2.6 Software Programming Information - *by Rob Halliday*

We are pleased to provide the latest update to our popular operating software. New in this release is the Dynamic shape function allowing users to quickly and easily program movement patterns.

Dynamic Shapes

One of the most exciting features introduced with the new version of the Strand operating system, GeniusPro/Lightpalette version 2.6, is Dynamic Shapes: the ability for the console to make automated lights move in complex patterns without you first having to write complex chases!

Using Dynamic Shapes for the first time requires a little learning curve: setting up and using the system is slightly different from using other parts of the console, since it is a type of behaviour that has not been available before.

Starting with an empty show, patch a moving light as you would normally:

[PATCH] [1] [@] [1] {@FIXTURE} [36][*]

to patch a Vari*Lite VL6 addressed as DMX1 to channel 1.

Dynamic Shapes are controlled using extra, 'virtual' attributes for each moving light. By default, these are not created when you patch a fixture so that older shows load into the console exactly as they did prior to version 2.6. To create the Shape attributes, go into the channel sub-menu in Patch, where you will find a new option:

[PATCH] {CHAN>} [1] {ADD SHAPE}

This will add the Shape attributes to channel 1; you can specify individual channels or ranges of channels in the usual way, but note that you are specifying a channel number here rather than a DMX address.

If you switch back to Live and select channel 1 then (provided you have set the Smart Channel Display setup option to Tracker or Tracker Preset) you will see that channel 1 has the attributes you'd expect for the moving light you patched, plus nine new attributes numbered .91 to .99: PProfile, TProfile, PSize, TSize, PSpeed, TSpeed, PPhase, TPhase, PTRotate. P in each case refers to Pan, T to Tilt.

If you now look under the Console's Profile display:

[MORE] {PROF DISP>}

you will find that the console now arrives with additional profiles as standard, many of these designed to be used as Dynamic Shapes. This is the part that feels different, at first: when you set attributes .91 PProfile and .92 TProfile, you are not setting them to a level: you are setting them to follow a profile. So:

[1.91] [+] [.92] [@] [96]

will make channel 1's pan and tilt follow a sine wave, giving instant movement based around the position the light started in. (If in Single-Digit entry mode, you will have to type [@][9.6]; if in Command Line entry mode, you will have to press [*] to complete the command; if you load an older show that writes over these profiles you can get them back by deleting your custom profile, using the Archive screen to re-load your custom profile to a different profile number if you want to keep it.)

However, you may not immediately see the light move: the shape's size will probably be set to 0 and its speed may be set to 50%, which means 'stopped' (51% to FL increases the speed in one direction, 49% to 0 in the other). By using the left- and right-hand keys above the trackball (or the attribute selection button on an external trackball on a 300-series console) you will be able to bring these attributes under the control of the rotary encoders and adjust them to set the size and speed of the movement. Of the other attributes, Phase allows you to adjust the point on the movement shape where the movement starts, and PTRotate allows you to rotate the shape.

As the light is moving, you will not normally see the Pan and Tilt values on the screen change: these continue to show the light's base position. To see what the light is actually doing, you can change the channel display mode by pressing
[SHIFT] [GROUP-DISPLAY] [GROUP-DISPLAY]
which will switch to the CONTROL display. Now the Pan and Tilt attributes will show what the light is actually doing (though if you hit RECORD, the base value for the position will still be recorded). Pressing
[SHIFT]+[GROUP-DISPLAY] again will return the display to normal.

Experimenting with different profiles on pan and tilt can produce lots of variations in movement, and you're not limited to the supplied shape profiles - any profile you create can be used. To help you get going, 2.6 provides combinations of profiles, phase, sizes and speeds to create some common shapes: these are held as new special groups numbered 992.1 to 992.8, each with a fairly self-explanatory name. So, typing
[1] [@] [GROUP] [992.1][*]
will make channel 1 move in a circle (-best seen with moving mirror lights; the behaviour of a moving head light will depend on the circle's size and origin). You might prefer to copy these groups to groups in the 1 to 750 range, so they behave as reference groups and you'd therefore see the light's Shape attributes saying 'Circle'. Alternatively, you can store your own combinations of profiles and sizes into groups: there is now a function filter called Shape to make storing these combinations easier:
[1] [UPDATE] [GROUP] [1] [@ATT] {Shape}

Dynamic Shapes not only make movement chases quicker to program than using conventional effects, they also make possible movement patterns that would be hard or impossible to achieve using conventional effects: for example, a light moving in a circle where the circle's size increases over time. To achieve this, you'd create a cue that set the light's Profile, Speed, Phase and Rotation (probably in a part cue with a zero second attribute time), but left its size at 0. Then in the next cue you'd slowly increase its size to a suitable maximum value over a slow time: the light would start moving in ever-increasing circles! Or vary the Rotate attributes over time across a range of lights to have them start moving in sync and slowly change to running out-of-sync with each other. Or put these attributes on submasters to be able to manually vary Dynamic Shapes.

The only other thing you might want to create is a way of quickly stopping Dynamic Shapes - for example, a group that set all of the Shape attributes to zero except PSpeed and TSpeed which would be set to 50%, and a Macro to set that group. That way, even when you get completely carried away with Dynamic Shapes, you can always bring the lights back to a sensible state.