



Workflow Automation for Broadcast & Cable



NOTE: SOME OF THE INFORMATION
AND GRAPHIC DISPLAYS IN THIS USER GUIDE MAY NOT REFLECT
THE CURRENT STATE OF THE RELEASE SOFTWARE.

- Time-of-Day Events
- GPI Event Triggers (I/O)
- Live Event Switching
- MPEG-2 Segment Editor
- Traffic Import
- Router and VCR Control

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Automation User Guide

MASTERPLAY Automation is designed to work in a file-based environment, virtually eliminating videotape machines from the record (encode) and playback environment. The system accommodates four operating profiles:

- 1) Time-of-Day Event Scheduling/Playback
- 2) Event “triggers” (GPI)
- 3) Manual event playback
- 4) File Import Scheduling (traffic)

A playlist may contain any or all of these event types.

MASTERPLAY also controls routing and/or master control switchers using RS-232 serial communications protocol ... and two VCRs (option) via Sony 422 (P2) protocol.

OVERVIEW: MASTERPLAY and the PLAYLIST EDITOR

MASTERPLAY Automation software is hosted on a video/graphics servers from several brands. It is the scheduling and management engine for playback of graphics and motion video files. Supported video file formats are MPEG-1 and MPEG-2. Supported graphics formats include BMP, JPG, GIF, TIF, TGA, and RTF. The PE version does support additionally AVI, h.264, mkv, mov and many more. On Screen Display and SDI output depending of used cards

The **Playlist Editor** lets you create looping files and/or folders ... specify dates and times for events ... and edit your content for visually seamless update of the on-air Playlist(s).

As you build your programs, the Playlist Editor automatically calculates and displays the total duration of ... and time remaining in ... each program as you add MPEG files, measuring the exact length of each file for accurate program timing (as shown here at the top of the window).

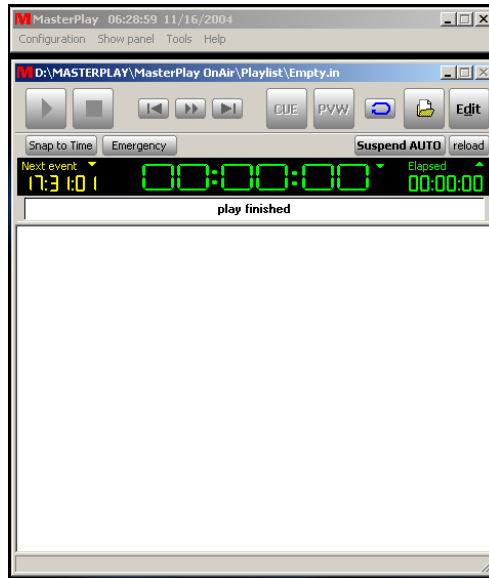


The User Interface divides the Playlist Editor screen into three columns. The left column has two tabs: **Events** and **File Selector**. Using the **Event Manager** calendar, you specify WHEN you want an event to happen. Then go to the File Selector tab and select WHAT file(s) or folders you want to play at the scheduled event time. Just drag and drop those items into the Event Window in the middle. MPEG and graphics files are displayed with picture icons (picons). In this example, three segments of “The Lone Ranger” are in program directories ... with spots inserted in the three breaks. The **Total Time** shows 30:00 ... which is the total of segments and spot durations.

CREATING A PLAYLIST

Generally, you will schedule and manage playbacks (using the **Playlist Editor**) on the server itself. However, you can schedule from any computer that is networked to the playout server. And using the supplied **LogMeIn** remote communications software, you can operate MASTERPLAY from virtually anywhere in the world!

Double-click the desktop **MASTERPLAY** icon ... and the application will open.

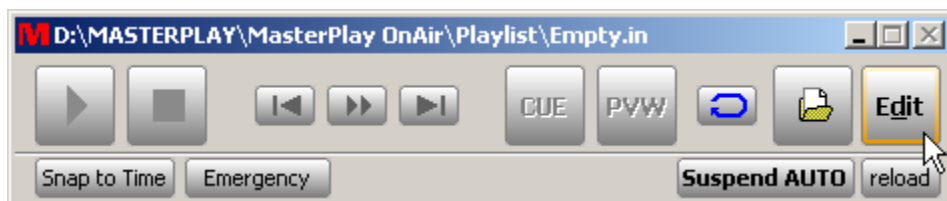


MASTERPLAY Playlist (empty)

This is the simple view. If your settings differ you will see the full interface with the playlist in the center.

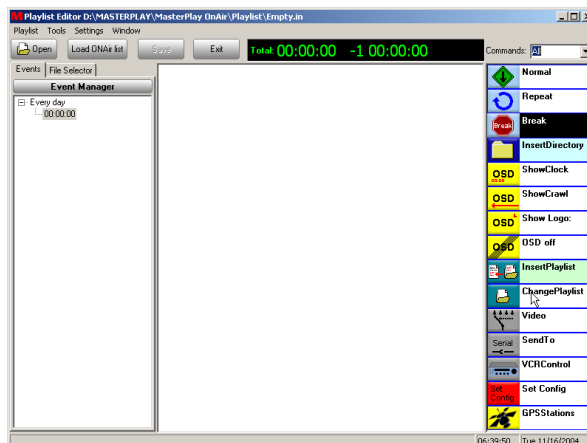
The last playlist you loaded in MASTERPLAY will appear. In this example, we have opened a playlist we've saved and called Empty (**Empty.in**), so there are no events to display. You can create and save as many playlists as you wish.

USING THE PLAYLIST EDITOR



To create a schedule (add events) you use the **Playlist Editor** in MASTERPLAY. To open the Playlist Editor, click once on the **Edit** button at the top right of the Playlist window. The editing window will open.

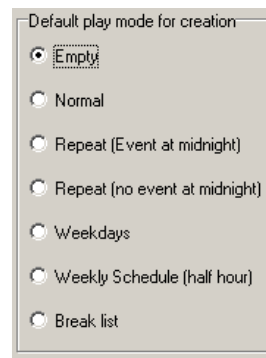
The column of icons at the far right contains drag-and-drop icons that are used for providing 'instructions' on how each event will be displayed and/or 'triggered' ... as well as **On Screen Display (OSD)** functions such as graphics/logo insertion and text crawls. An explanation of the individual functions will follow.



CREATING A NEW PLAYLIST

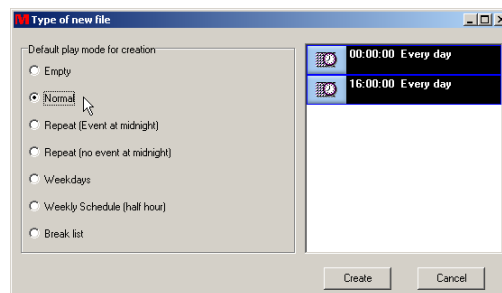
It will be most beneficial for you if, in this exercise, you create your own playlist ... using any or all of the following examples.

There are six scheduling **‘templates’** that are very useful in getting you started. Perhaps the most commonly used template for cable operators ... as well as broadcasters who intermix Time of Day programming with DTMF driven GPI triggers ... is the **“Weekly Schedule”**, which creates 48 half-hour program ‘slots’ for every day of the week (Sunday through Saturday). The following is an overview of all the available templates.



Normal – In the Preview Pane you see the elements of the Normal template. Interpretation of this template is:

- 1) Every day, starting at midnight (00:00:00) ...
- 2) send a Play command to the following file or files that you drag and drop into the playlist.
- 3) Every day, starting at 4:00pm (16:00:00), send a Play command to the following file or files that you drag and drop into the playlist.



These are just examples ... so you can modify and/or delete the times ... and insert as many times as you wish using the **Event Manager** in the Playlist Editor.

***NOTE:** The system defaults to a NORMAL status, meaning that you do NOT have to insert the Normal instruction (green icon) before the events you drop into the playlist.*

Repeat (Event at midnight) – In the Preview Pane you see the elements of this template. Interpretation of this template is:

- 1) Every day, starting at midnight (00:00:00) ...
- 2) send a **Repeat** command to the following file or files that you drag and drop into the playlist.

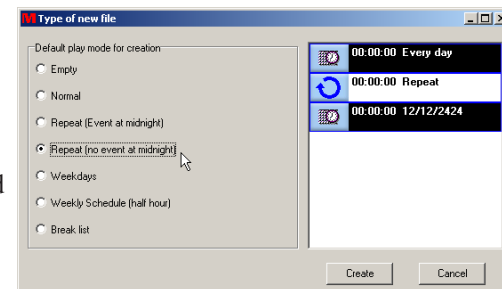
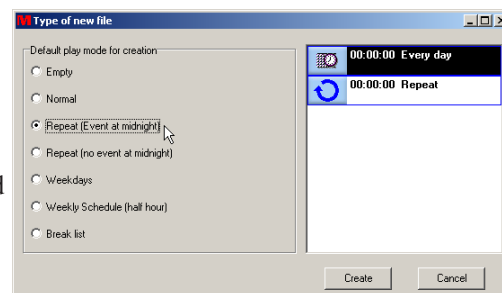
At the end of the playback of the files, they will immediately play again, creating a ‘loop’ that plays continually for 24 hours. At midnight, the file(s) will start at the beginning of the first file and play the loop again for another 24 hours.

***NOTE:** You can insert video files, graphics files, FOLDERS containing video and graphics files, and other Playlists. After all the files/folders have played, the looping playback continues until midnight ... when the first file/folder again starts to play.*

Repeat (no event at midnight) – In the Preview Pane you see the elements of this template. Interpretation of this template is:

- 1) Every day, starting at midnight (00:00:00) ...
- 2) send a **Repeat** command to the following file or files that you drag and drop into the playlist.

At the end of the playback of the files, they will immediately play again, creating a ‘loop’ that plays continually for 24 hours. At midnight, the looping file(s) will continue to play without restarting from the first file.



Weekdays – In the Preview Pane you see the elements of this template. Interpretation of this template is:

- 1) Every Sunday, starting at midnight (00:00:00) ...
- 2) send a **Repeat** command to the following file or files that you drag and drop into the playlist.

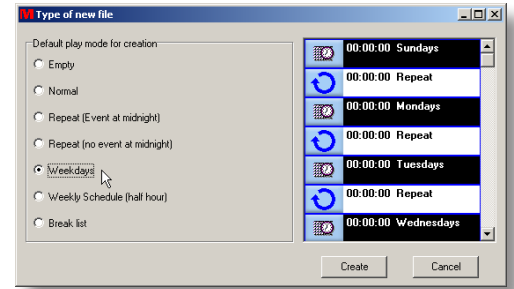
At the end of the playback of the files, they will immediately play again, creating a 'loop' that plays continually until midnight.

