Carpe DMX II- Seize the Console
by Tony Hansen

History
In the last issue we discussed DMX; the control protocol used for many modern lighting systems. This time, we will discuss where the DMX comes from: the console.

The console is also known as the light board, and it is the operator interface to a lighting system.

First, a brief re-cap– DMX 512 (1990) is a digital data signal that is used to transmit up to 512 channels of information to various lights, dimmers and effect devices over one set of wires. Before DMX, most lighting systems would either run all of the dimming power right through the console itself, or large bundles of wire would run from the console to the remote dimmers carrying an analog signal. Lighting consoles were huge beasts that were permanently mounted into a control room. They were anything but portable, and not all that flexible. Even the early computer consoles were rather permanently affixed, and offered limited features in a relatively large package. Like most electronics, the consoles have become more portable and powerful through the years.

The vast majority of today's consoles either offer or make use of DMX to "talk" to the lights and dimmers in the system. Since DMX is the same to all, the difference is the console itself. A simple light board may have 12 control channels with a slider or "fader" to vary the output from zero to full. In this application, it is fairly simple to understand what the console is doing to the lights. A larger, more complicated console will do the same function with more channels, it may just handle the interface differently.

As early DMX consoles developed, they were primarily meant for dimmers and simple conventional lights; not today's fancy, intelligent lights. So the folks developing the early intelligent lights had to find a control platform for them. Some companies developed consoles specifically for their own lights, and you would have to have both in order to operate them.

The early Vari*Lite® lights used the Artisan® console for their control and required a specially trained operator. Other companies wanted to make use of the DMX consoles already in use. In order to do that, they used multiple channels from the console to control one light. If you can imagine a big light board that would run dozens of lights, this same board only held maybe a few intelligent lights, and required several faders for each.

The intelligent light will "map" these multiple faders into individual functions such as intensity, pan, tilt, color, etc.– but as far as the console is concerned, it is still just running several individual channels. What all this means is that intelligent lights are using the same data that comes out of the board for dimmers.

GUI
There were some great advances in consoles for conventional lights, but some of the biggest changes seemed to come with the intelligent lights. There are three basic types of consoles now, the conventional light board, the intelligent light board and the hybrid. There is no difference in the output, only in the user interface.

For those that can remember back a few years, DOS was the way to work on a PC. In those days you would have to type in a command at the command prompt to execute a program. Then Windows™ came along to make our life arguably better. The advantage was a GUI (or Graphical User Interface). The GUI would allow you to control programs through symbols or icons. This is similar to the difference between a manual light board and a fancy moving light controller. Finding out which light board is best for you depends on two factors: budget, and which one you like the "feel" of best.

Types of consoles
The most familiar console is likely going to be the manual light board or conventional console. These will usually consist of many individual faders for individual fixture control and may have some sort of memory to store looks or cues.

Cue storage is critical if you plan to put together a large production with multiple lighting looks. You can go through a show during rehearsal and record looks for playback later, without needing to set all of the individual faders. An alternative form of control is a two scene preset. This console will have double the faders, and allow you have one look on the first set of faders, while preparing a second look on the second set.

The next console will be the Intelligent or Moving light board. One of the early examples of this console would be the Whole Hog II™ by Flying Pig™ systems. This console replaced most of the faders with menus accessed by touch-screens and a mouse. The information was presented in a logical fashion to the moving light through "libraries" that assigned the functions of the light to names and menus. In this way you could select a light, and then choose the color, pattern, focus, etc. from named menus instead of having to put a specific fader to a specific level.

Some of today's newer consoles such as the Grand MA™ and SGM's new Regia 2048™ family take this a step further with off-line visualizers, built in UPS, multiple universes of DMX, effects engines and Ethernet. However, the fundamentals all stay the same.

The last console type would be the hybrid. A hybrid console will blend functionalities from the conventional and the moving light console into one desk. This will often mean a board with multiple faders for the conventional lights, and a control screen for the moving lights. They can usually be run together and even recorded into the same cues for playback. This console works well if you have both types of lights to work with, especially in a concert or live situation where things can change quickly. Some designers actually prefer to run two separate consoles, one for conventional and one for moving lights. The biggest advantage is that not all of your lights are on one console in the event of failure. It also allows some flexibility when working a live show.

There is one other type of control but it is not a console exactly. It is PC control or computer software. This is catching on quickly, especially in churches. There is usually a cost advantage to this system, and there can also be a learning advantage. Since many of these systems like ShowCad Artist™ are actually Windows™ based, they are easy to pick up on and operate, for anyone that has run Windows™ before. It is essentially a lighting program run from a computer, just like a word processor might be. A computer may also take up a little less space than a console. The disadvantage would be the lack of a console control surface, but many people have even set these up with touch-screens.

This is a rather brief overview of consoles. There is nothing more important than working with a console yourself and getting a feel for the system. A good sales team can help point you in the right direction and introduce you to the current technologies. Of course you can talk with other facilities about their experiences, as well. A great way to try new things is to rent equipment for a show. Just make sure that you and your team have plenty of time to learn and experiment so they can be comfortable with the board. My next column will be on actually putting a show together.

Until then, happy lighting and have a joyous spring!