NWS IMPACT-BASED WEATHER SUPPORT TO ATCSCC AND THE NAS

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FAA/ATCSCC, Warrenton, VA
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FPAW/NBAA
Agenda

• Some Philosophy & Karma
• NWS Support to ATCSCC and NAS
• The 4 C’s...
• Summary
Some Weather Support
“Philosophy”
“Forecasts possess no intrinsic value. They acquire value through their ability to influence the decisions made by users of the forecasts.”

- Allan Murphy, NCAR, 1993
“Weather is intertwined with nearly every decision we make.”

- Bryan Beck, FAA / ATCSCC National Operations Manager (NOM)
NWS SUPPORT TO ATCSCC

• **Goal** ➔ Paint a *cohesive national weather picture to Command Center*

• **Goal** ➔ Improve safety, efficiency, and **decision making**

• NWS meteorologists *fully integrated* into NAS decision-making

• **Decision support:**
  – real-time assessments and briefings of current & forecast weather
  – planning outlooks out to 4+ days
  – participation in post-event reviews and debriefings
NWS SUPPORT TO ATCSCC

- NAMs coordinate / collaborate with NWS CWSUs, WFOs, National Centers, and on some occasions with Airline meteorologists

- NAMs provide meteorological and national TMI insight for CAWS (Collaborated Aviation Weather Statement)
NWS SUPPORT TO ATCSCC

• NWS dedicated weather decision support to ATCSCC
• Four NWS meteorologists (National Aviation Meteorologists)
• One FAA weather specialist
• Two additional NWS meteorologists planned for 2016
• Organizationally: NWS / NCEP Aviation Weather Center (AWC)
NAM Mission

The 4 C’s....
NAM Mission

➢ Coordination
NAM Mission and Mantra

➢ Coordination
➢ Collaboration
NAM Mission

- Coordination
- Collaboration
- Consistency
NAM Mission

- Coordination
- Collaboration
- Consistency
- Customization
Coordination / Collaboration

- CWSU
- OTHER FAA
- NWS WFO
- WPC/SPC
- A4A/NBAA/IATA
- AWC - CAWS
- NAM ↔ ATCSCC

NWS/NCEP/AWC/NAM
CONSISTENCY

Core 29 TAF Updates – every 2 hours

**September 3, 2014**

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CUSTOMIZATION
FAA National System Review – NWS/NAM Weather Outlook

→ Graphic customized for ATCSCC managers and planners
NAS Weather Impacts – Winter Storm

Total Snow Forecast - Valid Through February 22, 2015 7:00 PM ET

NAS Weather Impacts Fri/Sat/Sun

Quick Look:

ORD: 1 inch snow -- Fri into Sat a.m.
DTW: 2 to 3 inches snow -- Fri night/Sat
MEM: Freezing rain/sleet → rain -- Fri /Fri night
DC Metros: 2-4 inches snow → sleet/freezing rain → rain -- Sat/Sun
PHL/N90 – 1-3 inches Snow → freezing rain/sleet → rain/snow – Late Sat/Sun
Possible compression
BOS -- 2-3 inches snow → mix with freezing rain/sleet – Sat night/Sun
SKI COUNTRY – Heavy snow -- Fri eve/Sat/ Sun
Category 3 hurricane...forecast to strengthen to category 4.
NHC forecast track takes category 3 hurricane over or near Bermuda on Friday.
High confidence in forecast track due to unusually good agreement between computer forecast models.
NAM Daily Products & Briefings

- Customized TAF Updates: 05, 07, 09, 11, 13, 15, 17, 19, 21 (L)
- CAWS Collaboration – Event-driven
- NWS HQ Standup Briefing – 0745 local
- ATCSCC Standup Briefing – 0800 and 1600 Local
- Ad-hoc ATCSCC briefings: 15 to 20 times per day
- NAS Day-1 Convective Outlook - 0830 (started in 2015)
- FAA NAS NSR (Day 2-4+ Outlook) – 1000 Local
- FAA HQ (High Impacts only) – 1030 Local
- NWS WFO/CWSU NY Metro/PHL Coordination – twice per day
- Space Weather (SWPC) & Volcanic Ash -- as needed
- Ad-hoc Telcons/NWS Chat for coordination/collaboration
CAWS – March 24, 2015

• ATCSCC re-route decisions were based on CAWS001
• Positive feedback by FAA/ATCSCC in real-time on 3/24/15
NWS/NAM “Wall of Weather”
Summary

- National Weather Service NAMs provide key weather decision support to ATCSCC and the National Air Space