- 3) Every Monday, starting at midnight (00:00:00) ...
- 4) send a **Repeat** command to the following file or files that you drag and drop into the playlist

The template continues for all seven days of each week.

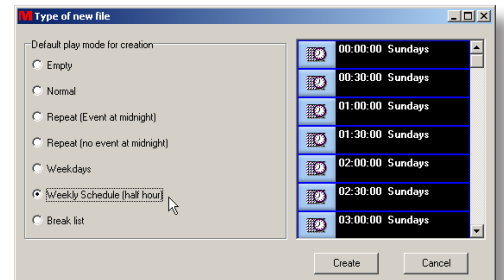
This allows you to create a unique program schedule for each day of the week. The playlist will run every week starting on Sunday. You will, in many cases, be changing the content (files) for each week's schedule.

NOTE: You can copy this list (using "Save As") and rename it based on weekly dates, e.g. **12-2-02.in / 12-09-02.in / 12-16-02.in** etc. By doing this you can create programming as far into the future as you wish.



Weekly Schedule (half hour) – In the Preview Pane you see the elements of this template. This is simply a 'pre-slotted' version of the Weekdays template.

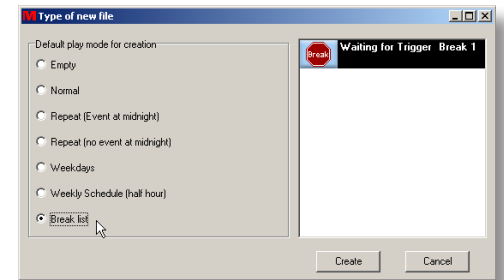
This file creates something like a 'DayTimer' or Outlook schedule ... providing 48 half-hour program 'slots' for each day of the week. This is perhaps the most commonly used scheduling template. We'll examine this more closely in the next section.



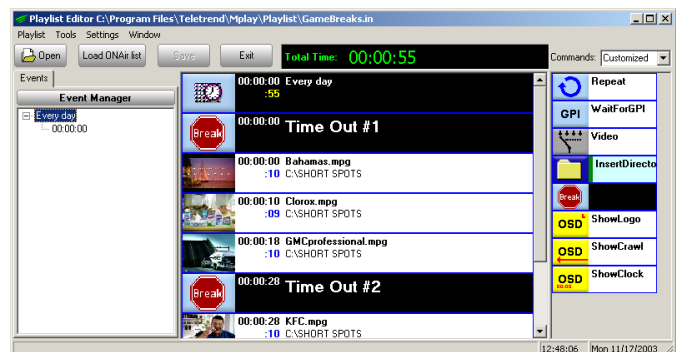
Break list – In the Preview Pane you see the elements of this template.

This template is useful if you are creating Playlists that will be used for manual commercial insertion.

A good example of this is a **sporting event**, like a football game, where there are no fixed times for commercial breaks to run. During a three hour game there may be dozens of prepared breaks ... each of which runs when the official blows the whistle, calls Time Out, etc. The operator waits for the network fade to black, then clicks the play button - or an external button - to switch the router and simultaneously start the break playback. At the end of the playback the router switches back to the previous feed.



This mode, also called "Break Mode", is also useful for live **News** programs and **PBS** pledge drive programming. You simply drag spots after each break line. You can also create and display a title for each 'break line', as will be discussed later in this Guide.



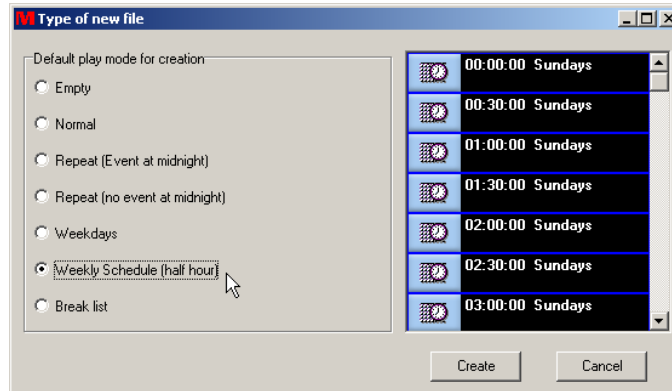
STARTING FROM SCRATCH: Creating a Playlist

To get you acquainted with the techniques and procedures used for scheduling, we'll go through the exercise of creating and populating one of the most typical playlist formats: the **Weekly Schedule (Half-Hour)**.

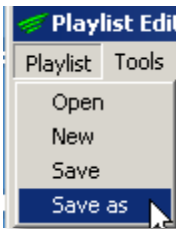


Under the Playlist menu, click on **New**. The **Type of new file** dialog window will appear, with **Empty** as the default.

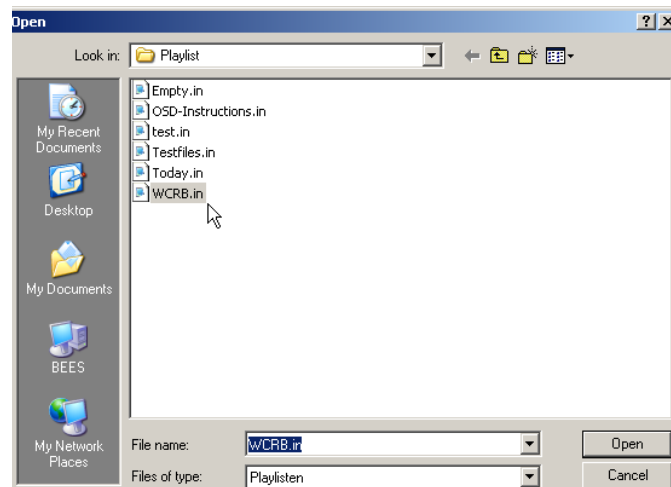
Click the **Weekly Schedule (Half-Hour)** radio button ... then click **Create** to open a New List.



*Note: It is generally good practice to use the **Save As** function to name your Playlist before you start scheduling events.*



Select the **Save As** function from the **Playlist** dropdown. The **Save As** file naming dialog will appear, with the default destination being the **Playlist** subfolder in the **MASTERPLAY** folder:



Replace "**New file**" in the File name field with a name that describes the Playlist you will construct. In this example, we have named the file, "**WCRB**". The file is automatically saved as the proper Playlist type (**WCRB.in**).

SCHEDULING

Now you've created and named a Playlist, so you're ready to build a schedule that may contain any of the following file types, in any order:

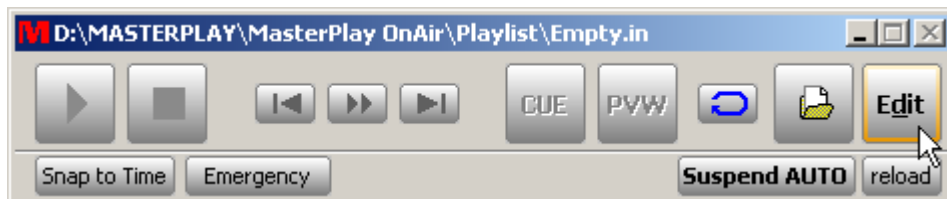
MPEG-1, MPEG-2, JPG, BMP, TIF, GIF, TGA and RTF

You can insert files, folders, and other Playlists. You can also schedule "LIVE" events by controlling a routing switcher and/or master control switcher. You can also control graphics/logo insertion ... and generate text messages and crawls ... all by using familiar Windows drag-and-drop techniques.

MASTERPLAY supports many operations models, including broadcast scheduling, cable insertion, Public Education and Government (PEG) channels, campus information channels, and kiosks. The program is designed for versatility ... and is well-suited for any of these environments.

In the following exercise, we will use the WCRB playlist to schedule Time-of-Day events; looping playback of folders that contain video and graphics files; events specified by date and time; and On Screen Display of text and logos.

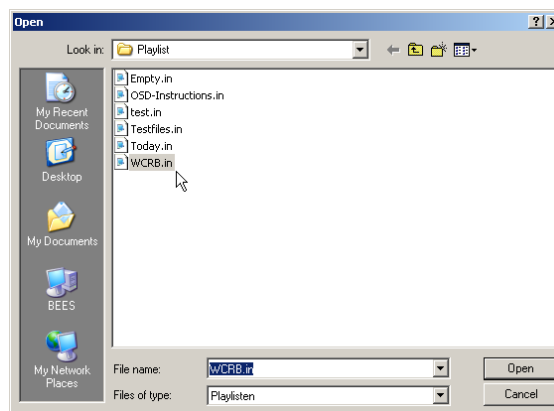
If MASTERPLAY isn't already open, double-click the desktop icon to open the program. If the WCRB.in file doesn't load, click on the **Edit** button on the **Playlist** to open the **Playlist Editor**.



On the Playlist Editor, click once on **Open** ...



and select that file from the Playlist folder by **double-clicking** ... or select (highlight) WCRB.in and click **Open**.



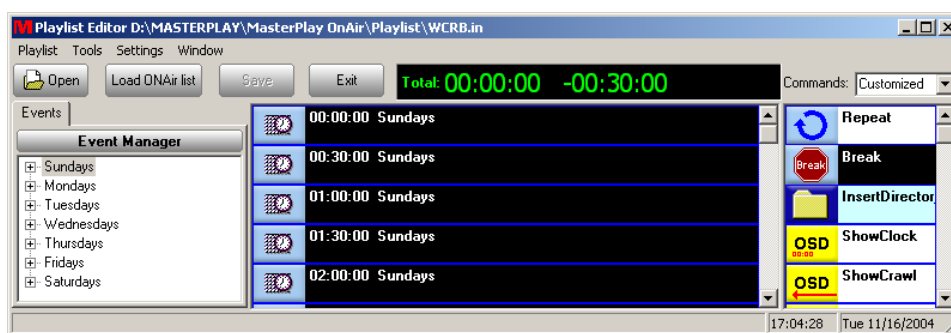
PLAYLIST EDITOR: DESIGN CONCEPT

MASTERPLAY is designed around the concept of all-digital file management. The fundamental difference between this and tape-based operations is that digital files play from start to end automatically. The mechanics of loading tapes, pre-rolls, post-rolls, etc. are no longer considerations. Since digital files have an exact and finite length, it's easy for the computer to manage your 'timeline' with frame accuracy.

Using the Playlist Editor, you create EVENTS. An Event is defined as 'what happens' between any two specific points in time, e.g. 7:00 and 7:30 (these are also called "hard times"). An Event can be comprised of the following:

- one or more MPEG files
- one or more graphic files
- a video switch to a LIVE or other external source
- any combination of the above

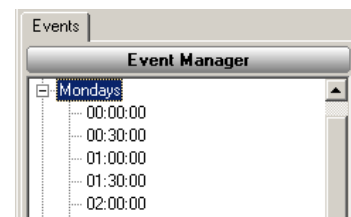
Although we provide several templates you can use to build a playlist, you can create your own playlists 'from scratch' ... and/or modify any template using the editing tools available in the Playlist Editor. You can also import files from commercial 'traffic' systems, creating a Playlist from this external data.



