



STRAND News

Console Programming Tips

By Rob Halliday

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Console programming tips revisited - The complete collection of Strand News program- ming tips by Rob Halliday

Welcome to the Collected Console Tips!

Over the last couple of years, Strand's Quarterly Newsletter has featured a console programming tip in every issue. These started partly as a response to people asking for advice, and partly as a response to the occasional comment from people (-usually people who hadn't actually used the products!) that Strand's consoles were somehow 'not proper moving light consoles'.

The proof is in the shows, though. Over the last nine years, this console has been my ally through countless productions of all types and sizes. The British tour of *Blood Brothers* was the first. A year later, *Martin Guerre* and *Jesus Christ Superstar* in the West End. In the time since then shows including *Les Misérables* around the world, *Oklahoma!* in London, New York and on tour around the USA, *Oliver!* in London, Australia and now an American tour. *Miss Saigon*, where one Strand 520i replaced the four control systems that had previously been necessary to control that show's complex lighting rig. Most of the shows in London and around the UK run on these consoles. This autumn Strand's consoles will be found controlling some of the biggest new shows in the West End, including *The Woman In White* and *Mary Poppins*. With many of these shows the consoles are not even just being moving light consoles: they are being lighting consoles, controlling entire rigs, combinations of large numbers of moving lights, conventional lights, colour scrollers, projectors, smoke and haze machines and much more besides. These consoles let programmers do what they need to do for this kind of show quickly, efficiently and reliably. They have extra tools useful when working as a lighting team - the off-line editor, handheld remotes, the dongles allowing laptops to be remote controls and video displays, multi-user capability. The software continues to improve, adding new features in response to user comments and the demands from new lighting technology. Most importantly, people trust them.

What is true is that the consoles don't necessarily score well in those short trade show demos. They are not flash-bang consoles. They won't patch your rig, create your effects, plot your show and pour you a drink with the press of a button. They're a bit like control system construction kits: you have to invest a little time, but you can make them work in a way that suits you. And once you've set them up you can move that set-up with you from show to show, thanks to the console's ability to load and merge parts of shows and to quickly modify information through ranges of cues, groups, effects and submasters.

The Console Tips were intended as a way of showing you how to make the best use of that tool: tricks and tips for setting things up and using commands in ways that people don't necessarily know they can be used. They're not a replacement for a manual: the manual (and console help file) will tell you the syntax of a command: the how but not the why. In any case, most people don't read manuals! The Console Tips are a 'real world' guide, led by tasks you might need to perform on a show. Make a channel a bit brighter through all the cues? You could do that one cue at a time, but a quicker way would be to use the powerful UPDATE command. Replace one light with another? Again, you could do it manually but why not use AUTOMOD?

These things, and more, are now gathered together here. I hope you find them useful. And if you have specific problems or questions, let us know and maybe a future Console Tips will give you the answer: email console.tips@strandlighting.com.

Rob Halliday.



Console Programming Tips - AutoMod September 02

AutoMod, or Automatic Modification, is a feature that has been available in Strand consoles from back in the time of the Galaxy range. Its basic aim is to deal with situations such as "My downstage centre warm cover light has blown. I can't replace it now, but I need light downstage centre for the rest of the show. The cool cover light will be better than nothing!" To achieve this on many consoles you'd have to go through the show manually re-plotting cues to use the cool light (let's say this is channel 2) instead of the warm light (channel 1, say). And you'd have to remember to change it back the next day after fixing the warm light!

With AutoMod on 300-, 400- and 500- series consoles, you tell the console to replace channel 1 with channel 2, then let it do the rest!

Go into the AutoMod display by pressing:

{MORE} {AUTOMOD} (these are soft keys)

Then type: **[2] {A-MOD FROM} [1] [*]**

The screen will show "2.1 = 1.1", which means that channel 2 will be replacing channel 1 when you turn AutoMod on.

Turn AutoMod on by pressing: **{A-MOD ON}**

Note: A "USING AUTOMOD" reminder will appear in the corner of the screen.

