

Grand Haven Musical Fountain Animated Choreographer

Version 3.81

Dedication

The Grand Haven Musical Fountain Animated Choreographer would not exist if it were not for the many men and women of the Grand Haven community who have contributed tens of thousands of volunteer hours working on the Musical Fountain since its early days in the 1960's. To all those who have come before us, and to all those who will follow, this software is dedicated in the hope that it inspires more people to lend their talents to keeping this project alive for many decades to come.

To successfully use this software, your computer should meet these requirements:

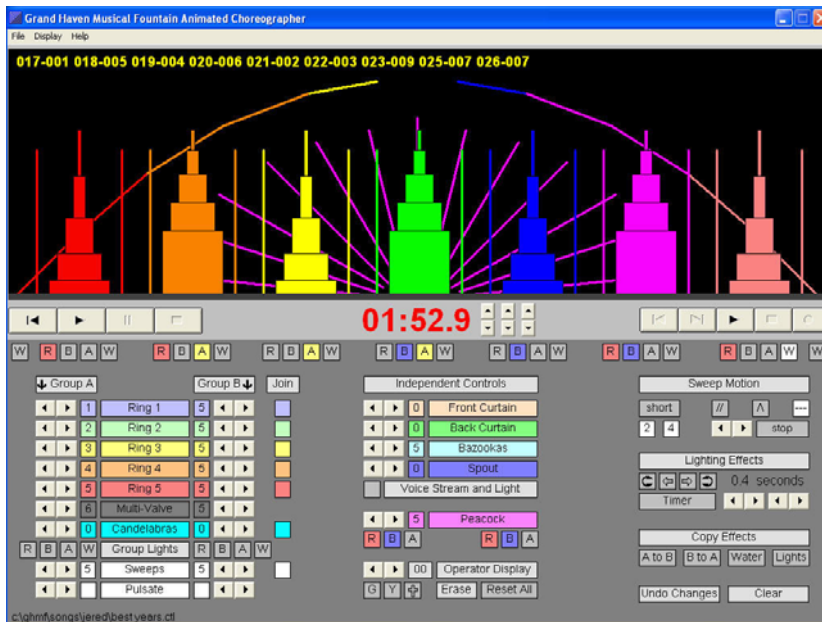
System Requirements

Operating System	Windows
CPU Speed	200 MHz Pentium® II or faster
Hard Drive Space	200 MB (15-200MB for music, 10MB for program)
Memory	32MB (64MB or higher recommended)
CD-ROM	4X or better
Input Devices	Keyboard and mouse
Other	An Internet connection is required for technical support and updates.

To achieve optimal animation synchronization on slower systems, it is highly recommended that all other programs be closed when using this software.

For assistance with this software, please send email to support@ghmfsoftware.com.

The Interface



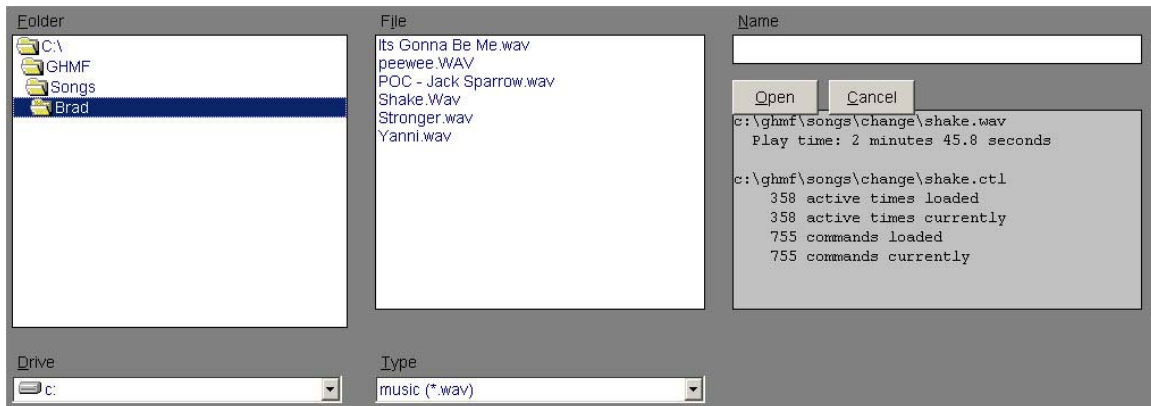
The Grand Haven Musical Fountain Animated Choreographer is a real-time programming system. Simply point, click, and view. With these simple skills and a general familiarity with the Musical Fountain, you can create spectacular shows.