This is a view of the WCRB playlist in the Playlist Editor. Notice that all seven weekdays are shown under the Event Manager on the left. The Event Window displays the half-hour 'slots' you'll use to create your Playlist. The default view shows all the slots for **Sundays**. If you click on any of the other days, you'll see the entire playlist for that day displayed in the Event Window.

Notice the + sign to the left of each weekday, indicating there is a 'tree' of timeline information associated with that day. In order to schedule events, you'll need to 'expand' that tree (day) to see the associated time slots.

When you click the + sign next to **Mondays**, the Event Manager window expands to show half-hour increments for the entire day ... from midnight to midnight. You can **Edit** any of these times ... or **Add** new times ... to conform to the specifics of your own operations. We will explain in detail how to manage these functions, but for now we'll continue with a 'real-world' exercise that probably best simulates your scheduling environment.

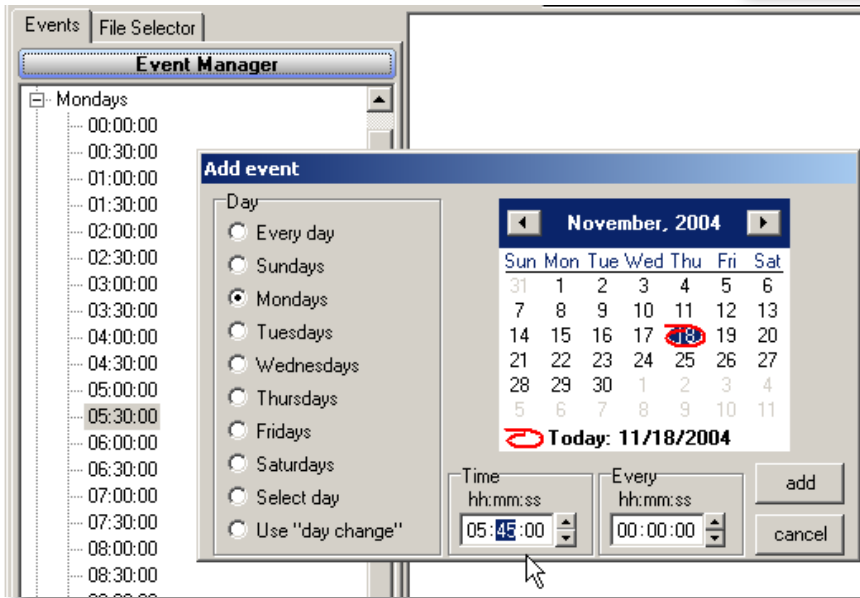


We will build a portion of a sample Playlist by doing the following exercise for Mondays:

- 1) Create a "Sign On" block of graphics and MPEG files from 5:45am to 6:00am
- 2) Insert four one-minute Breaks in a LIVE morning news show from 6:00am to 6:30am
- 3) Schedule a previously encoded program - and insert three breaks - from 6:30am to 7:00am
- 4) Go to America One satellite programming with cue tones for breaks and local ID from 7:00am to 7:30am

GOOD MORNING, WCRB!

Click the + to the left of Mondays to expand the timeline, and click on 05:30:00 to select that specific time. Then click the **Event Manager** button. The **Add event** dialog appears.

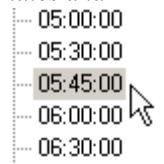


(Click the **Event Manager** button to see the **Add event** dialog)

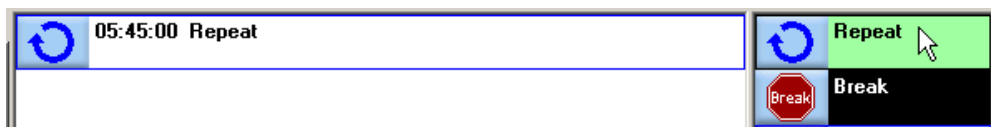
2) In the Time entry field, select the minutes (**mm**) and enter **45**.

Note: Use the mouse to drag through and highlight the minutes ... or double-click to select the minutes and use the up and down arrows to change ... or highlight the minutes and enter any two digits from 00 to 59.

3) Click the **add** button. Notice that you now see a new entry highlighted in the timeline scheduling “tree” ... with no event(s) yet scheduled (in the Event Window) for that time. Also notice that the total time for that event is 00:15:00, as indicated above the Event Window.



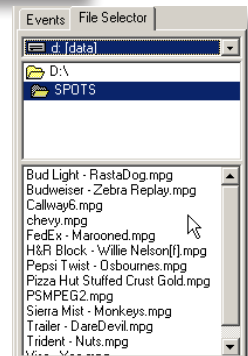
4) Go to the Commands window on the right ... then drag and drop the **repeat** icon into the Event Window. This instruction means: Play the following files over and over again until the next Event time.



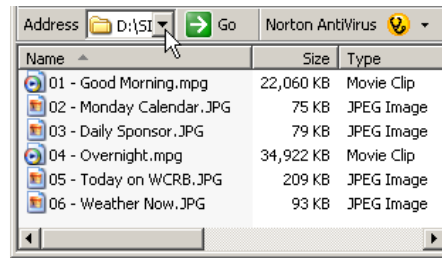
5) Now click the **File Selector** tab on the left, and find files and/or folders you want to place in the list at that time. Simply left-click and drag the files/folders to the Event Window that is displaying the currently specified Event time. While you are dragging you will see the modified cursor icon showing a file pointer is being moved into the icon window.

Here you can see the different displays under the two tabs. File Selector is the equivalent of Windows Explorer ... letting you browse your computer content and select files and/or folders to drag into the Event Window. The Events tab lets you select, define, and edit the Event times into which you drop your content (files and folders).

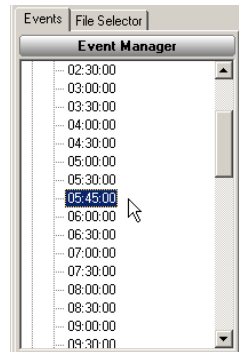
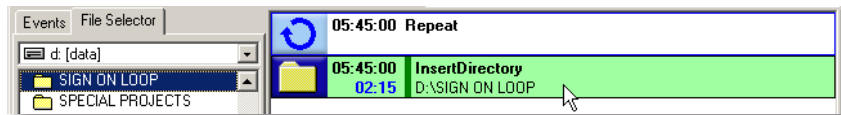
So essentially the Events tab = **WHEN** an Event is scheduled to play
and the File Selector tab = **WHAT** files or folders are available to play



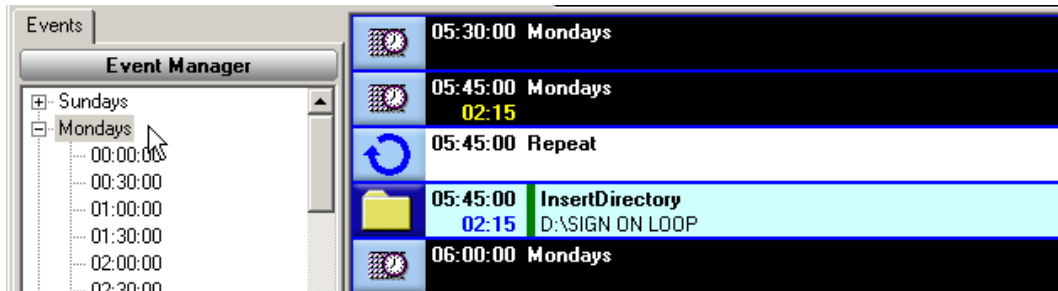
6) Now we'll insert a directory (folder) called SIGN ON LOOP with MPEG and JPG files in the 05:45:00 Event Window slot. Notice that we've determined the order of file playback by putting a two-digit number at the beginning of the file name. This is because Windows sorts folder contents alphanumerically.



Be sure you've selected the 05:45:00 Event slot under the Events tab ... then click the Select File tab and locate the directory (in this example) that you want to insert into the Event Window. Simply left-click and drag that directory beneath the Repeat icon we've already placed in the Event.



If you now click Mondays at the top of the 'tree', you'll once again see the entire day of 'slots' ... but with the addition of the repeating SIGN ON LOOP folder. You can see that the contents of the folder totals two minutes and fifteen seconds (02:15). But because of the Repeat instruction, the folder will play over and over again until the next Event, which is at 06:00:00.

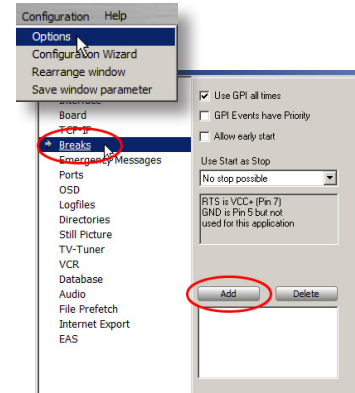


MAKING THE NEWS!

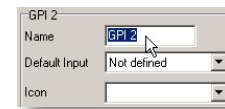
Now that we've scheduled the SIGN ON, let's schedule a LIVE news program that has four one-minute breaks that occur at random times during the program. This is the same procedure you would use for other "live" events such as sporting events and fund raising telecasts.

The first thing we'll do is create an assignment of routing switcher crosspoints for automated switching between the studio and the MPEG playback decoder. Since the functionality of this type of operation is similar to waiting for a GPI tone to trigger a break, you create the defaults in much the same way.

- 1) On the MASTERPLAY utility bar, click **Configuration > Options**
- 2) Click Breaks.
- 3) Click Add. Since this will be used for all switching between Breaks and the live studio, we'll name this break "STUDIO". Notice you can also Delete and Add as many custom breaks as you wish to your system configuration



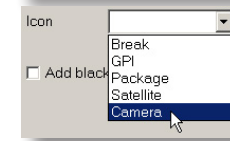
- 3) Delete the text in the "Name" box and type the word "STUDIO".



- 4) Now we want to define the Default Router Input to be the input you've named STUDIO in your router configuration table. So just click the arrow to locate and make your selection from the list.

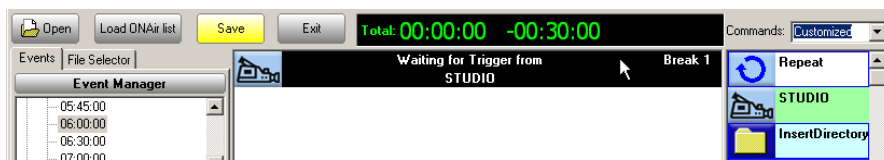


- 5) Finally, we want to associate an appropriate icon with the type of input, so that it's easy to quickly identify a particular GPI or Break Instruction in the Commands list in the Playlist Editor ... with the same representation in the Playlist. Since this is a STUDIO break setup, we'll select **Camera** from the drop-down list.