Now run some cues, and you will see that whenever channel 1 used to come on, channel 2 will now come on to the same level instead. Channel 2 will, of course, continue to do its own cues as well, and if it ends up trying to do two jobs in one cue, the higher level will take precedence. If channel 2's lamp is brighter or dimmer than 1's, use:

[2] {A-MOD FROM} [1] [@] [5] [*], or

[2] {A-MOD FROM} [1] [@] [+] [5] [*]

to scale channel 2's intensity - in this case, to make it always 50% dimmer or 50% brighter than channel 1.

Though AutoMod has historically provided 'on-the-fly' modification, it is now possible to apply AutoMod changes permanently (perhaps if it turned out that the show looked better with the cool light downstage!):

<UPDATE>{UPDATE A-MOD} <CUE>[1]<THRU>[10][*]

will apply AutoMod rule changes permanently to cues 1 through 10. In the example above, channel 2 would now have replaced channel 1 in cues 1 through 10. Alternatively:

tively:

[2]<UPDATE>{UPDATE A-MOD}<CUE>[1]<THRU>[10][*]

would have applied the rule to just channel 2, so channel 2 would now have copied channel 1's behaviour in cues 1 through 10, but channel 1 would have carried on doing whatever it was doing.

This is particularly useful when transferring moving light information such as colour and gobo reference groups from show to show. For example, if you had a Pirouette as channel 1, and you added nine more Pirouettes as channels 2 through 10, you would want them all to have the same group information, particularly for colour, so enter:

[2] <THRU> [10] {A-MOD FROM} [1] [*]

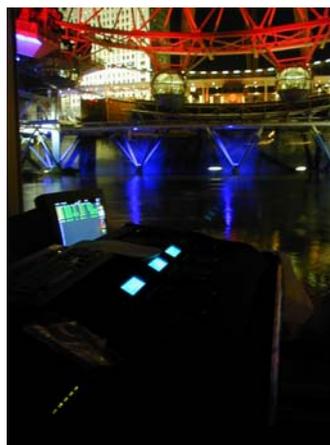
<UPDATE>{UPDATE A-MOD}<GROUP>[1] <THRU>[999][*]

to copy all information; or

[2]<THRU>[10]{A-MOD FROM}[1][@]<ATT>{COLOUR}[*]

<UPDATE>{UPDATE A-MOD}<GROUP>[1] <THRU>[999][*]

to copy just the colour information, and the job is done!



Programming at the London Eye for Nokia

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! (- keep in mind that if you have Dynamic Shapes running and run Cue 0 to fade the lights out before you go to dinner, the Shapes will still be running! Make sure you stop them so your lights get a dinner break, too!)



Update - March 03

Update Cue

Update is one of the most powerful, versatile - yet often misunderstood - features in the current family of Strand lighting consoles. It lets you update cues that already exist, allowing either channels that have been changed or channels that you specify to be stored into cues, rather than storing an entire state as the Record command does.

If you're just working through a show one cue at a time, and the cues don't overlap, and you have no submasters up, and you're not running any effects, then using record and using update are interchangeable. But consider the following scenarios:

- you're in a cue, but the houselights are up on a sub (because the cleaners are vacuuming the auditorium). You need to make changes to the cue but don't want to record the houselights into the cue - which means you can't use Record (though yes, in this instance you could use the REC-SUB key!)

- you're in a cue, you've brought up a bunch of channels for focusing. You want to add one of those channels to the cue without adding the others - which means you can't use Record.

- you're in cue 10. The lighting designer turns on a channel, but wants it to come on in cue 5 and then stay on. You could do this by going back to cue 5 and making the change, or by switching to preview, going back a to cue 5 then setting the channel again, but both are a bit long-winded.

- a long, slow cue is running. You add a channel and want to store it into the cue, but you can't use record because the cue hasn't finished running - record would store the partially completed state as the cue.

- you have a number of overlapping cues running. You want to add a channel to one of the cues, but you can't use record because you're not in the completed state of any of the cues.

Though there are many ways of achieving these things, Update Cue (obtained by typing [UPDATE] then [CUE], or holding down SHIFT and pressing the [CUE] key) is probably the quickest.

Update Cue can be used in two ways: with and without specifying channel numbers.

