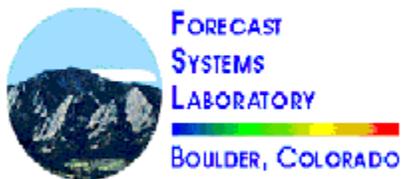

AWIPS FORECAST PREPARATION SYSTEM



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The Time Block Editor

As we mentioned a couple of issues back, the Time Block Editor is the new name for the old Worksheet. It displays a time inventory of each parameter that is currently loaded into the Graphical Forecast Editor (GFE). Using the Time Block editor, you can initialize forecast grids, interpolate to fill in gaps, copy data from one grid to another, and adjust the time over which a particular grid is valid.

Probably the biggest difference between the old Worksheet and the new Time Block Editor is that you can now load forecast parameters and (read-only) model-based parameters into the same workspace. Earlier versions of AFPS forced you to open a separate Worksheet to view and copy model-based grids. Time Blocks may be stretched in either direction to change the time period over which they are valid. Moving groups of Time Blocks now requires that you use a dialog box; in previous versions moving groups was an intrinsic part of the editor. There's a new copy operation that allows you to copy gridded values from any grid to any forecast grid using a drag-and-drop technique. The only restriction is that the source and destination grids must use the same units. The old GFE supported the concept of a time quantum, the smallest period of time over which a grid could be valid. Now the time quantum varies per parameter. For example, 6-hour QPF has a time quantum of 6 hours, which means you can never split a 6-hour QPF grid into smaller time chunks. This time quantum for each parameter is displayed in the Time Block Editor with dashed boxes we call split boundaries. We've added some features that let you control the grids displayed in the Spatial Editor from the Time Block Editor or Temporal Editor.

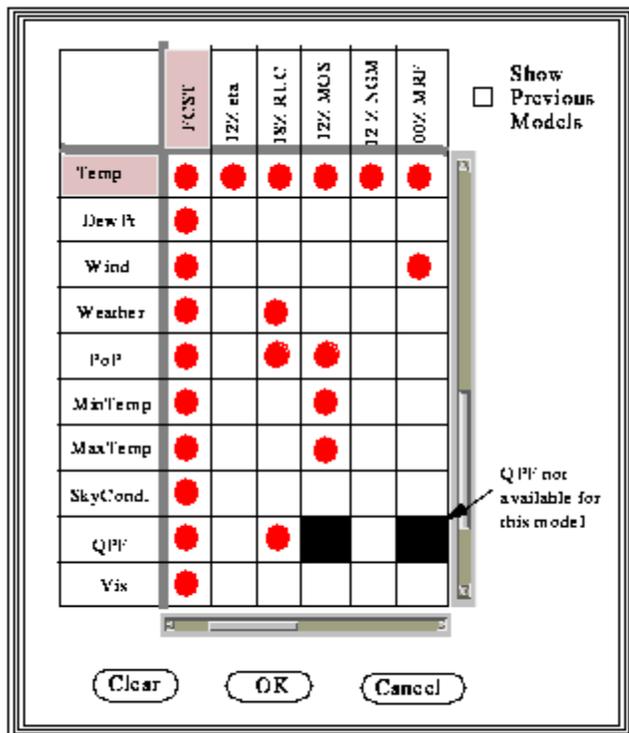
Loading/Unloading Parameters

In the new GFE, parameters are no longer loaded and unloaded into and from individual editors. When a parameter is loaded, it appears in each of the three GFE editors: Time Block Editor, Temporal Editor and the Spatial Editor. In the Spatial Editor any parameter can be made invisible, but it's still loaded.

In the last version of the GFE, loading and unloading parameters was rather cumbersome. Either you loaded an entire group of parameters at a time or you had to load them one at a time from a pull-down menu that contained dozens of parameter names. The new version of the GFE

presents a matrix to the user. Parameter names are listed vertically while sources such as Forecast, eta, NGM, etc. are listed horizontally. Because the list of parameters and models is long, the entire matrix can be scrolled vertically or horizontally to reveal different parameters and models. This matrix not only lets you load and unload parameters more quickly and easily, it also maintains and displays the list of parameters that are currently loaded in the GFE. As you load and unload parameters, the display stays updated. Figure 1 illustrates how this dialog box might look.

The Load/Unload parameter dialog box is non-modal; it can stay visible while you perform other work in the GFE. Once you bring it up, you can use it over and over and again without having to dismiss it each time. This not only saves time, but it also provides you with a way to see the list of parameters that are currently loaded in the GFE without scrolling the Time Block Editor.

