N-AWIPS 5.8.3 Release Notes
5/16/05

Version 5.8.3 covers development from February 15, 2005 to May 13, 2005

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I. NMAP Product Generation Improvements

A. Graph-To-Grid Enhancements (ALL)

Several enhancements have been made to the graph-to-grid function.

1. Categorical Grids

A new GEMPAK parameter called CATMAP (categorical mapping) has been implemented in graph-to-grid. This parameter allows for the translation of alphanumeric contour line labels (such as 'LOW', 'MED', 'HIGH') to numbers for the purpose of creating a digital grid. The syntax for this translation is CATMAP=string1=value1;string2=value2; ... ; stringN=valueN. For the example given, the translation might be CATMAP=LOW=1;MED=2;HIGH=3. See $GEMHLP/hlx/catmap.hl2 for additional details on this parameter.

2. Discrete Grids

Grids can now be created based upon user specified ranges set in a new GEMPAK parameter DISCRETE. For example, if DISCRETE= 5-10=5; 10-15=10; 15-=15, then values between the 5 and 10 contour are set to 5, between the 10 and 15 contour are set to 10, and greater than 15 are set to 15. Note that discrete grid processing requires directional contours which sets the DLINES flag to true. The DLINES flag considers the direction (order of points) of the contour lines when assigning values. Greater values are to the right of the line, lesser are to the left. This option also solves the ambiguity when only a single contour line is present.

3. Maximum Grid Size Increased

A change was made to accommodate large grids, in particular the NDFD grid (1073x689 grid points), up to 750K points. Please note that graph-to-grid performance is proportional to the number of grid points being evaluated.

4. Vector Field Processing

Graph-to-Grid now processes vector information (barbs, arrows) as depicted in NMAP product generation. The processing may occur in either NMAP or the stand-alone program GRPHGD. Two grids are created – the u and v components – when TYPE is set to either 'b' (barbs) or 'a' (arrows). The analysis is achieved by using the OA (objective analysis) library routines.

B. GFA/AIRMET (AWC)

Several new features and enhancements have been added to NMAP GFA GUIs in support of creating the Graphical AIRMET (GAIRMET) and the derived text AIRMET product.

1. Zulu Hazard Drawing and Formatting Added

NMAP2 now has the capability to produce an AIRMET Zulu text report by extracting information from GFA smear elements. Draw Zulu elements as is done with other GFA types using a combination of the "GFA Create", "Layer Control" and "Filter Control" GUIs. Select the "ICE" hazard.

Click "AIRMET" under "PROD" class to invoke the AIRMET format GUI to create ZULU text messages as is done for other AIRMET types.

Note that Freezing level and multiple freezing level type hazards are not yet supported with respect to the Zulu AIRMETs awaiting finalization of FAA requirements.

2. Treat All GFA Time Spans as Smears

GFA elements with a forecast time that spans a time (e.g. 0-3, instead of 0 or 3) are now treated as either smears or outlooks. They do not have to be smeared in order to produce AIRMET text. Hours 0-3, 3-6, and 0-6 generate the forecast AIRMET text and hours 6-9, 9-12, and 6-12 will be used to generate the outlook sections after FAA requirements are finalized.

Note that there is no visual hint, other than the forecast time, to indicate that the GFA is a smear and not a snapshot.

3. GFA Create GUI Improvements

The following "GFA Create" GUI enhancements were made at the request of the AWC. The GUI now displays the From line at all times. As soon as the user completes drawing the GFA, the From line is displayed. It is updated whenever the user moves a point, or otherwise modifies the GFA's shape. The new button named "Save From Line" saves the From line into a local file. The local file name now includes the tag string as well as update number obtained from the GFA GUI to uniquely identify its name.

The text field display of the referenced SIGMET has been removed. The SIGMET buttons are still present and their state (pushed in or out) is the indicator of which SIGMETs are referenced by the GFA.

4. AIRMET Formatter Modifications

The following modifications were made to the AIRMET formatter as the result of AWC evaluation of the previous release.

The formatter now arranges the AIRMET paragraphs by hazard type. The order in which the snapshots or smears were drawn does not matter. Tango AIRMETs are output in the order of TURB, STNG SFC WNDS, then LLWS. Sierra are IFR then MTN OBSCN, and Zulu are currently just ICE.