If you just type [UPDATE] [CUE] [x] [*], any channels that have been altered by the channel controller (and so are shown in red on the channel display, or in green on the channel display of a remote console) are stored into cue x - effectively those channel levels are merged with the existing cue. If you're in cue 10, and go

[UPDATE] [CUE] [10] [*]

this is almost the same as going [CUE] [10]

[RECORD] - except that channels held up on a submaster (those houselights!) wouldn't be added to the cue by the UPDATE command (since they're not red). But if cue 10 was still running and you went [UPDATE] [CUE] [10] [*]

the adjusted channels would be stored into cue 10 correctly, leaving the rest of the cue as it was, whereas

[CUE] [10] [RECORD] [RECORD]

would have re-recorded the cue as its partially completed state. And while in cue 10 you could have typed

[UPDATE] [CUE] [5] [*]

to store the adjusted channels into cue 5. You could also type

[UPDATE] [CUE] [5] [THRU] [10] [*]

to store the adjusted channels into all of the cues from 5 to 10.

Incidentally, if you're in a cue and just want to change that cue, you only need to type [UPDATE] [*], which will update into the currently selected cue in the same way that just going [RECORD] [RECORD] (or [RECORD] [*] [*] in command line mode) without specifying a cue number will record over the currently selected cue. In tracking or q-only mode, you can also use [UPDATE] [TRACK] or [UPDATE] [QONLY] as you would with a record command.

Note also that if you type [SHIFT]+[CLR] on an empty command line, any 'red' channels are cleared from being red. This means that they will not be stored by an UPDATE command, so you could bring some channels up for focusing, [SHIFT]+[CLR] them, then bring up some lights that you actually need to plot into a cue. UPDATE would then store the lights you wanted but not the lights that were just up for focusing.

Sometimes you'll bring up lots of lights, but only want to store the lights that were already in a cue into that cue at a new level. [UPDATE] {CHANSIN} - CHANSIN appears on the right-hand softkeys after you press UPDATE - will do this for you, only storing

modified channels into that cue if they were already in that cue. This can be particularly useful in tracking mode, since it will avoid you having lights running on through cues and into a blackout cue where you hadn't earlier set them to go off. UPDATE] {CHANSIN} [CUE] [1] [*]
[UPDATE] [CUE] [1] [QONLY] [*]
would let the channels that were already in the cue track on at their new level, but put any new channels into just cue 1.

The other option on these softkeys, ADDALL, stores channels into cues even if they weren't previously in that cue. This is the default behaviour for UPDATE CUE but, as we shall see in future editions of Strand News, not for UPDATE GROUP (and also not for cues in software versions prior to 2.4).

You can also make Update more specific: you can specify which channels you want it to store - a feature sometimes known as 'selective store' on other moving light consoles. So, for example,

[1] [+] [2] [UPDATE] [CUE] [1] [*]
will take channels 1 and 2 and store them at their current level into cue 1, regardless of any other channels that have been set, and regardless of whether or not channels 1 and 2 have actually been changed. Or
[1] [+] [2] [UPDATE] [CUE] [1] {ATTSONLY} [*]
will just store the attributes of channels 1 and 2 (if they have any) into cue 1, leaving the intensities set as they were in the cue. ATTSONLY appears on the centre softkeys on the 530 and 550; on 520s and 300s which don't have the centre LCD display press the [REC MODE] key to bring it up on the right-hand softkeys. You'll also find an INTS ONLY command there, which just stores intensities leaving attributes set as they are.

Or you can type

[1] [+] [2] [UPDATE] [CUE] [1] [@ATT] {position}
to access the function filters - after you press the [@ATT] key (called the [ATTRIB] key on 300 consoles), the function filters will appear on the right-hand softkeys to let you store selected combinations of attributes - in this case, those for position. We'll be looking at function filters more in a future issue of Strand News.