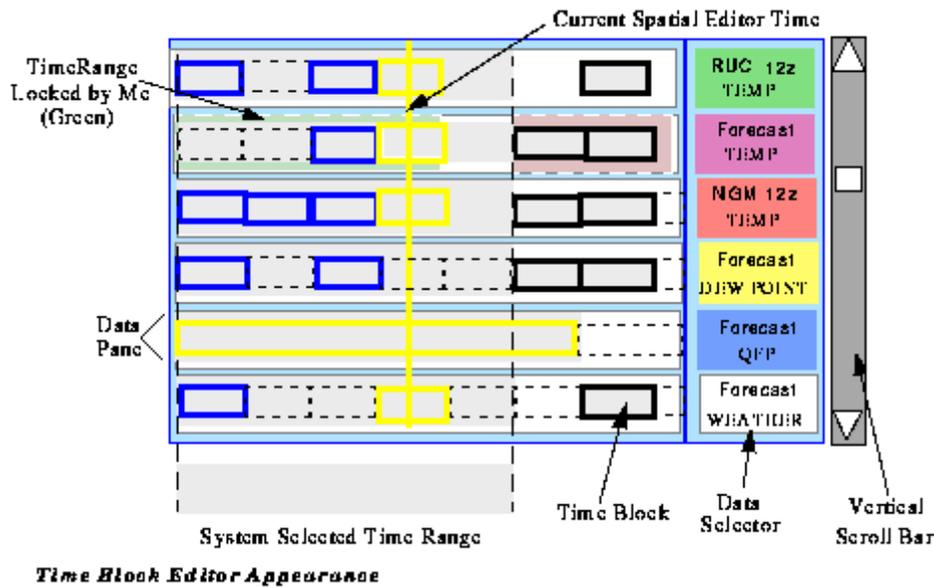


Load/Unload Dialog Box

To load a new set of parameters into the GFE, click inside any of the boxes and that particular parameter/source combination is selected. Clicking a box that is already selected will deselect it. Once your set of selections is complete, click the OK button and parameters will be loaded and unloaded to reflect the state of the dialog box. Selecting a row or column label selects or deselects an entire parameter or source. Using this matrix you can load an entire model with just two clicks (source label, OK).

The Clear button deselects all boxes in the dialog. The Cancel button closes the dialog and removes it from the display. To display it again, select the Load/Unload item under the Parm main menu selector (not shown here). The Show Previous Models button commands the dialog

box to display additional columns that list previous model runs. Use it when you want to view and copy grids from older model runs into your forecast.



Time Block Editor Appearance

The figure above illustrates what parameters look like once they're loaded into the Time Block Editor. Each parameter occupies a single Data Pane and owns a Data Selector that contains its name, source, and run time, if applicable. The entire set of Panes may be scrolled vertically with the Vertical Scroll Bar. Both the Time Block Editor and the Temporal Editor may be scrolled horizontally using the horizontal scroll bar, found next to the Time Scale (not shown).

Data Pane

The Data Pane displays four different types of information: parm inventory, locks, selected time range, and split boundaries. Each type is discussed below.

Parm Inventory - Time Blocks

A Time Block is a solid rectangular box that represents a single grid. The position and length of the Time Block displays the time period over which the grid is valid. Time Blocks that are outlined in yellow indicate that those grids are currently visible in the Spatial Editor.

Locks

Time ranges that are locked are indicated by a green or red background within the Data Pane. A green background means that the time range for that parm is locked by me, while a red background shows that the time range is locked by another user and cannot be edited until saved or reverted. In the figure, the second pane from the top, Forecast Temp, displays an example of

both locked by me and locked by other (easier to see for those of you reading this on the World Wide Web).

Selected Time Range

The selected time range for each parameter is shown by the hatched areas. Note the selected time range for each parameter is based on the system selected time range (shown just below the figure). Any time blocks that overlap the system selected time range are considered selected. In the case of QFP, note that the 6-hour time block extends past the system selected time range, but the entire time block is selected. In the real GFE, the system selected time range is located in the Time Scale object.

Selecting a time range and set of parameters works just like before. You can set the system selected time range independently and then select individual parameters, or you can press and drag mouse button two over the Time Block Editor and select both a time range and a set of parameters simultaneously.

Split Boundaries

The time blocks drawn in dashed lines are called split boundaries. These split boundaries indicate the finest temporal resolution possible for each parameter. For example, in the case of temperature, split boundaries are at one hour, but for QFP split boundaries are set to 6 hours. This means that you will not be allowed to split a 6-hour QFP block into smaller time chunks. These split boundaries are similar to the old "time quantum" except that this time they can vary, depending on the particular parameter. These split boundaries are most important when the GFE is in Auto-Split Mode (described later).