The update number has been added to the header of the AIRMET text report. This number is taken from the contents of the “Upd:” field in the snapshot GFAs. (Only snapshots with the same Upd and Tag values are smeared together.)

In the GFA GUI, the IFR hazard now has a frequency menu. The frequency and severity menus have been removed from the MTN OBSC.

Within the AIRMET text reports, only flight levels of 180 and greater are prepended with “FL”. The LLWS AIRMET text report now ends with “LLWS EXP”.

Duplicate points are now removed from the From line in the AIRMET text report.

The "AIRMET Format" GUI has been made wider so that FROM lines are displayed on one text line.

C. Added Show Ungrouped Action (AWC)

A new function, "Show Un-Grouped", has been added to the PGEN palette. This action is the logical inverse of the “Show All Grouped” function. Clicking the "Show Un-Grouped" button highlights (using white, filled circles) all VG elements that are not in a group. Note that this action is not an alternative selection mechanism – no other action can be directly performed on the ungrouped elements as this is a view only function.

D. International SIGMET Formatter (AWC, AR, PR)

The international SIGMET text formatter was modified to support the use of new WMO headers and AWIPS identifiers scheduled to become effective May 17, 2005. SIGMET text products can be created with either the new or the old headers and identifiers by setting the USE_NEW_WMO tag in the $GEMTBL/config/prefs.tbl file to "TRUE" or "FALSE", respectively. The table, $GEMTBL/pgen/sigmetinfo.tbl was also modified, accordingly.

More information regarding these changes can be found at:
http://www.aviationweather.gov/notice
A comparison of the old and new formats for international SIGMETs can be found at:
ftp://ftp.awc.ncep.noaa.gov/new_wmo_pdf_examples

Changes were also made to support implementation of a new format for the geographical coordinates used to define the location of reported phenomena. This change has been proposed by the NWS but no implementation date has been established. International SIGMET text products can be created with either the new or the old format by setting the NEW_LATLON_FORMAT tag in the $GEMTBL/config/prefs.tbl file to "TRUE" or "FALSE".

This development was done in collaboration with the AWC.

E. VAA Enhancements (NESDIS, AR)

Currently, VAA ash clouds may be 'Area', 'Line' or 'Other'. This release modifies the current ash cloud type 'Other' to two new types – 'Not Seen' and 'Others – FCST'. The option 'Not Seen' replaces the previous functionality 'Other'. The

option 'Others – FCST' is a pull-down menu whose contents are obtained from the table $GEMTBL/pgen/vaa.tbl.

A date/time string (valid time) has been added to the beginning of each FCST text section. These times are rounded to the nearest half-hour based on the input observation time.

The automatic insertion of 'NOT AVBL' has been removed from the forecast text sections with no ash cloud information.

F. TCA GUI Improvements (TPC)

Several improvements to the Tropical Cyclone Advisory (TCA) NMAP2 GUI and the generated text message have been made in this release.

The TCA breakpoint selection, plotting and TCV text message creation routines have been modified to separate the Florida Keys from the south Florida coastline, providing increased flexibility in breakpoint selection and an improved graphic display. The Keys are still treated as breakpoint pairs, just as the coastal area is. However, the user cannot choose one end of a breakpoint pair from the coastal geography and the other end from the Keys – the two areas are disjoint. To allow Ocean Reef to be used as either a coastal or a Keys breakpoint, a new coastal breakpoint (Ocean Reef Coastal) has been added west of the northernmost Keys breakpoint (Ocean Reef). Keys segments are not merged with coastal segments in the TCV text message.

Changes have also been made to the way segments are grouped in the TCV text message: (1) bodies of water are listed separately from land segments; (2) any (a) Chesapeake Bay and Tidal Potomac, (b) Delaware Bay, OR (not AND) (c) N.C. Sounds breakpoints which have the same action and event type are grouped together in a single segment; (3) if all of Puerto Rico is under a single type of watch/warning, the breakpoint string is now 'PUERTO-RICO-ALL'.