You can also use all of these commands on more than one cue at a time:

[1] [+] [2] [UPDATE] [CUE] [1] [THRU] [10] [*]
or any combination thereof. This is useful if you need to store a new colour through a sequence of cues:
[1] [+] [2] [UPDATE] [CUE] [1] [THRU] [10] [@ATT] {colour} [*]
will store the new colour through the ten cues, leaving intensities and other attributes changing as they were changing. If the console is set in tracking mode, the colour

change will continue to track on after the last cue specified unless you use QONLY to limit the range you mean to change:

[1] [+] [2] [UPDATE] [CUE] [1] [THRU] [10] [QONLY] [@ATT] {colour}[*]

These commands also work in the PREVIEW displays, allowing you to take the information from the cue you're previewing and store it into another cue or sequence of cues elsewhere in the show.



Finally, you can make modifications to channels through ranges of cues. For example:

[1] [UPDATE] [CUE] [1] [THRU] [10] [@] [50] [*]
will set channel 1 at 50% through these cues ("put the wing workers on at 50% through the entire show"). Note that you'll have to vary how you type the level depending on whether you're in single digit, double digit or command line entry mode ([SETUP] > Channel Control Mode).

[1] [UPDATE] {CHANSIN} [CUE] [1] [THRU] [10] [@] [+] [10] [*]
will put channel 1 up 10% through these cues ("make 1 brighter through the first scene"). Or you can go @-level to turn the light or lights down. {CHANSIN} ensures that the light doesn't go up to 10% from zero in any cues where it wasn't originally on. Note that this command raises or lowers the level by a specified amount; it is also possible to scale the level (i.e. make it half as bright) using AUTOMOD.

[1] [UPDATE] [CUE] [1] [THRU] [10] [@] {COPYFROM} [2] [*]
will make channel 1 do the same as channel 2 through these cues ("we've split a pair of lights into two channels, make them do the same as each other for now")

```
[1] [UPDATE] [CUE] [1] [THRU] [10] {FROM} [50] [0] [30]
[*]
```

will put channel 1 to 30 whenever it was at 50, but not change it when it was at any other level (“this venue has weird dimmers - 50% always seems too bright, so just pull it down to 30 whenever it’s at 50”).

```
[1] [UPDATE] [CUE] [1] [THRU] [10] {FROM} [TEXT] [stars]
[TEXT] [0] [GROUP] [10] [*]
```

will set any of channel 1’s attributes that were set to a reference group called ‘stars’ (i.e. to the stars gobo) to the reference group 10 (which might be a dots gobo). FROM appears as a softkey after you type UPDATE CUE. (“put the lights in orange wherever they were in red”).

And, as described in the Fall 2002 Strand News, if you’ve defined a complex set of Auto-Mod rules, you can use UPDATE to apply them to the show permanently:

```
[UPDATE] {UPDATE A-MOD} [CUE] [1] [THRU] [10] [*]
```

UPDATE A-MOD appears as a softkey after you type UPDATE (“I liked those temporary changes we did last night, make them permanent”).

Again, all of these commands work in either live or preview. The easiest way to see them in action is probably to switch to the cross-reference view ([PREVIEW] {XREF}) display so that you can see how channels change through a sequence of cues as you use UPDATE. Try it in a quiet moment on a little show with just a few channels (or at home on the off-line editor) to see what it can do for you. And, if you’re nervous about using any of the UPDATE CUE THRU CUE commands on a real show, why not just save the show first? It only takes a few seconds, and will let you pull back the cues if do you get a cue-range update command wrong.



At the design table at Oklahoma! On Broadway

Macintosh Computers with Strand Consoles

Attention Apple Macintosh users: you can now use your computers with and alongside Strand 500-series lighting consoles in a variety of ways via the magic of VirtualPC, a software package which emulates a PC on a Macintosh. Using VirtualPC you can:



- Run Strand’s off-line editor software on your Macintosh, allowing you to create and edit showfiles away from a console. The off-line editor supports all of the functionality of the consoles apart from DMX output.
- Connect your Macintosh to a ShowNet network as a remote console. This allows you full access to the data in a system’s main console, but independently of the user of that console - you can configure your own channel and cue display format, and look at or even edit cues, groups, subs and effects in preview.
- Connect your Macintosh to a ShowNet network as a node, allowing you to see the same screen display as the operator of the main console.
- Connect to a ShowNet network wirelessly, if there is a wireless base station in the network and you have an Apple AirPort card (or equivalent) fitted to your Macintosh.
- Run WYSIWYG on your Macintosh; when the Mac is connected to a ShowNet network this will allow you to see what your rig is doing graphically, including the ability to look at cues in preview in WYSIWYG. WYSIWYG can run alongside the remote and node software - in other words, you could have three windows on your Macintosh screen, one showing you the operator’s view, one showing your own view, and one showing a WYSIWYG view.

