastern PA-northern NJ-eastern NY will spread northeastward into western New England by 20Z. Activity will impact New York terminals and areas northwestward. Coverage should remain SCT. Tops generally FL350-400. Additional CAWS not anticipated.

15Z CCFP has a reasonable depiction of this activity. This CAWS highlights area with slightly higher confidence and coverage.
CAWS Issuances:
22 Preliminary
5 Finals
1 Corrections
0 Cancellations

• **433 Total NAS Delays**,  
• **Only TMI for TSTMs was a Ground Stop for IND**

Ops Plan:
16z- TERMINAL CONSTRAINTS: BOS/NY METROS/PHL/DC METROS/CLT/ATL-TSTMS  
18z- TERMINAL CONSTRAINTS: BOS/NY METROS/PHL/DC METROS/CLT/ATL-TSTMS  
20z- TERMINAL CONSTRAINTS: BOS/NY METROS/PHL/DC METROS/CLT/ATL-TSTMS

1730z TAF:
BWI VCTS from 0000z  
CLT TEMPO 22-0200z TSRA  
DCA VCTS from 0000z  
IAD VCTS from 0000z
ARTCCs affected: ZBW, ZDC, ZNY, ZTL
Terminals affected: KBOS, KBWI, KCLT KDCA, KEWR, KIAD, KJFK, KLGA, KPHL

SUMMARY: Scattered TS are expected from central NC northeastward thru central NJ to southeastern MA thru 23Z.

DISCUSSION: Scattered TS from central NC northeastward thru central NJ to southeastern MA, with tops FL450, are expected to move slowly eastward/southeastward thru 23Z.

17Z CCFP does not capture any TS activity for this region.

Another CAWS is not probable after this CAWS expires. (CAWS 003 was not cancelled)
JULY 23rd (THURSDAY) OVERVIEW

- **CAWS Issuances:**
  - 14 Preliminary
  - 3 Finals
  - 0 Corrections
  - 1 Cancellations

- **Total NAS Delay 1069**
- **ATL Diversions: 29**
- **ATL Ground Stop 1800-1923Z (TSTMS)**
- **ATL 1730z TAF:** TEMPO 2318/2321 VRB20G35KT 4SM TSRA BR BKN025CB
OPS PLANS

12z Ops Plan
TERMINDL CONSTRAINTS: ATL/CLT-TSRA
EN ROUTE CONSTRAINTS: ZWY/ZDC/ZTL/ZJX/ZMA/ZME/ZKC-TSTMS

14z Ops plan
CONVECTIVE ACTIVITY IS FORECAST TO INCREASE IN THE SOUTHEAST; ARRIVAL ROUTES FOR ATL COULD BE REQUIRED
ROUTES: AFTER 1400-ATL ARRIVAL ROUTES POSSIBLE

16z Ops plan
THUNDERSTORMS FORECAST TO AFFECT ATL ARRIVALS AFTER 1700Z AND CLT AFTER 1800Z; REFERENCE ADDED FOR POSSIBLE TRAFFIC MANAGEMENT INITIATIVES.
AFTER 1600 -ATL ARRIVAL ROUTES POSSIBLE
AFTER 1700 -ATL GROUND STOP POSSIBLE, 1800 CLT
11Z CCFP and TAF issuance

231120Z
2312/2418 28006KT P6SM BKN150
FM231400 29010G15KT P6SM VCSH SCT035 BKN150
FM231700 28010G15KT P6SM VCSH BKN040
TEMPO 2317/2321 VRB20G35KT 4SM TSRA BR BKN035CB
FM240200 27006KT P6SM VCSH BKN050
FM240500 27005KT P6SM BKN250
FM241400 30006KT P6SM SCT035

4hr valid 15z
6hr valid 17z
8hr valid 19z
CAWS 001 ISSUED 1402Z VALID 17-21Z

Preliminary CAWS issued at 1333Z

**SUMMARY:** Scattered TS Impacts across Gulf States with probable terminal impacts for KATL and KCLT

**DISCUSSION:** Scattered TS Impacts across Gulf States with probable terminal impacts for KATL and KCLT

17Z-19Z Developing area scattered TS Tops FL450 with probable terminal impacts by 18Z for KATL and 19Z for KCLT.

19Z-21Z Scattered increasing with occasional numerous TS and Tops FL450+

13Z run of the CCFP looked decent but CAWS provided for better timing.
CAWS

Path Forward for 2016

• Develop and publish guidance for use of CCFP and CAWS
• Identify and refine CAWS key elements (thresholds)
• Update CAWS ConOps and Performance Requirements—send to NWS
• Update training based on revised ConOps and requirements document
• Establish Quality Control/metrics
• Provide stronger program management support for overall effort—especially during Ops Demo