The TCV tropical cyclone watch/warning message now uses the issuing status specified in the "TCA Attributes" GUI to construct the VTEC line(s) in the message. The issuing status value is 'O' (operational), 'T' (test), 'E' (experimental) or 'X' (operational experimental), and is the second character in the VTEC line. For the 2005 hurricane season, the default is 'E' (experimental). If the issuing status is 'T' (test), standard text is included within the message to indicate that it is a test. The default VTEC status is specified by the first entry for the parameter IssuingStatus in the table $GEMTBL/pgen/tcainfo.tbl.

A new mechanism to select the active segment has been added to the Tropical Cyclone Advisory (TCA) GUI. The up and down arrows on the keyboard (meaning the up/down keys in the small cluster of four directional keys located between the main keypad and the numeric keypad) may be used to select the active segment of a TCA.

In product generation draw a TCA that has more than one segment. Deselect the TCA (middle mouse button) and reselect it (left mouse button). A specific segment of the TCA can be selected for editing in one of three ways:

Method 1: Click directly on one of the breakpoints of the desired segment.

Method 2: Click on the desired segment within the scrolled list of segments in the TCA window.

Method 3: (New) Use the up or down arrow keys to initially select and step through the list of segments. If the TCA has been selected but no segment has been selected for editing yet, the up/down arrow keys will select the first/last segment. If a segment has already been selected then the up arrow will select the previous segment (higher in the scrolled list) and the down arrow will select the next segment (lower in the scrolled list).

The up/down keys will not “wrap” around the list. Thus, the up arrow will stop stepping when the segment at the top of the list is selected, and the bottom arrow will stop stepping at the last segment in the list.

The TCA GUI's segment scroll list now displays the Island or Water segment names for all selected breakpoints for Island and Water segments. In previous versions a generic identifier like “water_1” or “islands_2” was used and no breakpoints were listed. Now all breakpoints are listed, no matter how many are included in any given water or island segment. The segment list will scroll horizontally as needed to enable the user to see all the included breakpoints.

The color indicating when a breakpoint is being edited has been changed from red to cyan so that it is more visible compared to hurricane warnings which are red. This change was done at the request of the TPC.

The bug associated with the mouse button 2 (MB2) has also been corrected. When drawing a new TCA segment a MB2 click aborts the segment draw. A second MB2 deselects the TCA. The previous behavior was that the first MB2 click both aborted the segment and deselected the TCA.

The Year field has been removed from the TCA GUI. The year for a given TCA is extrapolated from the Valid Time field.

The Issuing Status is now correctly stored and remembered for each TCA element.

II. Product Generation Pre/Post Processing Improvements

A. Updates to SPENES product creation (NESDIS)

At the request of the NESDIS forecasters, the wording was changed in the Satellite Precipitation Estimation product. A section was added about the NESDIS web site for information related to this product.

B. WOUPDT Enhancements (SPC)

Several enhancements were made to the WOUPDT program.

Three new flags (-e, -o and -u) have been added. The -e flag checks for extensions in time, area or both from WCNs by keying on the EXT, EXA and EXB action codes. The -o flag checks for routine clearing of counties issued from WCNs with the CAN action code. The -u flag checks to see if the updated WOU is within a specified number of minutes of the last WOU update text product and if there is no change to the product. If the newly created WOU update is within the allotted number of minutes **and** there is no change to the list of counties active then the updated product is not created. The program determines whether or not to create a product based upon which flag is used and which WCN action codes are found. For more descriptions about the flags, please read the $GEMHLP/hlp/woupdt.hlp file.

Note that the -n flag has been removed at the request of the SPC.

Also, the final WOU has been updated to make a distinction between the SPC or the WFOs canceling/expiring a watch.

Several corrections were made to the update program and WOU display based on bugs found by the SPC (email 03/11/05). The corrections are: (1) the WOUPDT program now picks up the extensions in time and uses that in the WOU-update message. (2) A bad UGC line in the final WOU has been fixed. (3) The '$$' is now placed above the attention string in the final-WOU. (4) If the first line of a decoded WOU contains a watch cancellation and the next line is a new WOU, the new WOU now displays in NMAP.

Also corrected a bug reported by the SPC (03/22/05) concerning the WOU-final text message. If the watch originally contained marine zones, the marine zone state string omitted the marine zone listing(s).