There are some limitations of programming system to consider also.

First, water does not travel instantly. Whereas the animator shows height changes instantly, you must allow time for the Musical Fountain's water to reach the desired height. The larger the ring, the more time it takes to reach a height. No ring should take longer than 3 seconds to achieve full height.

Second, colors used for animation are intended only as visual cues for determining lighting combinations. Lighting does not mix as shown in the program. To view the lighting chart, select **Legend** from the **Display** menu.

Opening A Show



1. From the File menu, select Open.
2. Select the folder where your show is stored.
3. Select the show from the file box. Shows can be selected by MP3, WAV CTL file.
4. Click the Open button.

When you load the software, the last edited show is reloaded.

Please note that both the music files (MP3 or WAV) and the control file (CTL) must be in the saved in same directory. If you load a music file that does not have a corresponding CTL file, a new control file will be created. When you load a control file that does have a corresponding music file, an internal timer is used to animate the commands.

Whenever a show is opened, a backup copy of the control file is made. Up to five generations of the control file are saved.

Playback Controls

Once a show is opened, you can use the playback controls to control your choreographical sequences. Displayed on the screen are three sets of playback controls: playback controls, timer controls, and time-stamper controls.

Playback Controls



The controls allow you to play the music just as you would on any playback device.

Timer Controls



Current Playback Time Min Sec Tenths

The timer controls have two modes. When displayed in blue, the time moves incrementally. When displayed in red, the timer controls jump to the next time or previous time that contains choreographical commands. To switch between these two modes, click the playback time with the left mouse button.

The playback time can be moved forward or backward in single increments using the arrows located next to the displayed time. To move in larger increments, hold down the following keys when clicking the arrows:

Shift	Moves in 2X steps
Ctrl	Moves in 5X steps
Alt	Moves in 10X steps

You must stop or pause playback before you can move to a new time. Once you have selected the new time, click on play again to resume the music and animation from the new time.

Time Stamper



The Time Stamper helps you program more efficiently. While the music is playing, click the Record button to mark a times where you want to add choreography.

When the music is stopped, Previous, Next, Play, and Erase will be available. Click on the Next button to move to the next time stamp you set. Created the formations you desire, and then click it Next again to move to the next stamped time. Use Previous to move to a prior time stamp.

To refresh your memory of the music that was playing at the present time stamp, click the Play button for a 5-second sample. When you are finished with the time stamps, delete them by pressing the Erase button. This only erases the time stamps; all your choreographical changes remain.

Use the Script Editing buttons to remove choreographical mistakes. To avoid accidental use, you must confirm your choice.

Script Editing



<u>Button</u>	<u>Function</u>
Undo Changes	Removes any changes you have made at the current time.
Clear	Removes all commands from the current time.
Erase	To remove a formation or lighting command from the current time, click the Erase button and then either the name of the formation (ring 1, candelabras, bazookas, etc.) or the lighting. Please note that clicking a single modular light removes that module's command for all lights in the module, and clicking a water formation removes both Group A and Group B settings.

Group Modular Formation Controls



The Musical Fountain controls water and lighting devices in two groups, group A and group B. Group A encompassed all the odd numbered modules, and group B consists of the even numbered modules. There are seven modules, which are numbered from left to right.

Example: Group A B A B A B A
 Module 1 2 3 4 5 6 7

If you program a device for group A, all four modules display the same action. The same is true for the three group B' modules. Rings, sweeps, candelabras, and multi-valve settings work in groups.

