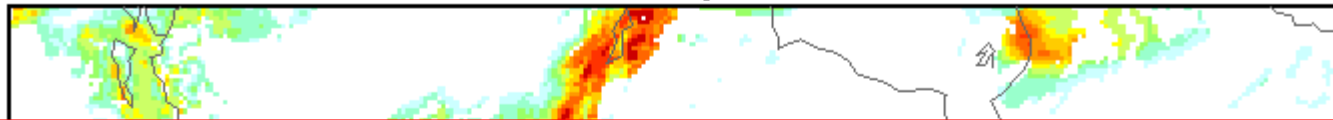


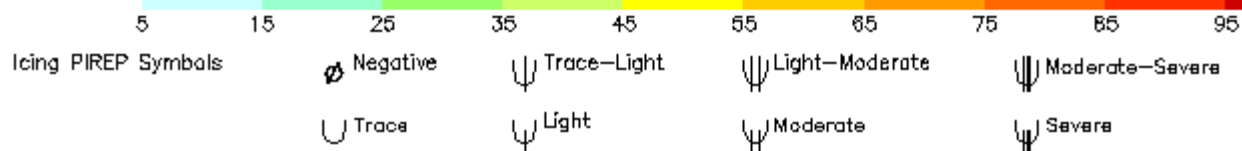
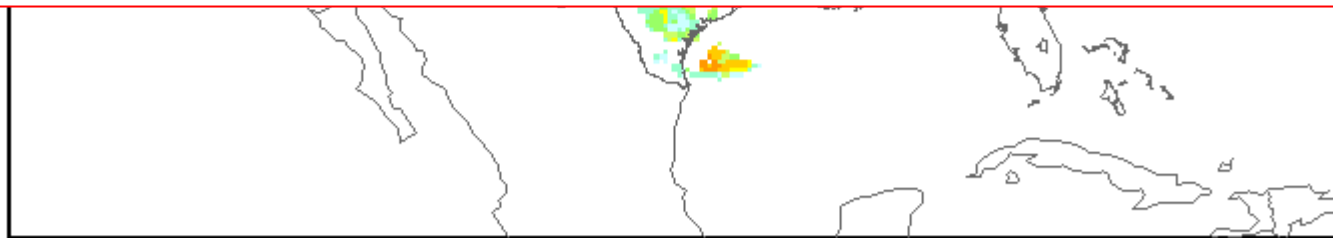
The CIP is an automatically-generated product that supplements AIRMETs and SIGMETs by identifying areas of current icing potential, but it does NOT substitute for the intensity and forecast information contained in AIRMETs and SIGMETs. It is authorized for operational use by meteorologists and dispatchers.

Icing potential at FL120

Analysis valid 2100 UTC Thu 27 Oct 2005



The CIP is an automatically-generated product that supplements AIRMETs and SIGMETs by identifying areas of current icing potential, but it does NOT substitute for the intensity and forecast information contained in AIRMETs And SIGMETs. It is authorized for operational use by meteorologists and dispatchers.



CIP Issues

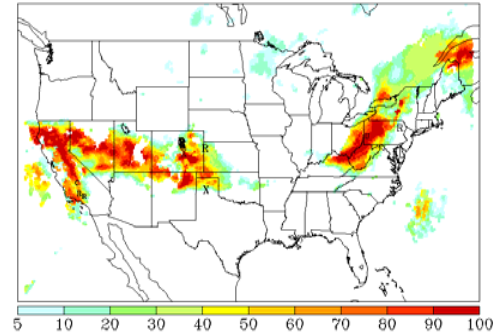
Potential versus probability

Severity not depicted

SLD

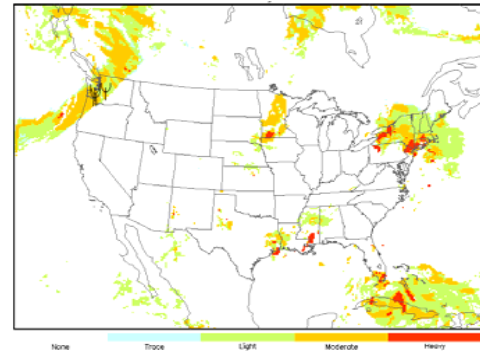
Color scale

Icing Potential



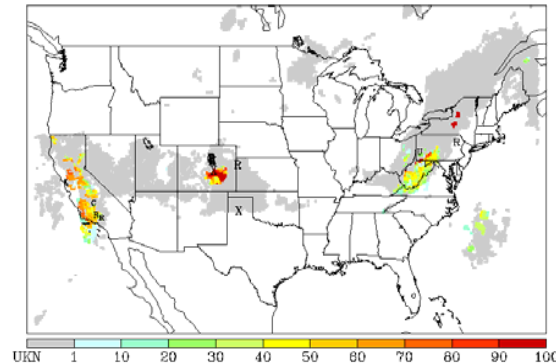
- Resolution: Calibrate! Change to true *probability*
 - QAPDT is working on calibration
 - Preliminary results show highest probability to show is ~50%.
 - Examination of appropriateness of scaling using climo.
 - Can use default of lower (10%? 20%?) probability
 - User-selectable probabilities also possible