C. Added Watch Corner Point (WCP) Product Creation to the WOU Update Program (SPC)

The Watch Corner Point (WCP) text product creation can now be generated from the WOU update program, WOUPDT. The WCP creation rebundles the active watches each time the WOUPDT program is run. Control of creating the WCP text product is by using the tag UPDT_WCP, in the table $GEMTBL/txtprd/woudef.tbl. If this tag is set to ON, the WCP text products are created. The default output file name for the text products is KWNSWCPSPC. The default value for WPDT_WCP is set to OFF. The WCP text message contains all of the information for each active watch; watch number, watch type, starting time, ending time and the rebundled latitude and longitude points. If there are not any active watches, a 'NO WATCHES CURRENTLY ACTIVE' WCP message is created. The text file follows the examples given in the NWS Directive 10-512 (October 1, 2003).

One item of note, no test watches will appear in the WCP text product.

Also, an associated VG file may be created at the same time as the text product. Its creation is controlled by the tag WCP_VGF in the woudef.tbl table. The default output VG file name is KWNSWCPSPC.vgf and the default value for WCP_VGF is FALSE. These files will be overwritten with each run of WOUPDT.

Please see $GEMHLP/hlp/woupdt.hlp for more information about WCP product creation.

D. Added wording to the enhanced watch status message (SPC)

The enhanced watch status message has been updated with an additional phrase as defined in the latest NWS Directive 10-512. This message has been placed at the bottom of the product after the '$$' as follows:

"THE WATCH STATUS MESSAGE IS FOR GUIDANCE PURPOSES ONLY. PLEASE REFER TO LOCAL SPECIAL WEATHER STATEMENTS FOR OFFICIAL INFORMATION ON COUNTIES...INDEPENDENT CITIES AND MARINE ZONES CLEARED FROM SEVERE THUNDERSTORM AND

TORNADO WATCHES."

This development was done in collaboration with the SPC.

E. Updated Cancel SEL text message (SPC)

The word "CANCELLATION" was removed from the MND header and the string "AWW" was changed to "WW". These changes were done at the request of the SPC.

F. Added Plotting Options for Tropical Cyclone Watch/Warning Graphic (TPC)

Program GPTCWW, which plots the tropical cyclone watch/warning graphic using VG file input, has been modified by adding four new fields to the STRMID input parameter. Values for the track line type, track line width and track line color may now be specified. One value may be used for forecast hours up to and including 72 and a second value for forecast hours after 72. A flag has been added to suppress plotting of the scale legend box (default is to display the scale). See the GEMPAK help for STRMID for more information.

G. Create Stand-alone Program to Cancel a TCV Message (TPC)

A new program TCACANCEL provides a way to create a TCV ("Tropical Cyclone VTEC") text message that cancels all active tropical cyclone watches and warnings. This program will, in almost all cases, be run only once (at most) per numbered storm, when a tropical cyclone forecast/advisory is issued that cancels all watches and warnings. (In this case, the usual GUI-based method of creating the TCV message does not work, since it requires that a VG breakpoint file be created.) For the program to work correctly, the VG file of breakpoint information for the advisory issued just previous to the cancellation advisory must be present in the directory where TCACANCEL is executed. See the help for TCACANCEL for information about the command line arguments and an example command line.

III. NMAP2 Display Improvements

A. Zoom Areas Saved/Restored in SPFs (HPC, ALL)

The save and restore functions for loading data using Stored Procedure Files (SPFs) have been enhanced to allow the zoom information to be stored and retrieved. To save zoom area in the SPF, apply the zoom before saving the SPF in the "Data Selection Window" GUI.

B. NMAP SPF Name Added to Title Bar (OPC, ALL)

The name of a loaded SPF file is now appended to the title of the main NMAP2 window. When the user loads an SPF file, the title of the window becomes "NMAP2(Version 5.8.3) – myfile.spf". This enables users who have multiple instances of NMAP2 running simultaneously to quickly determine which SPF has been loaded into which instance of NMAP2.