Data Selectors

The Data Selectors in the Time Block Editor indicate and control the state of a parameter in the Spatial Editor. The label tells you the parameter name and source. The color of the data selector is identical to the graphic color of the parameter as it appears in the Spatial and Temporal Editors. Clicking on the data selector with mouse button 1 toggles that parameter's visibility in the Spatial Editor. Clicking on the Data Selector with button 2 toggles the selection state of a particular parameter. As with the old version of the GFE, the selection state is used to identify parameters for copying, interpolation and initialization.

Vertical Scroll Bar

The Vertical Scroll Bar, located to the right of the Time Block Editor, is used to scroll the Data Panes vertically. You can scroll one parameter at a time using the arrows, click in the scroll bar to scroll a page, or drag the little box inside to jump to a specified place. A Find Parameter function, accessible from the main menu bar will scroll the Time Block Editor for you, to reveal any parameter you choose.

Time Block Editor Functions

As we mentioned earlier, the Time Block Editor functions have been simplified. There are only two edit functions. Stretch lets you adjust the time period of a single time block without affecting the gridded values. Copy ignores the time period component and copies just the gridded values from one grid to another.

Stretch

The Stretch operation allows you to adjust the time period component of a single time block. To use it, move the mouse cursor to the left or right side of a time block, press mouse button 1, drag the edge of the time block to the desired location, and release. As you drag (mouse button down) the time block redraws to indicate its new position. Any time blocks that are completely overlapped during the stretch operation will be deleted when you release the button. Partially overlapped time blocks will be temporally trimmed. The implicit scrolling feature ensures that the Time Block Editor will automatically scroll when your edits extend beyond the displayed time range.

Delete

The Delete command removes time blocks from the GFE. To use it, select the parameters and time range of interest and from the main menu select the Delete command. All of the selected time blocks are removed and replaced with gaps. Once time blocks are deleted, they can only be restored with an Undo command. The GFE no longer supports the concept of a clipboard.

Copy

The Copy operation reads the gridded values from the source grid and assigns them to the destination grid. To copy values from one grid to another, the source and destination parameter units must be identical. This will let you copy Temp to MaxTemp, or Temp to Dew Point, if you so desire. There are two types of copy operations. Single grid copy works with a drag and drop technique, while the multi-grid copy uses the set of selected parameters to identify the source or destination.

Copying Single TimeBlocks

Like stretch, the copy command also works with mouse button 1, except that you need to hold down the shift key during the edit operation. To copy gridded values from one grid to another, follow these steps.

- Position the mouse cursor over the source grid, press the shift key and mouse button 1. The source grid will highlight as soon as the mouse button is pressed and will stay highlighted throughout the lifetime of the copy operation.
- While holding mouse button one down, move the cursor to the destination time block. As you move the mouse cursor over the time blocks, the time blocks will highlight indicating that they are eligible as a destination, since they use the same units. Destination time blocks will not highlight if they do not use the same units as the source time block or they are locked by another user.

- When the mouse cursor is finally over the desired destination block, release the mouse button. The values in the source grid will be copied to the destination grid and any editor displays based on the destination grid will be updated.

Not only can you copy to an existing time block, but you can also copy a grid to a gap as well. This type of operation will create a brand new grid whose time period is defined by the closest split boundaries.

For parameters that represent cumulative values such as QPF and Snow Accumulation, gridded values may not be copied directly into the destination grids. In those cases where the time duration of the source and destination differs, an accumulation rate will be calculated and applied to the destination value appropriately. For example, if a 6-hour Snow Accumulation grid was copied into a different 3-hour Snow Accumulation grid, the numerical values in the destination grid will be one-half the numerical values of the source grid.

Copying Multiple TimeBlocks

Copying multiple time blocks requires two steps: defining the set of time blocks to be copied to or from, and then executing the copy command. There are two types of multiple time block copy commands: Copy To and Copy From.

Copy To

The Copy To command copies the set of selected read-only (model) parameters to the forecast. For example, let's say that RUC Temp, RUC Dew Point, and NGM Winds are currently selected for the time period 00Z to 12Z. A Copy To command copies all of the time blocks found in this time period to the forecast. When the operation is complete, the forecast contains RUC Temp, RUC Dew Point, and NGM Winds for the time period 00Z to 12Z. Note that only the selected read-only parameters are considered when the Copy To command is invoked. If no read-only parameters are selected, the Copy To menu item is dimmed and not selectable. If the same parameter from different models are selected at the same time (e.g., RUC Temp and NGM Temp), the Copy To menu is also dimmed and not selectable, since it's not clear which parameter should be used as the source.