Now we're ready to complete the scheduling of the half-hour Morning News program.

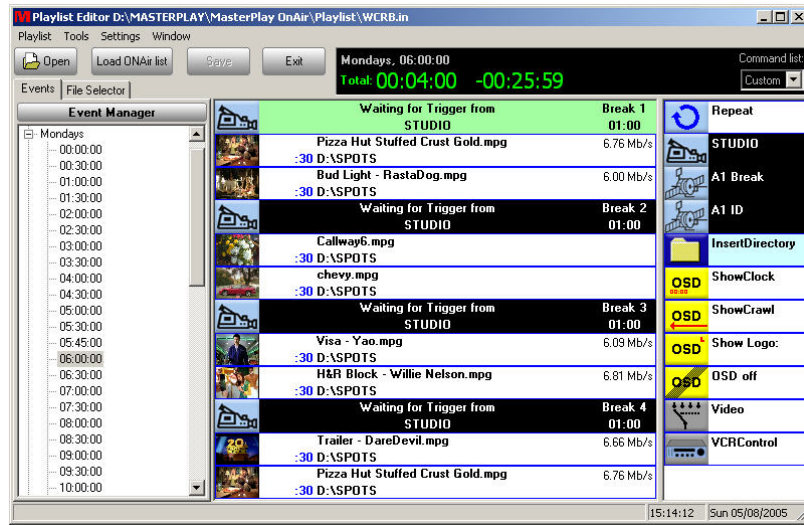
In the Playlist Editor, click on 00:06:00 to select the Event time. Notice that there is now a STUDIO command in the instruction column on the right. Just drag and drop that instruction into the Event window.



Click the File Selector tab ... and drag in two :30 spots for the first Break.



To complete the scheduling of Breaks for the LIVE "Good Morning" show, just drag in three more STUDIO instructions, with each instruction followed by two :30 spots.



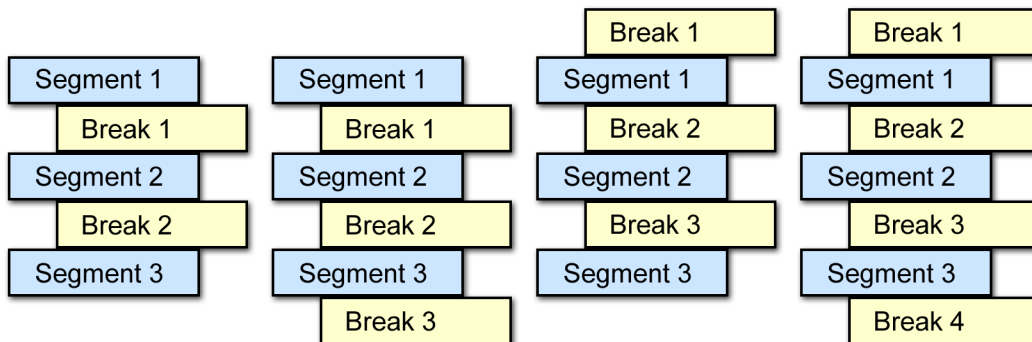
Here is the completed half-hour program. Notice that each time you dragged in another STUDIO command, the Break number automatically incremented on the right side of the Event window (Break 1, Break 2, etc.) The Total time of the scheduled files in the Breaks is four minutes (00:04:00) ... with the remaining time in the Event (from 06:00:00 to 06:30:00) being 26 minutes (00:26:00). You can always use the calculated Time display to confirm that you have the desired length of digital file content within each Event time.

Note: If your total file length is greater than the Event time, the calculator will display the 'overtime' in RED ... with a plus sign (+) before the number. You can then trim segment and/or break times accordingly. It's important to know that even if the total file length exceeds the Event time, the automation will automatically move to the next scheduled Event time, shortening the last file by the amount of the exceeded time.

SEGMENTS and BREAKS: An Overview

Before we move on to scheduling a half-hour slot using previously encoded MPEG-2 program segments with Breaks between Segments, it's important to understand the relationship between Segments and Breaks in an all-digital, file-based automation system.

This example shows the possible combinations of Segments and Breaks using three Segments within any Event time slot. Remember: a "slot" is another term for "Event". It refers to the amount of time between two specific "hard times" in the Playlist, e.g. 06:30:00 and 07:00:00. In general, the minimum number of Segments and Breaks is one each.



This translates into four possibilities:

- # Breaks = # Segments - 1 (Break 1 starting AFTER first Segment)
- # Breaks = # Segments (Break 1 starting AFTER first Segment)
- # Breaks = # Segments (Break 1 starting BEFORE first Segment)
- # Breaks = # Segments + 1 (Break 1 starting BEFORE first Segment)

Thus, the number of Breaks is generally equal to; one less than; or one more than the number of Segments.

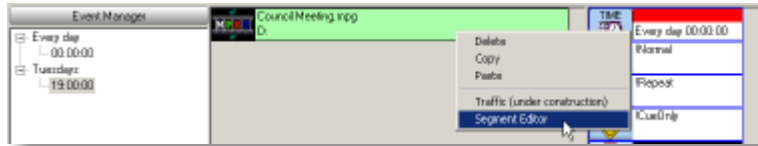
USING THE SEGMENT EDITOR

The **MASTERPLAY Segment Editor** is a useful utility that enables you not only to ‘trim’ the beginning and end of MPEG or AVI files ... it also lets you create multiple segments within a file by creating IN and OUT ‘pointers’ that represent segments of that file. You can even “grab” a frame to use as a picon in the Playlist Editor/Playlist.

If you are familiar with nonlinear editing programs, then you already understand the concept of ‘virtual edits’. You can play multiple ‘clips’ in any order without actually modifying the original content.

In fact, most of the functions in the Segment Editor have keyboard shortcuts that mimic many nonlinear editing interfaces ... and specifically **Adobe Premiere**.

After you’ve segmented a file, you can select any or all of the segments to play in any order in the playlist. All this information is stored within the MPEG file as metadata, so the information ‘travels’ with the file or copies of the file. Any MASTERPLAY Automation system will recognize the metadata and allow the User to take advantage of the embedded segment information.



Right-click on a file in the playlist inventory and select **Segment Editor** from the drop-down menu. The Segment Editor utility will appear, with video cued to the first frame of the file. You can also open the Segment Editor by simply **double-clicking** a file.



Click the **Play** button. Then click the **Set IN** and **Set OUT** buttons to define the Segment. After you’ve clicked the Set OUT button, playback will stop. You can then click the **Goto IN** and **Goto OUT** buttons to check your marks.

To trim your marks, just click the **single frame buttons** (< >), and when you reach your desired position, click the Set IN or Set OUT buttons again as required.



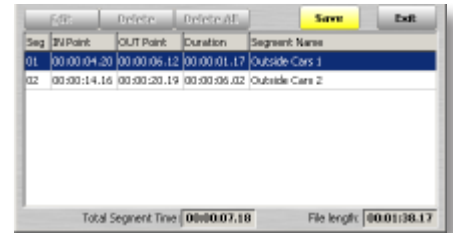
As you click the Set IN and Set OUT buttons, you will see the ‘captured’ time code appear in the respective IN and OUT fields. The duration is automatically displayed.



Place the cursor in the **Segment Name** field, and create a unique name for each segment. Then click the **Update List** **button** to add the segment to the segment inventory.

When you’ve entered one or more segments into the inventory, the **Save** button will illuminate bright yellow. Click on the **Save** button to save the segment information.

NOTE: At the bottom of the display are two fields that indicate the **Total Segment Time** (based on the aggregate time of the segments in inventory) and the **File length**. The **Total Segment Time** is useful in determining the amount of commercial or promo time needed to fill a defined program length ... such as a half-hour program.

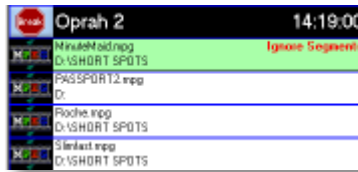


Example:

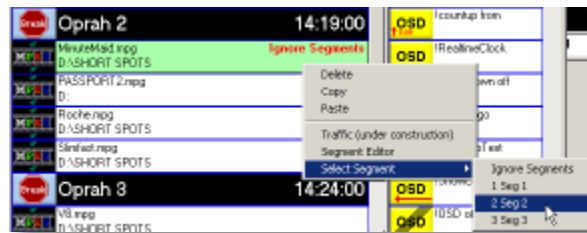
Total Segment Time = 22:45
 Total Show Duration = 30:00
 Total Break Time = 07:15

In the Appendix of this User Guide there is a list of the keyboard shortcuts you can use with the Segment Editor.

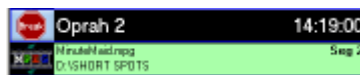
NOTE: The video window is displayed using Windows Media Player. When you are working with MPEG files, you won't necessarily achieve single frame accuracy when marking IN/OUT points -- or in step-motion -- due to the GOP structure of MPEG files.



After you've segmented a file in the playlist, it displays with a red **Ignore Segments** label in the icon window. This is to remind you that the file has been segmented ... and you can choose one or more of the individual segments to play.



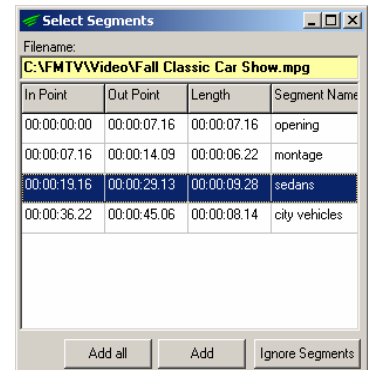
To select a particular segment for playback, right-click on the file ... choose **Select Segment** from the drop-down menu ... and then choose the Segment you wish to play from the fly-out menu.



After you've made the Segment selection, it is displayed in the icon window as shown in this example.

NOTE: You can play different Segments at different places in the playlist by dragging in the file for each occurrence, then selecting the desired Segment for that occurrence.

When you drag a segmented file into the playlist Event Window, this window will appear. You can click **Ignore Segments** to load the entire file; select (highlight) a particular segment and click **Add**; or click **Add all** to place all the segments in the playlist.



ICON GRABS / ICON DISPLAY SIZES

Using the **Segment Editor**, you can ‘grab’ a frame from an MPEG file to use as a picon (picture icon) in both the Playlist Editor and the Playlist.

Double-click any MPEG file in the playlist to open the Segment Editor. Using the **Play** button ... or the **shuttle** bar ... find the frame you wish to capture - then simply click the **Grab** button.