Icing Severity



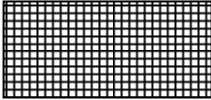
- Resolution: Make algorithm physically-based and use PIREPs and research aircraft data to *support* rather than *prove* accuracy
 - Assess liquid water production and depletion using fuzzy logic combination of clues from observations (satellite, radar...), weather model output (vertical velocity, explicit SLW, advection terms...) and recent, nearby PIREPs
 - Transform this information into severity index
 - Show expected icing severity
 - Default – severity thresholded by pre-set probability (like GTG)
 - Also user-selectable probabilities
 - Indicate probable SLD areas with cross-hatching

SLD Icing



- Resolution: Show as overlay on combined severity/potential product
 - Default will show SLD; user-selectable feature will turn it off
 - Collaborate with working groups and regulatory agencies to harmonize SLD condition definitions
 - Determine state-of-the-art and near-term capabilities for detecting and forecasting SLD conditions
 - Forecasting and diagnosis: working group at Workshop in UK, Feb'05
 - Detection: Federal Icing Remote Sensing Team assignment

CIP D4+ Concept

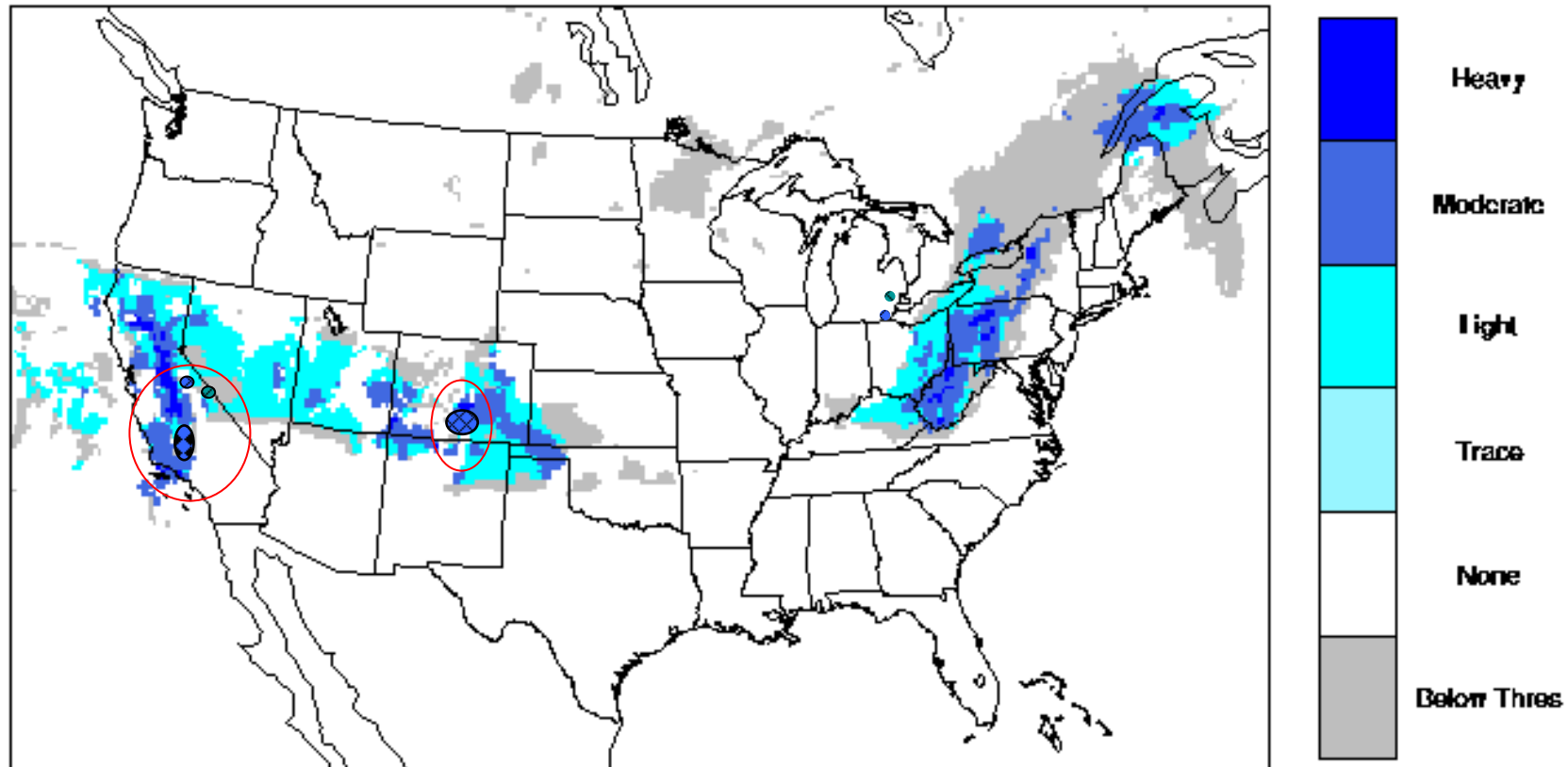
- Combined product
 - Severity thresholded by probability with overlay crosshatching for SLD conditions, color scale in shades of blue
 - None, (trace), light, moderate, heavy, SLD 
 - Default settings (e.g., TLMH, >20% probability, cross-hatching for SLD with probability > 10%)
 - Selectable features:
 - Severities are displayed
 - Probability thresholds – for all severities or for individual levels (i.e., show me all severities thresholded at 40%, or show >M only, etc.)
 - Store preferences locally