C. Plot Ensemble Cyclone Tracks in NMAP2 and GPMAP (OPC, EMC)

The ensemble cyclone tracks generated by various forecast models (GFS, NAM, UKMET, NCEP Ensemble, ...) can now be decoded and displayed (in NMAP2 and GPMAP) as a new miscellaneous data type. In many respects, these data sets are similar to the ATCF forecast track data which is decoded "on the fly" and displayed as miscellaneous data type ATCF in NMAP2 and as parameter ATCF in GPMAP. To display the ensemble data, select new miscellaneous data type ENS_CYC (for NMAP2) or use new GEMPAK parameter ENCY (for GPMAP). In NMAP2, an "ENS_CYC Attributes" box pops up when "Edit Source" is clicked, similar to the "ATCF Attributes" box, allowing the user to select specific models and to turn labels on or off. Optional labels are the initial forecast date and time as DD/HH at the first forecast point, and pressure and/or a marker at each forecast point. A text legend, color-coded by model type, appears at the left margin of the plot. For GPMAP, refer to the help for parameter ENCY for further information.

Table $GEMTBL/config/datatype.tbl has an entry 'ENS_CYC' for the ensemble cyclone track data. To access the data, name the files to conform to the datatype.tbl template (cyclone_YYYYMMDDHH.ens), and set up a path and environment variable SPDATA, putting the files in subdirectory enstrack/. All the model data for a single valid time should be in a single text file. The table $GEMTBL/config/miscset.tbl specifies the default attributes for the ensemble track data in similar fashion as other miscellaneous data types. See this table for additional details. Note that the data flow must be established to access these data operationally.

D. Reverse the order of plotting WOUs (SPC)

At the request of the SPC, the order of plotting WOU reports was reversed to plot the most recent report last. The data used to be plotted by searching through the data from latest to earliest and plotting any valid reports. Now, the data are plotted in the opposite order, with the earliest first and the most recent last.

This development was done in collaboration with the SPC.

IV. Decoder Improvements

A. Decoder Improvements (AWC, AAWU, HFO)

The AIRMET decoder DCAIRM, the non-convective SIGMET decoder DCNCON and the international SIGMET decoder DCISIG have been modified to decode those aviation text products with the new WMO headers and AWIPS identifiers scheduled for implementation on May 17, 2005. Products affected include AIRMETs for the CONUS and Alaska, non-convective SIGMETs for the CONUS, international SIGMETs for the New York, Miami, Houston, San Juan and Oakland Oceanic FIRs and the Anchorage Continental and Oceanic FIR, and volcanic ash advisories issued by the Anchorage VAAC. A complete list of the products can be found at http://www.aviationweather.gov/notice. Changes to the software allow decoding of products containing either the old headers and identifiers or the new ones.

This development was done in collaboration with the AWC.

B. Added the VTEC action code to the WCN decoder, DCWCN (SPC)

The text output for the WCN decoder, DCWCN, has been modified. The VTEC action code for each WCN has been added to the data information string. The VTEC code is prepended to the significance code and the two are separated by a semi-colon. Please see $GEMHLP/hlp/dcwcn.hlp for more details and examples.

C. Decode and Display of Watch Corner Point (WCP) Product (SPC)

A new decoder, DCWCP, decodes the WCP text messages created by the WOU-update program. The decoded message is in an ASCII format, similar to the decoded watches. Please see $GEMHLP/hlp/dcwcp.hlp for more information on the DCWCP decoder and its output format.

Also, a new parameter (WCP) has been added to GPMAP for displaying the decoded WCP data. The watch lines in the decoded WCP file have the option to be color coded to the watch number. Otherwise, by default, they are color coded as severe thunderstorms (– cyan) and tornadoes (– red). The capability to display WCPs in NMAP2 is also available. The data source is found under the "MISC"

data source category. Default values are set in the table $GEMTBL/config/miscset.tbl. See this table for additional details.

D. Decode and Display of New Buoy/CMAN Parameters (TPC)

The marine surface decoder DCMSFC has been modified to decode five new section 5 ("national practice") buoy/CMAN parameters – highest one-minute mean wind speed in m/s (PKWS), direction of one-minute peak wind in degrees (PKWD), time of one-minute peak wind as hhmm (PKWT), lowest one-minute average pressure in millibars (PMN1), and time of lowest one-minute average pressure as hhmm (PMNT). New computed parameters PKWK (highest one-minute mean wind speed in knots) and BRPK (wind barb in knots for highest peak 1-minute wind) were added. Tables were modified to allow for display in NMAP2 and the GEMPAK SF programs.