A small icon will appear to the right of the **Grab** button. This is the picon that will be used in the Playlist Editor and in the Playlist display. Click **SAVE** to store the picture as metadata in the MPEG-2 file, even if you don’t segment the file.



You can also do a “Batch Grab” of all the files currently in the Playlist. In this case, the program automatically selects the frame to capture based on the length of the file. You’ll find this under the **Tools** item on the menu bar of the Playlist Editor.

If the file is **two minutes or shorter**, the Grab frame is **three seconds BEFORE the END of the file**.

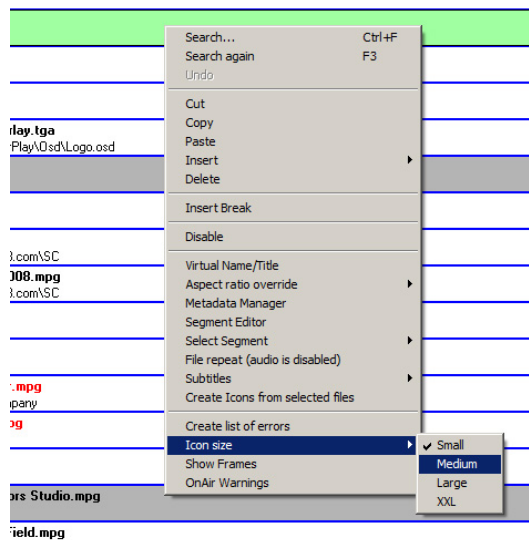
If the file is **longer than two minutes**, the Grab frame is **three seconds AFTER the START of the file**.

You can choose between four different sizes of icons that are ‘grabbed’ from each MPEG file using the Segment Editor.

To change the icon size in the Playlist Editor:

Right click any file in the list and choose Icon size from the list. A submenu will appear with four choices, Small, Medium, Large, and XXL. Choose the size you wish.

To change the size of the icon in the main Masterplay interface window use the same method.



SCHEDULING A PROGRAM WITH MULTIPLE SEGMENTS

In the previous sections we discussed the relationship of Segments and Breaks ... and how to use the Segment Editor to define program Segments you'll schedule using the Playlist Editor.

In earlier exercises we created a morning SIGN-ON (05:45:00 - 06:00:00) ... and a live half-hour morning news program with four breaks (06:00:00 - 06:30:00). We'll continue our exercise with a third Event, scheduling a previously encoded program in the event slot from 6:30am to 7:00am (06:30:00 to 07:00:00). There will be three segments ... with each segment followed by a break.

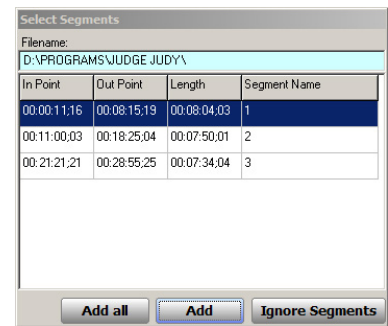


(Playlist Editor: half-hour show scheduled with three MPEG Segments and three Breaks)

1) Inside a folder called PROGRAMS on the D: drive, create a folder called "JUDGE JUDY".

2) After encoding the entire half hour episode, copy the file into the "JUDGE JUDY" folder you just created and use Segment Editor to create three segments ... eliminating the embedded commercials and keeping only the program material.

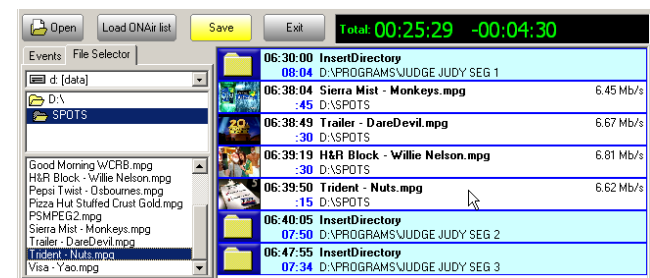
3) Select the 00:06:30 Event time (slot) ... and using the File Selector locate the program inside the "JUDGE JUDY" folder and drag it into the Event window. Immediately upon dropping the file a "Select Segments" dialog will appear. In this case choose "Add all" because you want to show all 3 segments of the program. Now you will see each segment in the list with the duration below the start time ... AND the Total and Remaining times in the Event -- displayed above the Event window.



4) To add spots for each Break, use the File Selector to locate the desired files, and drag them into the Event Window. When you "drop" the file into the list, it will be placed BEFORE the event onto which you drop it (release the mouse button). You can move any event anywhere in the list by dragging and dropping it using traditional Windows mouse techniques.



Notice that after you insert the files, the Total Time window displays the changes in time used and time remaining.



Follow this procedure until you've added all your spots for the scheduled program. *Reminder: for a show with three segments you can schedule two, three or four breaks!*

SCHEDULING A PROGRAM FROM A SATELLITE NETWORK

There are a number of satellite delivered program services such as America One, FamilyNet, Urban America Television Network, UPN, and many others. Many of these providers offer time slots for affiliate breaks and local IDs. Often they send encoded DTMF tones, either embedded in the subcarrier of the video signal or on a second audio channel.

These tones must be detected by a device that recognizes them ... and which then initiates the sequence to switch the audio/video FROM the satellite receiver TO the file playback on the Automation server. After the scheduled files have played, the automation switches FROM file playback TO the satellite receiver ... or to the next designated Event.

MASTERPLAY has built in DTMF decoder or uses the DT-232 DTMF tone detector with RS-232 serial output, by CircuitWerkes. It has two connectors: a 1/4" TRS female phone connector for receiving balanced or unbalanced audio from a satellite receiver ... and a DB-9 female serial connector. Use a standard straight-through 9-pin serial cable to connect this device with an available serial port on your Automation server.



RS-232 1/4" TRS
DB-9F audio in

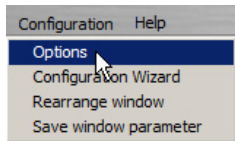
SETTING UP YOUR GPI INSTRUCTION

For this exercise we'll set up America One (sometimes referred to as "A1") as the satellite-delivered program provider. They offer two one-minute affiliate breaks (2 x 1:00) every half hour ... as well as a :10 affiliate ID slot at the end of every half hour. The Start tone for the affiliate breaks is 509*, and the Start tone for the affiliate ID is 928*.

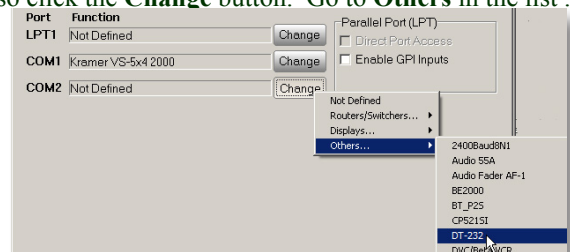
Setting up the GPI is very similar to the procedure used to create a Break as discussed on Page 13, since in both cases the automation system is 'waiting' for something to trigger the switch from a current program source to the MPEG playback card and then back to the program source.

In order to use the DT-232, you must first connect it to an available serial port of your MASTERPLAY Automation server. Once the connection is made (using a straight-through RS-232 serial cable - DB9M to DB9F), you have to "tell" the system software it is there.

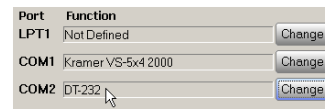
Go to **Configuration - Options - Ports**. COM2 is **Not Defined**, so click the **Change** button. Go to **Others** in the list ... then select **DT-232** in that list.



NOTE: If you do NOT define the DT-232 on a COM port, you will not be able to enter a DTMF value (e.g. 509) in the GPI Start command recognition field.*



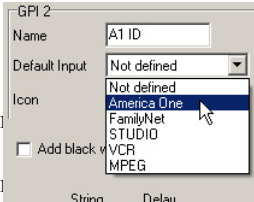
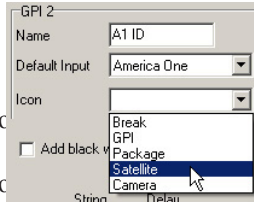
The status now indicates that the DT-232 is attached to the COM2 port on the server. Now you're ready to set up TWO America One GPIs ... one for breaks and a second for the local ID.



1) On the Configuration menu, click **Options**.

2) Click the **Add** button and name this break **A1 Break**.

Since you'll use two separate breaks, one for spots and one for the ID, create a **SECOND** break called **A1 ID**, using the same procedure in steps 1 - 2 on the previous page.

- 5) On each of the  drop-down menu, select **America One**.
- 6) On each of the  drop-down menu, select **Satellite**.

7) The final step in preparing your A1 breaks is to enter the Start tone sequence and Event Delay. Select the A1 Break and enter 509* in the empty Start field.

In the empty Delay field to the right of the tone sequence, enter the amount of time you need to delay the switch FROM the America One router input TO the MPEG playback card and the start of the break playback. The delay for America One is 6 seconds and 22 frames. In order to calculate that exact delay offset divide the number of frames by 30. $22/30 = .75$ so the delay is 6.75 seconds.

GPI 2
Name: A1 Break
Default Input: America One
Icon: [Empty]
 Add black while waiting for Stop: 07:00 [mm:ss]
String Delay
Start: 509* 6.75 [s]
Stop: 0 [s]
Pause: [Empty]
Next: [Empty]

Select the A1 ID break and enter 928* in the empty Start field ... along with the Delay offset (6.75 seconds).

GPI 3
Name: A1 ID
Default Input: America One
Icon: Satellite
 Add black while waiting for Stop: 07:00 [mm:ss]
String Delay
Start: 928* 6.75 [s]
Stop: 0 [s]
Pause: [Empty]
Next: [Empty]

Using the Second GPI List option

You can combine two GPI instructions into a single break setup by using the Second GPI List option. Using America One as an example, you would enable the Second GPI List checkbox. When you do, you'll notice that what used to be labeled Pause and Next (under Start and Stop) now change to Start 2 and Stop 2.

Enter 928* in the Start2 field ... and use the folder browse button to locate the playlist you wish to use for the Second GPI list. The Delay for Start2 is the same as you configured in Start.

NOTE: Although satellite program providers usually send both a Start and Stop command, since MASTERPLAY is a file-based system, it is simpler to use only the Start tone, then play all the files in the break ... and automatically switch back to the provider. The next Break is then cued for playback.

String Delay
Start: 509* 6.75 [s]
Stop: 0 [s]
Start2: 928*
Stop2: [Empty]
 Second GPI List: D:\StationID.ir
Set defaults

ADDING THE GPI INSTRUCTION

Now that your breaks are set up, you can create simple shortcuts for dragging and dropping them into the Playlist.