To adjust heights, click on the arrows located next to the device you wish to modify. The value next to the arrow indicates the current height of the device. When you select a height for a device, the change is shown instantly on screen. In reality, water does not suddenly appear at a specified height, so keep this in mind while you create your show.

Device

Rings 1-5

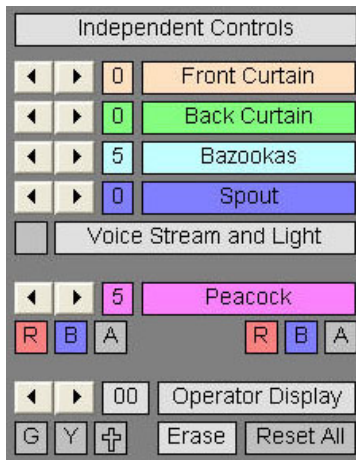
Description

Used to create the basic formations. Ring 1 is the largest circular formation, but it achieves the lowest maximum height of the rings. Rings 2, 3, 4, and 5 are progressively smaller rings contained concentrically within ring 1. In actuality, Ring 5 is a single stream of water. Its stream extends higher than all other rings.

Multi-Valve	This is a special function that places all the rings and the sweeps at the same height. Because each ring has its own maximum physical height, this creates a "wedding cake" effect. Height 6 sets ring 1 to height 1, ring 2 to height 2, ring 3 to height 3, etc., and sets the sweeps to height 5.
Candelabras	The candelabras are at the left and right side of each module. They shoot water towards the center of the module. At heights around 3 and above, the streams of water cross.
Group Lights	See Lighting Effects for more information.
Sweeps	Sets the height of the sweep water. The sweeps are at the left and right side of each module and can be set to move to the music. See Sweep Controls for more information.
Pulsate	This command is disabled until a future release of this software.
Join	Combines group A and group B water levels on the device, using approximately the average height. For example, if group A ring 1 is set to level 1 and group B ring 1 is set to level 4, joining the rings produces a water level of $(1+4) / 2$, or 2.5, on all ring 1 devices.

<u>Device</u>	<u>Max Height</u>	<u>Time To Reach Max</u>
Ring 1	5	3.0 Sec.
Ring 2	5	2.5 Sec.
Ring 3	5	2.0 Sec.
Ring 4	5	1.5 Sec.
Ring 5	5	1.0 Sec.
Multi-Valve	6	2.0 Sec.
Candelabras	5	2.0 Sec.
Sweeps	5	1.0 Sec.

Independent Formation Controls



The Independent Formation Controls handle devices that are not part of group A or group B. These devices, except the back curtain and the peacock, work alone.

The peacock device was not a part of the Musical Fountain's original design. When it was added, it had to be integrated with an existing device. Because the peacock is located at the back of the Musical Fountain, the back curtain was the logical choice. The peacock and back curtain are connected to a common water feed. A bypass valve selects the active device.

Due to the jointed ness of the peacock and the back curtain, these devices cannot be active at the same time; therefore, if you raise the water on one, water flow to the other stops. In switching between these two devices, you should stop the water flow to one device, wait 2 seconds, and then raise the water level on the other device.

<u>Device</u>	<u>Function</u>
Front Curtain	A row of water in the forefront across the length of the Musical Fountain. When set to maximum height, most rings and candelabras are obstructed.
Back Curtain	A row of water running the length of the Musical Fountain, situated behind all devices except the peacock.
Bazookas	Two arcing flows of water at each end of the Musical Fountain. At full height, the arcs nearly touch. Reaches full height very fast. Great for crescendos in music.
Spout	This is the center-most nozzle on the Musical Fountain. It can spray water up to 125 feet high.

Voice Stream	Turns on the "voice" water and orange light during speeches.
Peacock	A semi-circle spray of water at the back of the fountain. The back curtain must be off when the peacock is used.
RBA	These are independent lights for the peacock. There are two sets of lights for the peacock.
G Y †	Green and yellow lights along the back curtain and the cross or flag light atop Dewey Hill.
Reset All	Double-click to turn all lights off and set all water levels to zero. Use this at the end of songs or to drop many formations at once.