V. General Improvements

A. Grid Library Enhancements (ALL)

The remaining GEMPAK application programs have been converted to use the new DG and GD library functions to access grid files. (See the release notes item IV A. from version 5.8.1 for additional description). In this release, the following programs now include calls to the new functions:

OABSFC, OABSND, GRPHGD, GDCFIL, GDEDIT, GDSTAT, GDVINT, GDGRIB, GDINFO, GDDELT, GDMOD, GD2NDFD

B. Vertical Layer Diagnostics Added (ALL)

GEMPAK gridded data diagnostic functionality has been enhanced to allow for computations over layers containing multiple levels of the vertical coordinate. This functionality allows for a new set of LYR_ functions to be entered in GFUNC or GDPFUN to calculate layer quantities. The general form of the user input is

LYR_X (arg1 & arg2 & ... & argN & argout | levels)

where X is the name of the function (currently only SWTM exists), arg1—argN are input arguments, argout identifies a particular output if the function can produce more than one output, and levels is an optional input specifying the levels to be used. If levels is not specified, the level information is taken from the GLEVEL input.

The infrastructure for the LYR_ capability has been created for this release along with one function. This single function is LYR_SWTM, which calculates a weighted layer average of its single input argument. This argument can be any valid diagnostic function string. Additional layer diagnostics will be added in future releases.

More information on this new feature is found in the $GEMHLP/hlx/gparm.hl2 file. In GEMPAK programs, this can be viewed by entering "ph gparm" in the interactive user interface.

C. New Ensemble Diagnostics Added (ALL)

Three new ensemble diagnostics have been added in this release. They are:

1. ENS_SSPRD (scalar_input_arg) -- Computes the spread (sample standard deviation) over the members of an ensemble.
2. ENS_VAVG (vector_input_arg) -- Computes the average of a vector over the members of an ensemble. The result is a vector field.
3. ENS_VSPRD (vector_input_arg) -- Computes the spread (sample standard deviation) of a vector over the members of an ensemble. The result is a scalar field: SQRT{ [1/(N-1)]*SUM[(V-Vavg)*(V-Vavg)] }, where N is number of members, V is vector for a given member, Vavg is the ensemble average vector, and * represents a vector dot product.

D. Export GIF files from NMAP2 and the XW device driver (ALL)

The XW driver has been modified to allow the user to "take a picture" of the current frame. There is a new GEMPAK command, GSAVE, that takes the output file name as an argument and saves the frame to the file in the GIF format. This command operates from any GEMPAK text-interface program that draws data to an X Window. Type help from any GEMPAK program to get additional information on this command.

The export GIF functionality was also added to NMAP2. From the File menu, select "Export to GIF". A popup window appears and allows the user to enter the output file name. When OK is selected, the current frame is saved to the output file. If the output file exists, a file name is constructed that adds a three digit number to the file name. For example, if the file gempak.gif exists and the user attempts to save a new frame to the same name, then the output file will be gempak_001.gif. The next time the same file name is used, the output file will be gempak_002.gif, etc.

If the user has set the roam factor to larger than the default, then the entire pixmap is saved to the output file, not just the portion that is in view in the window.

This development was done in collaboration with the HPC.

E. NSHARP Enhancements and Corrections (ALL)

A few enhancements and corrections have been made to NSHARP.

NSHARP was modified so that if the text listing window is open, the text is updated during looping.

A bug was corrected where clicking outside the skew/T diagram area would modify the sounding.

NSHARP was also modified to properly print to a Postscript file.

F. Update NWX with Tropical Reconnaissance Flight Data (HPC, ALL)

A new data type group, Recon CARCAH has been added to NWX. This data group contains tropical products from reconnaissance flights with text products about non-tropical events, vortex messages, dropsonde data and supporting vortex messages. These categories cover both the Atlantic and Pacific Oceans. This addition was done at the request of the HPC.

G. OA Bounds Blocking (OPC, ALL)

The objective analysis (OA) programs OABSFC and OABSND have a new parameter OABND. OABND specifies the bounds file(s) to use for 'blocking', that is masking out geographical areas based on bounded areas. Observations within the bounded area are not considered nor are observations whose line-of-sight to an analysis point is 'blocked' by a bounded area. Multiple bound areas may be specified; the default is NULL - no bounds blocking specified. See $GEMHLP/hlx/oabnd.hl2 or type 'phelp oabnd' for additional information.