In this example we have selected a 2:00am half hour slot. We first selected and dragged into the playlist the **A1 Break** instruction from the list ... then added two :30 spots. We then dragged the same instruction icon into the playlist after the first two spots. We then added two more :30 spots. Finally, we dragged in the **A1 ID** instruction ... and added an ID/promo afterwards. Notice that the Break number at the right of the instruction line automatically increments as you add more instructions (e.g. Break 1, Break 2, Break 3)

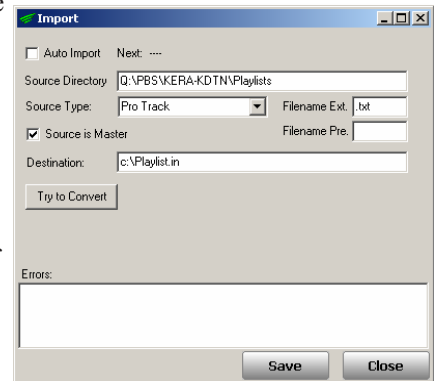


This process is a simple and intuitive way to build a schedule using GPI instructions with attributes specific to each particular program provider. You can have instructions for as many providers as you wish, and drop them into the list as appropriate.

IMPORTING SCHEDULES

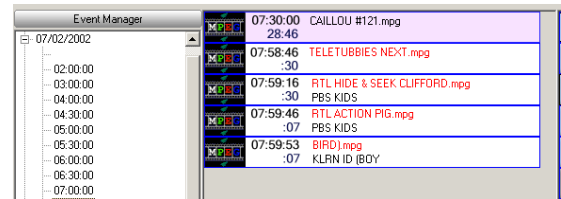
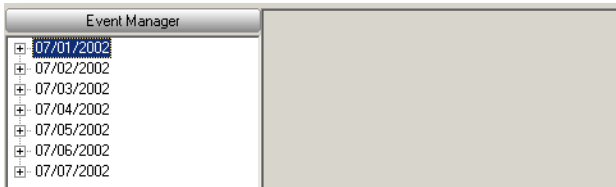
An available feature of MASTERPLAY supports the import of text files generated from commercial traffic systems. This requires a parser to be written on a customer-specific basis. After the schedule is imported, you can use all the scheduling functionality previously described to add, delete or modify the scheduled events.

Here is an example of a text file exported from **ProTrack**, the comprehensive **PBS** traffic and management software from **Myers Information Systems**:



Here is what it looks like after being imported to the Playlist (from a week of imported logs):

13	LABEL	7:28:31			
14	PLAY	7:28:31	0:00:15	IN0039	SPC-SPEAKING WITH CONFIDENCE
15	PLAY	7:28:46	0:00:15	PR6998	CAILLOU UP NEXT
16	PLAY	7:29:01	0:00:30	IN0028	PBS KIDS/RTL HIDE & SEEK CLIFFORD
17	PLAY	7:29:31	0:00:20	IN0030	PBS KIDS/RTL ALPHABET RENTERING PLANT
18	PLAY	7:29:51	0:00:09	ID3063	KLRN ID (BOY/BIRD)
19	EOS	0:00:00	0:00:00		End of Segment

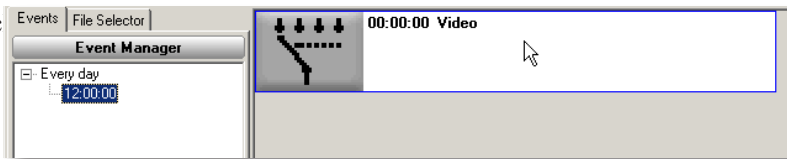


SCHEDULING LIVE EVENTS USING SWITCHER INSTRUCTIONS

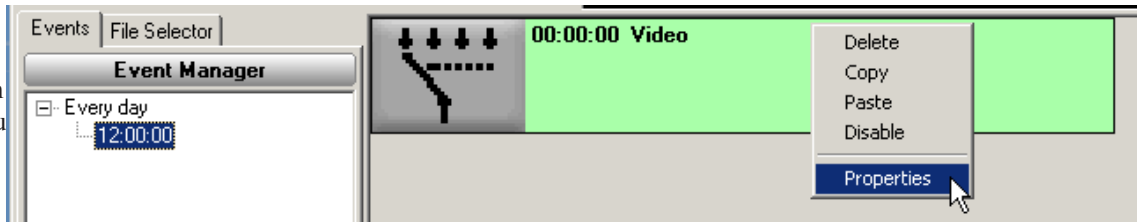
Click on the Video switch command ... and drag that instruction to the Event Window.



Then right-click

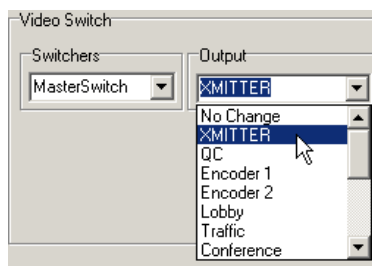


From output



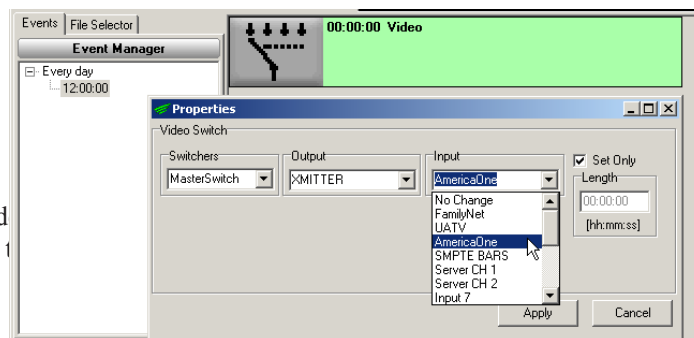
Select the

Under the **Input** drop-down, choose



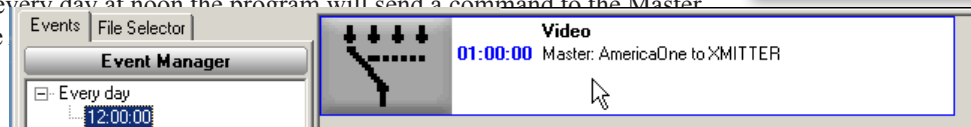
the input you wish to route.

Set Only is checked by default when you create an event. You can set the time.



the Playlist – or by a “hard cut” after a specified period of

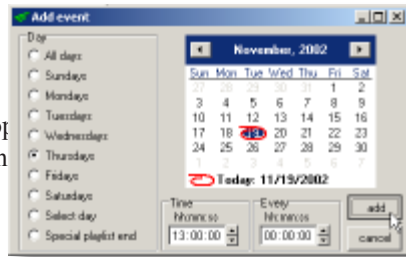
In both the Playlist Editor and the Playlist, the event is displayed like this. In this example, every day at noon the program will send a command to the Master switch to route



If you are running **MultiZone**, (no hardware decoder), the workstation is equipped with a WinTV card which you can use to display LIVE (or off-air) events in the Video Zone ... or full screen.

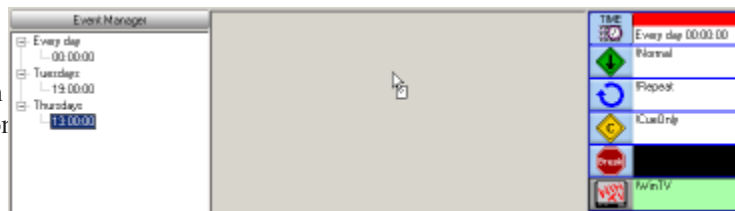
Example: You want to schedule a live city council meeting to air every Thursday at 1:00pm for two hours.

1) Click the **Event Manager** button to open the **Event Manager** window. Then click the **Thursdays** radio button ... and enter **13:00:00** in the **Time** field.



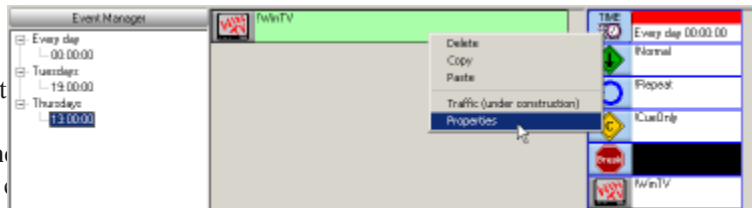
... and enter **13:00:00** in the **Time** field.

2) Click on **Thursdays** in the **Event Manager** window and drag it into the **playlist icon**.



... and

3) Right-click on the effect icon in the **effects window** ...

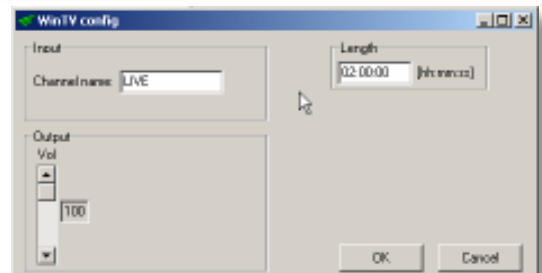


4) Enter the **Channel name** (in this case, **02:00:00**). Then click **OK**.

... and enter the **length** of the event (in this case, **02:00:00**).

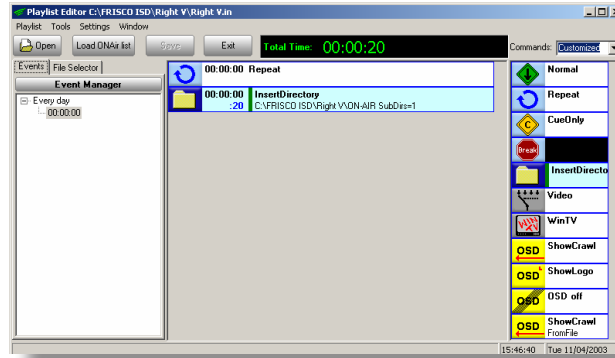
NOTE: In many cases, you will be routing video and audio from a switcher and audio mixer to the respective video/audio inputs of the WinTV card. You can connect a stereo audio 'mini-plug' from the card's output to the Line Input of the Mediappliance ... or use an internal jumper to go from the card's output to the CD input of the sound card.

If the Output volume (see the above example) is set to 0 ... then the Mediappliance will play files from the Audio Jukebox if it is enabled. Any value greater than 0 will cause the Audio Jukebox NOT to play.