<u>Device</u>	<u>Max Height</u>	<u>Time To Reach Max</u>
Front Curtain	5	2.0 Sec.
Back Curtain	5	3.5 Sec.
Bazookas	5	1.5 Sec.
Spout	5	1.0 Sec.
Voice Stream	5	2.0 Sec.
Peacock	5	4.0 Sec.

Sweep Controls



The Sweep Controls are used active sweep movement. Sweeps start in a straight-up position and move from left to right at selectable speeds. There are two types of movements: synchronized (shown as //) and opposed (^\). Sweeps are located on the left and right of each Module. Although group A and group B sweeps can be set with different heights, movement of sweeps applies to all sweep devices.

Synchronized motion:

\\ \\ ⇨ || || ⇨ // //

Opposed motion:

\\ // ⇨ || || ⇨ // \\ ⇨ X

Button

Short / Long

2 4

//

^\

◀ ▶

Function

Sets the distance sweeps travel: long or short

Position indicators.

Sweep synchronization.

Sweep opposition.

Stop sweeping

Sweep speed: stopped, slow, medium, or fast

Lighting Controls

There are literally thousand of lighting combinations possible on the Musical Fountain. Module lighting can be controlled in groups or individuals and back curtain lights can be lit to enhance module lighting. There are white lights for the bazookas and for the cross and flag atop Dewey Hill.

Lights are selected by clicking the appropriate box on the Animated Choreographer interface. The boxes are labeled according to the color of the lights effected: R for red, B for blue, A for amber, W for white, G for green, and Y for yellow. The cross light is represented by a cross.

Although the interface represents color combinations according to paint-mixing rules (blue + amber = green, red + amber = orange, etc.), this is not how the colors will appear on the Musical Fountain. For example, with the blue and amber lights lit, both colors will appear on the water flow, not a solid green.

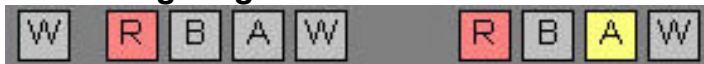
For a pastel effect, add white lighting with other lighting combinations.

Group Lighting



Group A lighting effects modules 1, 3, 5, and 7; group B lighting effects modules 2, 4, and 6. The interface controls for group lighting are located on the left side of the screen.

Module Lighting



Below each of the seven modules are individual lighting controls for the respective module. Each module can be lit with its own color scheme. A creative choreographer can achieve many special effects by using module lights. The fastest lights can be turned on and off is 2 tenth of a second. Although this is possible it is not recommended going below ½ second.

It is important to note that, if a group lighting command is added after module lighting has been set, the group lighting will override the module lighting.

Back Curtain Lighting



A row of alternative green and yellow lights exists along the back of the Musical Fountain. Not only do these lights effect the color of the back curtain, they also effect the seven modules in the forefront. (As a historical side note, the yellow lights originally where pink.) By combining the back curtain lights with group and module lights, additional color effects result.

Peacock Lighting



The peacock has two sets of red, blue, and amber lights. Only one set need be activated to light the peacock. Using both sets intensifies the color. The peacock lights also can be used to highlight bazooka streams.

Lighting Effects

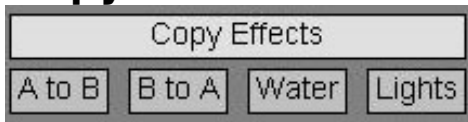


Lighting Effects consist of a rotation feature that is used to moving lighting between modules. There are two types of rotations: pushing and wrapping. Pushing moves lighting one module either to the left or to the right. The left-most or the right-most module will be unlit after pushing occurs. With wrapping, the lighting from the last module in the chain is moved to the first module, e.g., 1 ⇒ 2 ⇒ 3 ... 7 ⇒ 1.