- Meteorological expertise is fully integrated with ATFM decision makers
The Critical 4 C’s:

- Coordination
- Collaboration
- Consistency
- Customization
Questions?
NWS/NCEP/AWC/NAM

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frank.brody@noaa.gov

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Extras / Backup
Accuracy and Consistency

- Accurate & Consistent
- Not Accurate but Consistent
- Accurate but Not Consistent
- Not Accurate & Not Consistent
“Show Me The Money... $$”
Accurate Forecast Saves $$
A Case Study

- Thunderstorms southwest of Chicago
- WILL IT REACH THE TERMINAL?
- ORD TRACON/TOWER ASKS FOR GROUND DELAY PROGRAM
Thunderstorms southwest of Chicago

WILL IT REACH THE TERMINAL?

ORD TRACON/TOWER ASKS FOR GROUND DELAY PROGRAM

Program length = 2 hours
#Flights affected = 154
#Passengers affected = ~15,400
Average Delay (per flight) = 21 min
Total Delay in NAS = 3,200 min or **53.3 hours**
Accurate Forecast Saves $$

✈ NAM briefed NO thunderstorm impacts to ORD/MDW

✈ $$ Savings  -- $4,690 per hour cost of delay

✈ 53.3 hours X $4690 per hour  =

SAVINGS: $250,000
Typical Day
(all times UTC)

Scheduled:

- TAF Updates - 09, 11, 13, 15, 17, 19, 21, 23 & 01
- 5-Day Terminal Outlook - 0930
- Day 1-8 Impact Graphics - 1030
- NY/PHL TAF Coordination - 1040 & 1640
- Aviation Previous Day Weather Graphic - 1100
- NWS HQ Standup - 1145 local
- ATCSCC Standup - 1200 & 2000
- NAS Day-1 Convective Outlook - 1245
- FAA NAS System Review (Day 2-4+ Outlook) - 1400
- FAA HQ (High Impacts as needed) -1430

As Needed:

- CAWS Collaboration
- SWPC & VAAC
- Ad-hoc ATCSCC Briefings/Telcons/chats – 15+ each day
- Holiday Outlooks, Special Events, Tropical…
Most IDSS is:

- Terminal (Airport) Impacts
  - Arrival/Departure Gates
  - Weather at Airport
  - Ground Stop (GS)
  - Ground Delay Program (GDP)

- Enroute (Cruising) Impacts
  - Route blockage
CCFP AND CAWS
CCFP: Computer-generated Convective Forecast Product

- Computer-generated convective forecast
- Displays convective coverage and echo tops
- Forecasts valid for 2, 4, 6, 8 hour projections
- Produced every 2 hours: 24 x 7 x 365

- Posted to www.aviationweather.gov and FAA TSD
- Posted 45 minutes prior to each Planning Telecon (exception: 2 hour not on TSD)

- CCFP model inputs: *
  - Last 3 versions of HRRR
  - High-Resolution ARW
  - SREF

* SREF upgraded late October, 2015; HRRR upgrade planned for March/April 2016
CAWS

• Collaborative Aviation Weather Statement (CAWS)
• Event driven (non-scheduled) advisory for US CONUS airspace began 3 Mar 2015
• Contains both a graphical picture and text discussion of impacted region
• Issuance: event driven with as much lead time as possible – ideally 2 to 6 hours
• Issued for Thunderstorms
• CAWS & CCFP together will be used by TFM to support TMI decision making strategies
CAWS Dissemination

- Posted on the Aviation Weather Center website: [www.aviationweather.gov/caws](http://www.aviationweather.gov/caws)
- NWS Telecommunications Gateway
- Command Center Advisory:

  ATCSCC Advisory
  
  ATCSCC ADVZY 079 DCC 03/27/2015 CAWS 002 IMPACTING ZMA/ZJX

  RAW TEXT: ATCSCC ADVZY 079 DCC 03/27/15 CAWS 002 IMPACTING ZMA/ZJX
  
  CAWS HAS BEEN ISSUED.

  VALID 1943-0000Z

  http://www.aviationweather.gov/caws

- Command Center planner will reference active CAWS during SPT
CAWS/CCFP Example
08/20/2015

2056Z CAWS
Valid Through 01Z

21Z CCFP
Valid 01Z

NWS/NCEP/AWC/NAM
Key Aviation Weather Websites
AWC TFM Portal
Key Aviation Weather Websites

NWS Aviation Weather Center:
www.aviationweather.gov
www.aviationweather.gov/adds
www.aviationweather.gov/caws

AWC TFM Portal:

-- Or -- search on: **AWC TFM Portal**