USING PLAYLIST AUTOMATION INSTRUCTIONS

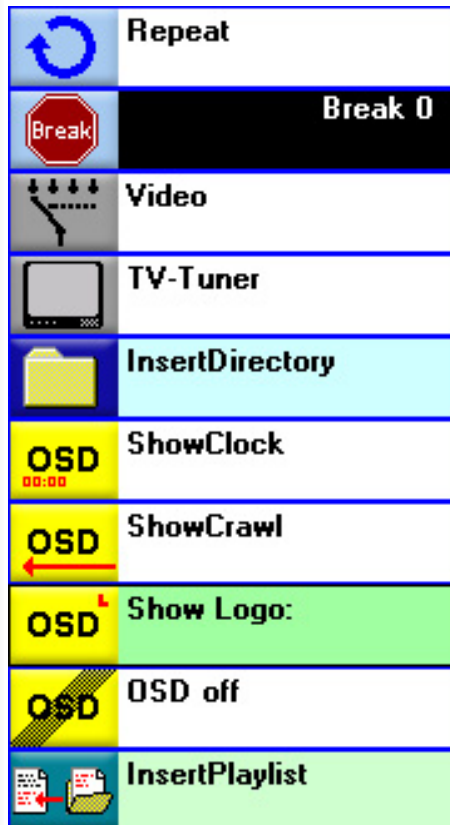
MASTERPLAY provides a number of drag-and-drop automation “instructions” to help you build your Playlists. The Playlist Editor is really a “palette” where you construct the sequence and control the characteristics (properties) of all your events.



In summary:

- 1) Use the **Event Manager** to specify days, dates and times in the Playlist (**WHEN**)
- 2) Drag-and-drop files, folders and other Playlists into the current Playlist (**WHAT**)
- 3) Drag-and-drop instructions that affect the files that follow each specific instruction in the Playlist (**HOW**)

PARTIAL LIST OF PLAYLIST AUTOMATION INSTRUCTIONS



Repeat – Play in a ‘loop’ unless and until another instruction is encountered

Break – Identifies the following files as a ‘Pod’ for commercial insertion. Segment name and approximate time are supported.

Video – Sets up crosspoints between a Source and Destination

TV Tuner – Supports scheduling of LIVE events depending on hardware.

InsertDirectory – Drag-and-drop a directory containing any mix of video and graphic files into the Playlist. You can also Insert a Directory in another Directory (folder).

ShowClock – Activates the On Screen Display and displays a clock which can be configured to show the current time, a count down, a count up, or a timer to the next event. Color, size, placement, background color and transparency are set in the Properties window as well.

ShowCrawl – Activates the On Screen Display and displays the text you enter into the data field in the crawl Properties entry window. Properties can all be adjusted as with the clock.

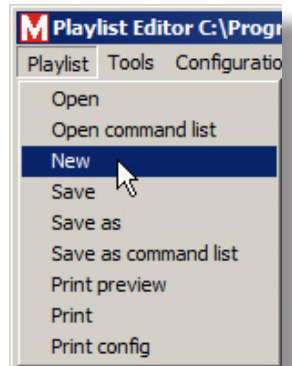
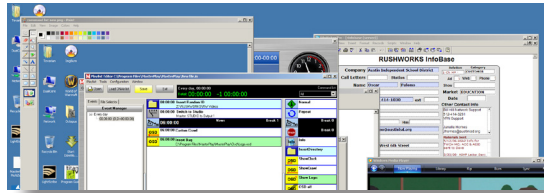
ShowLogo – Opens a Properties window that lets you browse to a specific logo ... and specify the size, position, transparency and duration of the event.

OSD off – cancels any previous OSD instruction

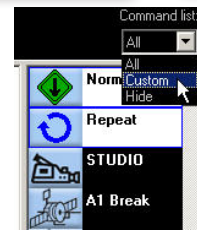
InsertPlaylist – Drag-and-drop any existing Playlists into the current Playlist (sub-Playlists)

CUSTOMIZING THE INSTRUCTION LIST

Since it's likely you won't use many of the instruction icons in the full list, you can create a customized instruction list with the items you use most, plus create custom instructions to use over and over. Go to **Playlist** and select **New ...** and select **Empty**. This will create a completely empty playlist with an every day event. Simply select and drag the instructions from the complete list on the right to the Customized Instruction list in the middle. Place them in the order you wish to see them. Double click and edit any you wish to customize then click **Playlist** and select **Save as Command List** to store your custom list. It must be saved as "CustomizedInstructionList.in" in the "CommandList" folder in order to work properly. Once that is done, use Command list drop down in the upper right to choose which command list to work with.



You can view All or Custom Instructions by using this drop-down menu at the upper right of the Playlist Editor.



*** ENCODING MPEG FILES ***

MASTERPLAY is a file-based automation system. Without videotape machines in the equation, you'll realize an enormous increase in productivity, reliability, and simplicity of operation. Your on-air video content will generally come from three sources:

- 1) Satellite delivered programming
- 2) Existing material on tape that must be encoded as MPEG-2 files
- 3) Internal promos, IDs and spots created using a non-linear editing platform



There are several hardware MPEG-2 encoders available that do an excellent job at attractive price points. These are PCI cards that you can put into an available computer. Just be sure you have enough storage capacity to handle the relatively large files created by the encode process. At 8Mb/sec, you'll consume about 3.6GB per hour of video/audio.

Masterplay provides integrated solutions that combine custom scheduling and encoding interfaces in a dedicated encoding workstation. The encoder options support a range of input formats: composite, S-Video, component, SDI and 1394 (FireWire). Some of these solutions allow you to create TWO files simultaneously ... such as MPEG-2 and MPEG-4 ... or MPEG-2 and Windows Media. They can also do real-time video streaming while encoding. Other options include logging and "batch capturing" with VCR control.

Many non-linear editing systems support MPEG-2 software encoding, so the resulting MPEG files can be transferred directly to the automation system over a network or via CD or DVD. A typical broadcast stream size is about one Megabyte per second. A :30 spot is approximately 30 MB ... so you can put about 150 spots on a single 4.7GB DVD media.

Remember: you can run the **Playlist Editor.exe** on any computer. The Segment Editor is one of the powerful and useful utilities in the Playlist Editor, so you can verify and/or modify file timings on any computer or computers you authorize.

Finally ... if you have imported a schedule from a traffic system and the spot title is **RED** in the Playlist Editor and/or the Playlist ... then that spot is NOT on the server. This can also be caused by **moving** or **renaming** a file AFTER it has been scheduled. In such a situation, you will only see **BLACK** when the file is scheduled to play.

WORKING WITH A WEEKLY SCHEDULE

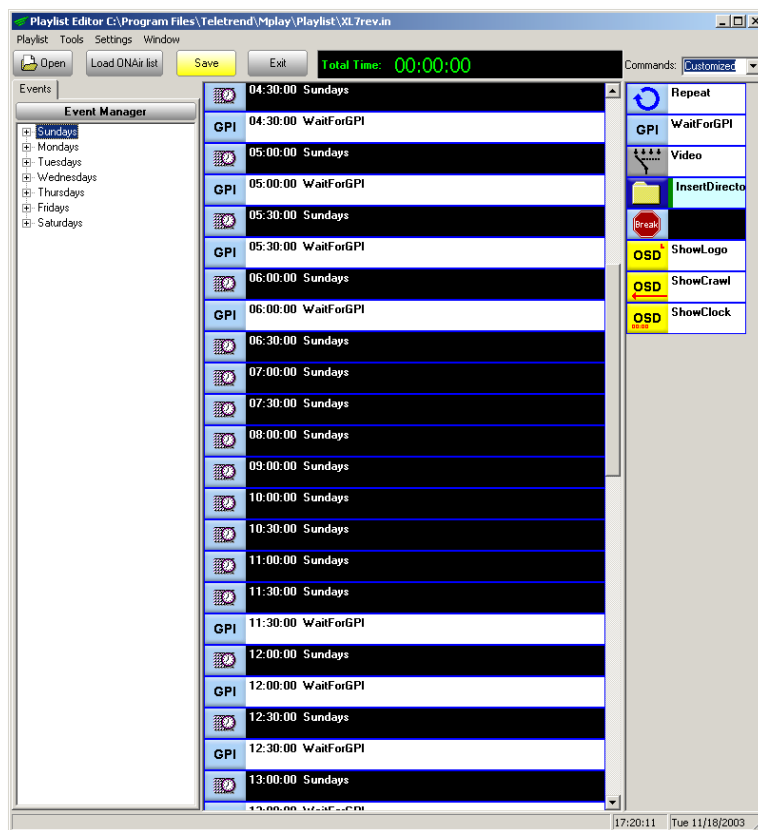
Now that you've been through the operating methodology of MASTERPLAY, let's have a look at a sample schedule created using the "Weekly Schedule" template.

This is a fairly typical programming schedule for a station that uses a satellite program provider for a significant portion of their broadcasting day ... but also have blocks of time where they program their own content and schedule time-of-day events.

The satellite program provider offers two minutes (2:00) of local break time every half hour ... plus one five second (:05) local station ID breakaway near the top and bottom of every hour. These local breaks are triggered by a device that converts network-delivered DTMF tones (coming in to the IRD) into GPI contact closures that are connected to the serial or parallel port of the Mediaplance.

NOTE: If you are using a commercial traffic and billing system, the weekly schedules are created automatically by the parser supplied with your Automation system. You can, however, use any of the techniques discussed to add, delete, or modify the list after it's been imported.

THE PLAYLIST TREE

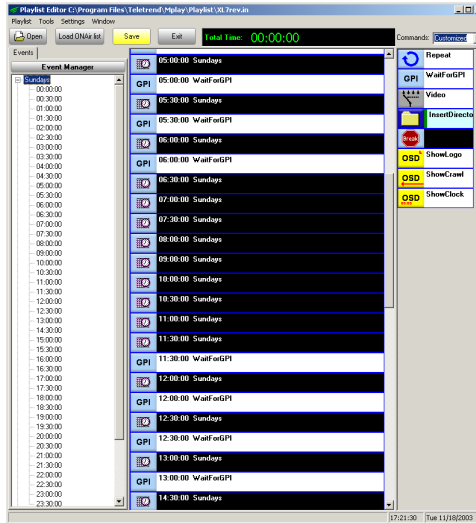


Day View – no events

Here is an example of a Weekly Schedule where most of the daily content is from a satellite program provider. They offer the station a two minute break during each half hour ... with a local ID within thirty seconds of the top of each hour.

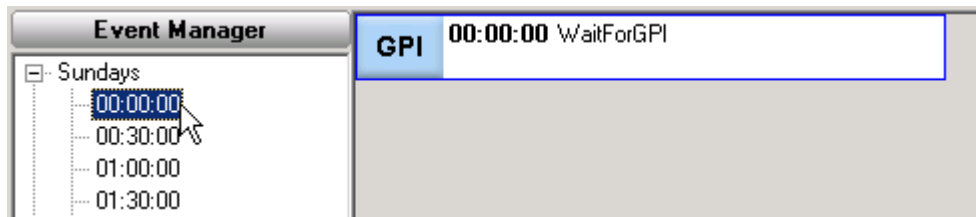
When you open the Playlist Editor, you see that **Sundays** is highlighted ... and the program 'slots' for the entire day are displayed in the Schedule Window. The red break lines indicate the slot schedule times. In this example you can see that between 6:30am and 11:30am there are slots for local programming, because there are no **WaitForGPI** instructions associated with these slots. Slots with that instruction indicate that during those hours the system is waiting for a GPI trigger to switch the router to the Mediaplance server, play a two minute break, and then switch back to the satellite feed.