H. Added New GUESFUN Parameter to OA programs (OPC, ALL)

A new GEMPAK parameter, GUESFUN, has been added to the objective analysis (OA) programs, OABSFC and OABSND. The new parameter allows the user to specify a different field as a first guess than the analyzed field. For example the 10 meter temperature from a model at a specific forecast hour can

now be used as a first guess for the 2 meter temperature analyzed field.

***** IMPORTANT PLEASE NOTE: *****

The previous practice of specifying the forecast hour (time) along with the filename in the GUESS parameter is replaced with this capability. The forecast hour of the model grid MUST now be placed in-line in the new GUESFUN parameter. Therefore, any scripts specifying the forecast time in the GUESS parameter MUST be modified. An example of specifying the forecast hour with the new GUESFUN parameter is :

GUESFUN = hght@10%HGHT^f012

See the GEMPAK help on GUESFUN for additional details.

I. Allow Exponential Notation for Channel Type in imgtyp.tbl (OPC, HPC, NESDIS)

The current format for the the table $GEMTBL/sat/imgtyp.tbl allows for 6 digits for the channel identifier. New images have been requested by the OPC, HPC and NESDIS that have 7 or more digits for the channel identifier in the file header. A modification to the table reading routine from Unidata was applied which allows the table to have the value for the channel expressed in exponential notation. For example, instead of the value 8388608 for the channel of the AMSU Precipitable Water image, the table contains "2**23". This change allows the table format to remain the same, but accommodates the larger values for the channel.

J. Added Raw Sounding Reports Display to NWX (TPC)

Raw sounding reports, e.g., TTAA, TTBB, etc., can now be displayed in NWX. To view raw sounding reports, select "Observed Data", then select "Sounding Data". The tables $GEMTBL/nwx/master.tbl and guidata.tbl have been modified accordingly.

VI. Bug Corrections

A. 32-Bit Display Problem (EMC)

The EMC reported a problem with running NAWIPS applications on PCs with the color depth set to “True Color (32 bit)”. The problem was traced to the color allocation function and a check was added to treat 32-bit color depth the same as 16 and 24 bit.

B. WOU Display Problems (SPC)

Fixed an error with the display of decoded WOU if the watch was canceled early. The display was not saving the cancel watch information and was using the last active information for a watch. When NMAP2 was looping, this display error caused a canceled watch's counties to disappear and then reappear on more recent frames until the watch's normal expiration time.

Also corrected the display of WOUs when test watches appear as the first entry in the decoded file.

C. NAGRIB Bogus Error Messages (SPC, ALL)

The NAGRIB program was producing bogus error messages when decoding GRIB files into empty GEMPAK files. This problem, which had no effect on decoding, has been corrected.

D. Bug Fixes for Tropical Cyclone Forecast/Advisory Decoding (TPC)

The following bugs found in decoding during the 2004 hurricane season were corrected: (1) the year in the advisory file name is checked to make sure it matches the year in the STRMID parameter; (2) the presence of the key word 'NEAR' in the watch/warning text does not affect decoding; (3) direction of movement values of 0 or 5 degrees are decoded correctly.

E. AODT Non-Infrared Image Check Problems (TPC)

A problem was reported when starting the AODT and Cloud Height functions in NMAP2. A case was observed where the functions could be performed on non-IR imagery. Also, it was possible that a warning would be displayed when attempting to initiate the functions when viewing a valid IR image.

A modification was made to allow the user to initiate the functions no matter what kind of data is in the current frame. However, the functions will only execute properly when a valid IR image is in view. If there is a non-IR image, or no image, in the current loop, then a warning box is displayed when the user attempts to execute the function.

F. Wind rotation on non-cylindrical grids (Unidata)

In response to a bug report by Unidata [Larry Oolman, U. Wyoming], the wind

rotation was fixed for cases when the grid point lies exactly on a longitude line. The bug in the rotation could be seen when plotting gridded winds. The problem only occurs on non-cylindrical grids, e.g., stereographic.

This problem was reported specifically for polar stereographic grids in the Southern Hemisphere. However, it is possible that it could have occurred elsewhere.

VII. Map and Table Updates

A. Added new upper air stations (ALL)

Added Mecheria, Algeria (60549) , Mariscal Estigarrib, Paraguay (86068) and Ranohira, Madagascar (67152) to the upper air station table, $GEMTBL/stns/snstns.tbl.