Copy From

The Copy From menu, produces a list of sources. When one of these sources is chosen, the Copy From command looks only at the set of mutable (forecast) selected parameters and their time periods to determine what grids to copy. For each selected forecast parameter, the grids from the chosen source are copied into the selected time period. If no forecast parameters are selected, the Copy From menu item is dimmed and not selectable from the main menu.

Copy All Times From

Copy All Times From command uses the set of selected parameters but ignores the selected time period. To use it, first you select the set of forecast parameters that you want initialized. Then

from the main menu bar, select the source from which the copies will be made. For each selected forecast parameter, all of the source grids (with the corresponding name, e.g., Wind) will be copied over the entire source time range. For example, let's say that you select Forecast Temp and then select Copy All Times From RUC. The set of RUC Temp grids fill the time range from 12Z to 00Z, so all 12 one-hour grids are copied from RUC Temp into Forecast Temp for the time period from 12Z to 00Z. Using this method you can initialize your entire forecast with two operations: Select All Forecast Parameters, Copy All Times From (model of your choice).

Copy All Times To

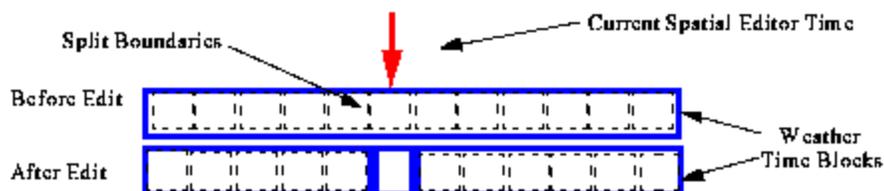
Copy All Times To works in a similar way except that it is only concerned with selected read-only parameters and not their time periods. When invoked, Copy All Times To copies the entire set of grids from each selected read-only parameter into the forecast parameter with the same name. If two or more parameters with the same name are selected (e.g., RUC Temp and NGM Temp) then the Copy All Times To is dimmed and not selectable.

Time Shifting

The results from previous AFWG meetings as well as the WFO-Advanced exercise suggested that shifting a contiguous set of grids in time was not a frequent operation. So, rather than include time shifting as a fundamental part of the time block editor, we moved it to a dialog box which is available from the main menu. To time shift a contiguous group of time blocks, select a single forecast parameter and time range. Then from the main menu, select Time Shift. A dialog box will appear that asks you to enter the number of hours and in which direction you wish to shift. Click the OK button and the selected time blocks are moved in time. Of course, you will not be allowed to shift time blocks into a time range that is locked by another user. This dialog will ensure that you make a reasonable choice.

Auto-Split Mode

Auto-Split Mode performs automatic split on time blocks that are edited in the Spatial or Temporal editor. These automatic splits occur on split boundaries. Here's how it works. Let's say you decide to edit a weather grid that is currently 12 hours long. The moment that you start an edit operation, either in the Spatial or Temporal editor, the 12 hour block is automatically split into two or three time blocks. The figure below illustrates this concept.



Controlling Other Editors

There are a couple of other features that allow you to control the behavior of the Spatial Editor from the Time Block Editor. One determines what is displayed in the Spatial Editor, while the other commands the Spatial Editor to edit a specific grid.

Pass-over mode

Pass-over mode, controlled from the main menu bar, can be set to on or off. When Pass-over Mode is on, anytime you move the mouse cursor over a time block, the corresponding grid is displayed in the Spatial Editor as an image. No other grids are displayed until you move the cursor to another time block or move the cursor out of the Time Block Editor. Once the cursor leaves the Time Block Editor, the Spatial Editor displays the set of grids identified by the set of visible parameters and the Spatial Editor time. This feature provide you with a way to quick view the gridded data component of a time block.

Direct Edit Operation - Button 3 pop-up

Another time-saving feature added to the Time Block Editor is Direct Edit. To invoke it, move the cursor over the time block that you wish to edit. Press button 3 and a pop-up menu will be displayed that includes Direct Edit as one of its menu items. Selecting Direct Edit in time-sync mode will:

- Change the current Spatial Editor time to the start time of the selected time block.
- Modify the set of active parameters to include only the parameter that you selected.

The Direct Edit is a short-cut feature that configures the Spatial Editor to edit just the grid that you want. This should save you time since you won't have to: set the Spatial Editor time, set any currently active parameters to inactive, and set the desired parameter to active.

What Do You Think?

[Tell us what you think!](#) Do you like it? The few comments we have received in the past have made a difference. Please comment.