When you click the + sign to the left of **Sundays**, you will expand the tree to provide another view of all the scheduled program slots.

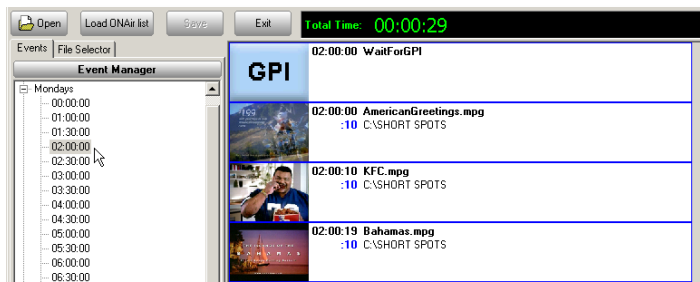


Day View – expanded slot times

HELPFUL HINT: You can use the arrow keys on your keyboard to navigate quickly and efficiently through the tree structure. In general, the logic follows the Windows convention: the **up and down arrow keys** move you through the currently displayed branch level. To expand or contract the level (+ and -) use the **right and left arrow keys**.



When you click on (or arrow to) each slot, the content for that time period -- in this case, Sunday at midnight to 12:30am -- is displayed in the Schedule Window. You can see that there are no files scheduled to play if the GPI contact closure is received. In such a case, black would be played from the server.



This example shows a slot after three files have been dragged and dropped into the playlist. When the GPI contact closure is received ... Mondays -- any time between 2:00:00 and 2:30:00 ... MASTERPLAY will switch the router and play the files ... then switch back to the primary input – which in this case would be the satellite feed from the IRD.

The **Total Time** indicator automatically calculates the total duration of the files in the slot, actually measuring the length of each MPEG file dropped into the list.

Satellite program providers generally send a set of tones for each break: **Break Start** and **Break Stop**. The timing of these tones determines the duration of the local break. In this example, the three: 10 spots would play ... then you would see 1:30 of black ... because the **Break Stop** GPI would be sent after the total allotted break time of 2:00.

Inversely, if the content of this break was 2:03 (two minutes and three seconds) ... then the switcher would rejoin the satellite feed three seconds before the end of the last file. So it is up to you to accurately manage the lengths of your breaks if you want to maximize the ‘seamless’ transitions to and from your local breaks.

GPI CONFIGURATION

Proper setup of your GPI instructions makes scheduling and operations very simple. Please refer to Pages 20-21 for a comprehensive explanation of how to create custom GPI templates that you can drag and drop into the Playlist Editor.

TAPE CONTROL

With this **optional** feature you can control multiple videotape machines using communications from additional serial ports we install on your selected Mediappliace.

If you are controlling one router and one VCR, you will not need additional serial ports. With the additional two serial ports, you'll generally use the four ports as follows:

COM1 = Router/Switcher control
COM2 = GPI Input (four independent triggers ... or two pairs)
COM3 = Tape Control
COM4 = Tape Control

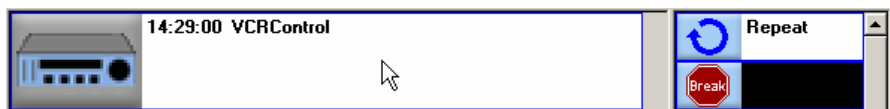
The server software communicates with virtually any VTR/VCR that uses RS-422 (Sony P2) or RS-232 remote control protocols. Examples of popular tape machines using RS-232 control protocol are the Sony UVW 1200 and 1400 Betacam player/recorders ... while the UVW 1600 and 1800 Betacam decks use RS-422 control protocol.

You can also use the parallel out port of the Mediappliace to generate PLAY and STOP contact closures for Series 5, 7, and 9 U-Matic VCRs.

Port	Function	
LPT1	Not Defined	Change
COM1	Kramer VS-5x5	Change
COM2	DT-232	Change
COM3	DVC/Beta VCR	Change
COM4	DVC/Beta VCR	Change
TCP-IP	Not Defined	Change

Scheduling a Tape Playback

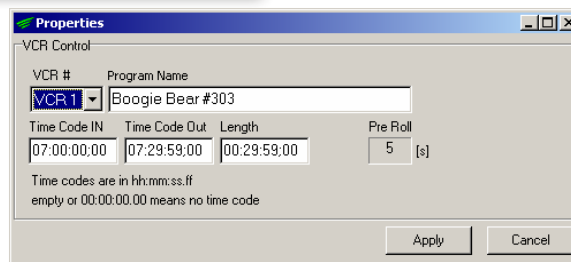
In the list of customized instructions on the right side of the Playlist Editor, you'll see the **VCRControl** icon ... which you can drag into a Playlist as either a "looping" event or time-of-day event.



After you drag in the VCR icon into the list, **double-click** the placeholder.

This dialog appears:

- Select the **VTR#** from the drop-down menu.
- Enter the **Program Name** ... including program number, episode, etc. as appropriate.
- Enter the **Time Code IN** and **EITHER** the **Time Code Out** **OR** the **Length** of the program/segment (each will automatically update the other field). The PreRoll is determined by the value you enter in the **Configuration – Options – VCR** field values, and cannot be changed on this control.



Note: If you leave the Time Code Start field **empty** ... **OR** if the time is **00:00:00:00**, then the system will NOT attempt to CUE the tape. It will simply issue a **PLAY** command to the machine, using the pre-roll value to "back-time" the **PLAY** command relative to the router switch command.

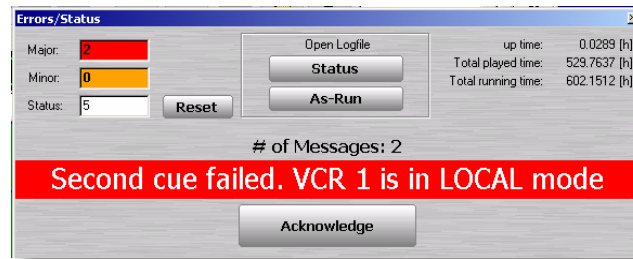
Click the **Apply** button. The information you've entered appears in the display metadata of the VCR event.



If your tape has **NO** time Time Code, then you'll need to manually CUE the tape to the **Show Start MINUS pre-roll time**.

By default, MASTERPLAY issues the CUE command **one minute and 30 seconds (1:30)** before the **PLAY** command is sent. The tape will not play properly IF any of these conditions are in effect:

1. The machine is NOT in “**remote**”.
2. Time Code on the tape doesn't match the Time Code specified for the event.
3. There is no tape in the machine.



If any of these conditions exists, the Error/Status window will appear ... along with a bold indication of the problem encountered. Click **Acknowledge** to close the warning. That action will automatically be entered into the Status log. The program always issues a second CUE command **45 seconds (:45)** before the **PLAY** command is sent.

Note: If you do not push the **Acknowledge** button, errors will accumulate in the Error log. At any time you can see how many error messages there are by the indicator above the **Acknowledge** button.

The tape machine will be given a **STOP** command:

1. At the specified Time Code End
2. If a scheduled “Hard Time” occurs earlier than the Time Code End
3. At the next scheduled “Hard Time” (if there is **NO** Time Code on the tape)

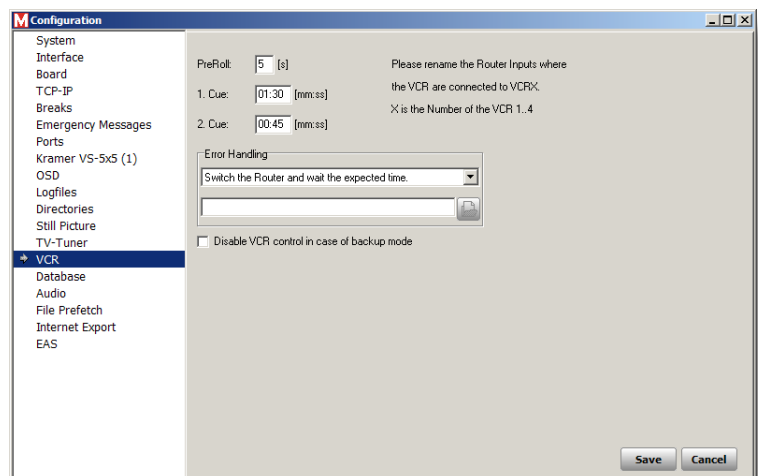
Each time you click the **Acknowledge** button you will see the preceding message. You can open the **Status** logfile to view all the errors ... or click the **As-Run** button to see what files have played. Click the **close box (X)** to remove the display.

Changing Default Settings

If your system is configured with the **Tape Control** option, **VCR** will appear on the **Configuration - Options** list.

Here you can change the default settings for the following:

1. **Pre-roll**
2. **CUE #1 (default 01:30)**
3. **CUE #2 (default 00:45)**



VCR Error Handling

The Error Handling mode determines what happens ON-AIR if there is an error condition with the tape playback, as explained earlier (no tape, VCR in LOCAL mode, etc.)

The options in the Error Handling drop-down are:

Switch the Router and wait the expected time.

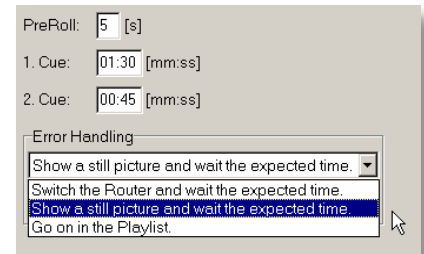
The router will automatically select the crosspoint you've set up as the "Default Input".

Show a still picture and wait the expected time.

You can set a path to the graphic file you wish to display until the next scheduled event occurs.

Go on in the Playlist.

This selection results in the program automatically advancing to the Next Event in the Playlist ... regardless of scheduled time.



We want your experience with MASTERPLAY Automation to be an excellent one. We are constantly adding and/or modifying features to better support your operating requirements. Please don't hesitate to contact us by phone or e-mail with any observations, suggestions, or operational difficulties.

It is possible that this release of the User Guide does not reflect some of the changes and/or upgrades to the software. Contact technical support at the numbers and addresses below for assistance at any level.

For **technical support** regarding **MASTERPLAY Automation**, please contact:



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support@masterplay.tv

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