Concept for Upgraded Product Suite

Thresholded Icing Severity + SLD

Icing Intensity Screened by Icing Probability > 20% @ 9000 ft.

20050216 15Z



Issues: Indicate (with hatching) places where drop sizes may exceed current certification. On/off button?

Research for CIP D4+

- 1990-present
 - Forecast experience
 - WISP90,91,94, WISPIT, MWISP, SLDRP, AIRS I&II, etc....
 - Old CIP Severity
 - “Eyeball time”
- May 2005: Let’s tackle this NOW!
 - 200+ parameters tested
 - A few dozen made the cut
 - QAPDT working on probability
 - Nov 2005: We got it!!!!
- But wait! There’s more!!!!

Time from AWTT D4 Decision (months)	Date	Action	Responsible Party	Report To
-10	17 Oct 2005	Algorithm freeze for D4+ product	IFIPDT	AWC
-9.5	31 Oct 2005	Provide post-analysis dataset to QA	IFIPDT	QAPDT
-8	17 Dec 2005	Deliver Concept of Operations/Use Enhancement and Planning documents to AWC	IFIPDT	AWC
-7	17 Jan 2006	Evaluation of RAP in- house datasets complete	QAPDT	--
-6	17 Feb 2006	Deliver code & scripts to AWC	IFIPDT	AWC

Time from AWTT D4 Decision (months)	Date	Action	Responsible Party	Report To
-6	17 Feb 2006	QA check point - go forward?	QA&IFI PDTs	AWTT, AWC
-5	17 Mar 2006	Dissemination Format Development (ex. If GRIB need to obtain table Ids)	AWC, IFIPDT	ADDS
-5	17 Mar 2006	Obtain WMO Headers (if new product)	AWC	ADDS
-4.5	7 Apr 2006	AWC internal code & infrastructure handling complete	AWC, IFIPDT	IFIPDT
-4.5	7 Apr 2006	AWC evaluation machine 90-day burn-in begins	AWC	IFIPDT
-4	17 Apr 2006	QA assessment report delivered to AWTT and PDT	QAPDT	IFIPDT, AWTT
-4	17 Apr 2006	Technical report delivered to AWTT and QA	IFIPDT	AWTT, QAPDT
-3.5	30 Apr 2006	Technical Review Panel meeting	AWTT	IFIPDT, AWC
-3	17 May 2006	AWC real-time evaluation data feed available to QA, ADDS	AWC	QA&IFI PDTs
-2	17 Jun 2006	Secondary evaluation of RAP & AWC feeds complete	QAPDT	IFIPDT, AWTT
-2	17 Jun 2006	Display updates completed	ADDS	IFIPDT
-2	17 Jun 2006	Product goes live on Experimental ADDS	ADDS	IFIPDT, AWC

Time from AWTT D4 Decision (months)	Date	Action	Responsible Party	Report To
0	17 Aug 2006	AWTT D4 Decision	AWTT	IFIPDT, AWC, QAPDT
+1	17 Sep 2006	New display code on non-live OPS ADDS machine	ADDS	IFIPDT, AWC
+1	17 Sep 2006	OPS ADDS 30-day burn-in begins	ADDS	IFIPDT, AWC
+2.75	7 Nov 2006	AWC operational machine 30-day burn-in begins	AWC	IFIPDT, ADDS
+3.75	7 Dec 2006	AWC operational machine burn-in complete, given no restarts	AWC	IFIPDT, ADDS
+3.75	7 Dec 2006	Product becomes available on NOAAPort	AWC	IFIPDT, ADDS
+3.75	7 Dec 2006	OPS ADDS burn-in complete	ADDS	IFIPDT
+3.75	7 Dec 2006	Product becomes live on OPS ADDS	ADDS	IFIPDT, AWC, AWTT