If the timer is activated, rotation continues at the set interval until either rotation is stopped, a group A or group B lighting command is issued, or a reset is sent. Although the timer will allows a time value as low as 0.4 seconds, it can take up to one-half second for lighting changes to occur. One second or longer is recommended for rotations.

<u>Button</u>	<u>Function</u>
↻	Rotate light to the left with wrapping.
⇐	Push lights to the left one step.
⇒	Push lights to the right one step.
↻	Rotate light to the right with wrapping.
Timer	Activates the timer and starts rotations (must have direction set)
◀ ▶	Set timer increments. First set is for seconds, second is for tents.

Copy Effects



The Copy Effects buttons are used to duplicate formations and lighting from one group to another. For example, if ring 4 and ring 5 on group A are raised and you want to have the same formation on group B, clicking the A to B button and the Water button will do this. Lighting can be copied in the same way.

Copying can occur from group A to group B or from group B to group A. Selecting A to B and B to A at the same time causes a "flip-flop" effect. Repeating this dual flip-flop will produce a "bouncing" effect.

<u>Button</u>	<u>Description</u>
A to B	Copy formations from group A to group B. Water, lights, or both must be selected.
B to A	Copy formations from group B to group A. Water, lights, or both must be selected.
Water	Selects water formations.
Lights	Selects lighting.

Grand Haven Musical Fountain Animated Chorographer

Basic Animation

1. Place any MP3 file in the C:\GHMF directory
2. Start the program then select open from the file menu
3. Select your song and click the open button
4. At time 00:00:00 create the following formation:
 - a. Set Ring 1 Group A to height 3 by clicking the right arrow next to the label 3 times
 - b. Set Ring 2 Group A to height 4
 - c. Set Candelabras Group B to height 4
 - d. Set Red Lights on Group A
 - e. Set Blue Light on Group B
5. Click the play button on the Playback control
6. Once the music starts to play click the record button on the Time Stamp Control at five different times of your choice (this is just for practice don't worry about being in time with the music)
7. Once you have five time stamps click stop on the Playback Control
8. The time will instantly move the first time you marked
9. Now make the following changes:
 - a. Set Ring 5 Group B to height 5
 - b. Set Sweeps Group A to height 5
 - c. Set Ring 1 Group A to height 0
 - d. Set Ring 2 Group A to height 0
10. Click the forward button on the time stamp control to move to the next time you marked (Did you notice the displayed time updated?)
11. To here a sample of the music at this time marker click the play button on the time stamp control
12. Once again make the following changes:
 - a. Under the Sweep Motion section click on "short". It should now display the word "long". This sets how far the sweeps will go.
 - b. Next click on "^". This will make the sweeps cross over each other.
 - c. Now set the speed of the sweeps by clicking the right arrow next to the word "stop"
13. Click the forward button again to move to the next time marker
14. Make the following formation changes:
 - a. Set Bazookas to height 5
 - b. Set Ring 4 Group A to height 5
 - c. Under the Playback and Time Stamp controls are seven sets of small boxes labeled R B A W. On the first set click on the R to turn off the red light then click the A to turn on the amber light.
 - d. Now do the same thing on the seventh module. The 1st and 7th modules should now be Amber and the rest of the light should be the same.

15. Once again click the forward button
16. Make the following changes:
 - a. Set Ring 5 on Group B to height 0
 - b. Set Candelabras on Group B to height 0
 - c. Set Sweeps on Group A to height 0
 - d. Set Ring 2 on Group B to height 2
 - e. Set the 2nd module to Red, 3rd to Red and Blue, 4th to Blue, 5th to Red and Blue, and 6th to Red
 - f. Set the Peacock to height 5
 - g. Under the Peacock controls click the both A boxes. The Peacock has its own lighting.
17. Now move to the last time marker by once again clicking the forward button
18. Make the following changes
 - a. Under Copy Effects click on the "A to B", "B to A" and "Water". When we move to the next time all the water formations Group A will move to B and everything from Group B will move to Group A.
19. Now click the stop button on the Time Stamp Control and answer yes. This will remove all the time stamps from the queue.
20. Now that we have created a few seconds of choreography let take a look at. First click the rewind button on the Playback Control.
21. To view the animations click the play button on the Playback Control.
22. After your animation is done click stop then rewind.
23. Now lets replay the same animation but this time we are going to show the codes that are being sent to the Fountain at the same time. To do this select "AB Codes" from the Display menu. Then press play.
24. Across the top you have a series of numbers. These numbers are the codes that get sent to the Fountain's computer.