B. Added Two New NEXRAD Radar Sites (ALL)

Added two new NEXRAD radar sites: (1) GWX – Evansville, IN and (2) DGX – Brandon, MS. These stations have been added to the NEXRAD station table, $GEMTBL/stns/nexrad.tbl.

C. ARTCC map file (AWC)

A new map file showing the ARTCC boundaries was provided by the AWC. This file has been added to the collection of maps and the appropriate tables. Click on the ARTCC button in the NMAP "Map Selection" GUI to overlay this map.

D. Fix ICAO_B entry in geog.tbl (AWC)

The projection for the ICAO_B was set to allow no margins for the plot region. This entry now matches all of the other ICAO areas.

E. Corrected Longitude for Wilmington, NC (HPC, ALL)

Corrected the location of Wilmington, NC (723020) in the surface synoptic station table, $GEMTBL/stns/lsfstns.tbl. It was three degrees farther north than it should have been located.

F. River Basin Map Updates (RFC)

All N-AWIPS river basin maps were updated with the latest maps from the NWS data base.

G. Fire Weather Zone Updates (SPC)

The Fire Weather map and bounds files were updated for changes effective 3/15/05.

H. Corrected Station Location Information in Surface Station Table (TPC)

Corrected the longitude information for two stations: Bangalor, India (VOBG) and Sitiawan, Malyasia (WMBA) in the table $GEMTBL/stns/sfstns.tbl. They inadvertently had negative longitude values when they should have been positive.

VIII. Calling Sequence Changes

A. $GEMPAK/source/bridge/wc/wcout.f, wcvtec.f
B. $GEMPAK/source/gemlib/gg/ggwact.f
C. $GEMPAK/source/programs/gd/grphgd/grginp.f
D. $GEMPAK/source/gemlib/gh/ghtclb.f, ghtcww.f
E. $GEMPAK/source/programs/gd/grphgd/ggdriv.f
F. $GEMPAK/source/gempak/source/programs/oa/oabsfc/oacinp.f, oacopn.f
$GEMPAK/source/programs/oa/oabsnd/oaninp.f, oanopn.f
$GEMPAKsource/programs/gd/gdcfil/gdcdsp.f
$GEMPAK/source/gemlib/oa/oagfil.f, oaigrd.f, oawgrd.f
G. $GEMPAK/source/gemlib/gg/ggwcck.f
$GEMPAK/source/textlib/wbc/wbcdsts.c
H. $GEMPAK/source/programs/gd/gddelt/gdddel.f
$GEMPAK/source/programs/gd/gdmod/gdoadd.f
$GEMPAK/source/gemlib/gr/grlist.f
I. $GEMPAK/source/nmaplib/pgen/nmap_pggfaw.c
J. $GEMPAK/source/gemlib/gh/ghtctx.c
K. $GEMPAK/source/cgemlib/cvg/cvgrebun.c
L. $GEMPAK/source/nmaplib/nmp/nmpsmapattr.c, nmpvalid.c
M. $GEMPAK/source/nmaplib/pgen/nmap_pgvolw.c
N. $GEMPAK/source/gemlib/gh/ghbkrv.c
O. $GEMPAK/source/programs/gd/gdstat/gdywrt.f
P. $GEMPAK/source/programs/gui/nwx/srcho.c, nsfopn.f
Q. $GEMPAK/source/gemlib/gh/ghwwtx.f
S. $GEMPAK/source/gemlib/gg/ggmisc.f
T. $GEMPAK/source/bridge/ma/mapkwd.f
U . $GEMPAK/source/gemlib/gh/ghwwbk.f, ghwwin.f

See the nawips.log and changes.log for additional details concerning these routines.

IX. Compiling and Linking Instructions

The necessary compiling and linking instructions are contained in the following file:

release_build_5.8.3

To execute the script and save its output in a file type:

cd $GEMPAK/build

release_build_5.8.3 >&! RELEASE_$NA_OS & ; tail -f RELEASE_$NA_OS

The output of the script will be written to RELEASE_$NA_OS.

Note that the build script removes files that have been eliminated in this version. These files must be removed by hand if the build script is not executed. A list of removed files for each release always appears in the file: $NAWIPS/versions/remove.log.