Moving Around the Timeline

1. Next we are going to advance our time manually. To do this you will use the arrows next to the displayed time. Using the middle set of arrows move the current time ahead by two seconds.
2. Make the following changes:
 - a. Turn off the light on the 3rd, 4th, and 5th modules. They should now be gray
 - b. Below the Operator Display are two boxes labeled G and Y (Green, Yellow). Click the G box. Did you notice the modules you just turned off are now green and there is a green square in the upper right hand corner? This is because you just turned on the back curtain lights. This is the only way to get green on the fountain. Also be aware that the back curtain lights go the entire length of the Fountain and are not modular. These lights can be very useful for blending color.
3. Advance another two seconds.
4. Make the following changes:
 - a. Set the Bazookas to height 0

- b. Set Multi-Valve on Group B to 6 (there really is a 6 for this one)
5. Now lets go back to a previous time and make some changes. Rather then changing the time manually you can use the time skip feature. To do this, click on the displayed time. Notice the numbers are now in red.
6. Now click on any of the down arrows.
7. The time now skips to the last time you made changes. Click it one more time.
8. Make the following changes:
 - a. Set Ring 2 on Group A to height 0
9. Now click any of the up arrows. The animation is instantly updated to reflect the changes.
10. Click the displayed time again. The numbers will turn back to blue and you can now once again move forward or backwards in any increment.
11. Move forward three seconds.
12. Make the following changes:
 - a. Set the Peacock height to 0
 - b. Turn off the peacock light
 - c. Set Ring 1 on Group A to height 4
 - d. Set the Front Curtain to height 2. The animator does not display module colors on the front and back curtains.
13. Oops this chorography is at the wrong time. We need to move it back 1 second. To do this hold down the Shift key and click on the time.
14. Adjust the time back one second using the arrows then click the Set button.
15. All of the chorography from that point forward has been shifted back 1 second.
16. Now rewind and play the animation again.

Clear the Canvas (reset)

1. Move forward two seconds from your last chorography change.
2. Make the following changes:
 - a. Set Multi-Valve on Group A to height 6
 - b. Set the Bazookas to height 5
 - c. Set the Peacock to height 5
3. Move ahead 2 seconds. At this time marker I want to just display the Spout at full height. Rather then trying to turn off all of the light and water individually you can use the "Reset All". Click the reset all box now and answer yes.
4. Everything is turned off at once. When you send a reset all it will always be the first command sent.
5. Now set the Spout to height 5 and turn on the blue light for module 4
6. Once again rewind and watch the animation.

Fixing Mistakes

1. Move forward 1 second.

2. Make the following changes:
 - a. Set Ring 5 on Group A to height 5
 - b. Set Module 1 and 7 to Amber, 3 and 5 to Red and Blue.
3. Move forward 1 second
4. Make the following changes:
 - a. Set Candelabras on Group A to height 4
 - b. Set Ring 4 on Group B to height 3
5. Click the “Undo Changes” box and answer yes.
6. Make the following changes:
 - a. Set Candelabras on Group B to height 3
 - b. Set Ring 4 on Group A to height 4
7. Move forward 1 second
8. Now move back one second
9. Click the “Erase” box then the Candelabras label. Notice just the candelabras are removed.
10. If you wish to remove all the choreography at that time marker click the “Clear” box and answer yes.
11. Rewind and view the animation again.

Congratulations you now have a basic understand of how the GHMF Animated Chorographer works. If you need any assistance with the software please post your questions on the Fountain Talk support forum located at www.ghmfsoftware.com/fountaintalk.