To run Strand’s software you just need the PC-DOS version of VirtualPC; for WYSIWYG you will need a Windows 98 or later version of VirtualPC. Further information about VirtualPC can be found at www.connectix.com; an information sheet giving full details of how to configure Macintosh computers for use with Strand systems can be found on the Strand website, www.strandlighting.com.

Macros September 03

Macros

How many times have you typed '@0'? Wouldn't life be easier if this was a single keypress....With macros, it can be.

A macro is a collection of keystrokes that can be repeated at any time without the need to re-key. There are thousands of potential uses for macros, whether it be that 'off' key, applying reference groups (to allow one-button selection of gobos and colours in moving lights), or grabbing commonly-used combinations of lights.

There are two ways of storing a macro: you can either have the console learn your actions as you type the command - which means that you can check that the command works as you're typing it - or you can 'blind edit' the macro, specifying the command sequence without actually carrying out the actions.

To record a macro 'live', you type:

```
[MACRO][number]{LEARN}
```

where the number can be any macro number in the range 0-2999 or one of the console's macro keys (USER or P1-P7 on all consoles, P8-P14 on 520 consoles, or the softkey-style macro buttons in the centre of 500-series consoles). The console will display 'MACRO LEARN' on the right-hand side of the screen, and whatever you then type will be recorded into the macro. To finish recording, press [MACRO][MACRO].

To create a macro blind, switch to the macro screen by pressing the [MACRO DISPLAY] key (ctrl-F10 in off-line editors). You can select a macro by scrolling up and down using the trackball or by typing [MACRO][number]

then pressing

```
[*][*]
```

to create the macro and start editing it. As you type commands they now appear in the macro but do not have any immediate effect. Press

```
[MACRO][MACRO]
```

to finish editing; you can also give the macro a text label as a reminder of it's function.

However you store your macro, there are some things to consider. General purpose' macros (@0) are often more useful than 'specific' macros (1@0). But some console commands change depending on the Channel Control Mode the console is set to - @0 would turn off a light in Direct 1 Digit but not in Com-

mand Line - so changing this setting will affect some macros.

Also, remember that macros are just sets of commands with no intelligence. Switch to the SETUP screen then record a macro that changes a setting. Switch to the LIVE screen and run that macro - you won't see the result you expect because the macro doesn't contain the keypress to switch the console to SETUP mode. Be sure to make your macro do everything it needs to do - including switching to the right mode first.

Macros that change console settings need particular care because the macro will just record cursor movements rather than absolute cursor positions and, if you're not careful, will change whatever setting the cursor happens to be on next time it's used. The console includes functions to help with this: in any SETUP screen press [*] and the cursor will jump to the top left-hand setting; press the {DEFLT} softkey and that setting will jump to its default value. Your macro could then step through the various settings to get to the one you want. So, for example if you wanted a macro that always switched CC Auto Hold Mode to ON, the safe version would be:
[SETUP][*][TRACKBALL
DOWN][DEFLT][+][LASTSCREEN]

Other useful tricks? Well, the little-known SHIFT-NEXT command is great in macros. Switch to the GROUP PREVIEW display and create group 1 and group 2. NEXT and LAST will move the cursor between them. Now select group 2 then press [SHIFT][NEXT]; the command line will show GROUP 3 even though group 3 doesn't exist - the console has picked the next available whole group number (and will do the same for cues, effects and more).

This allows for a 'store position in next available group' macro. Say 500 is the highest group you want to use for positions, try the macro:

```
[UPDATE]{ADD  
ALL}[GROUP][500][LAST][SHIFT][NEXT][  
@ATT]{position}[*]
```

Playing back macros is also easy. Consoles

have either 7 or 14 'P' keys providing direct macro playback of macros P1-P7/P14. You can also use the SHIFT key with these P keys to give a further seven or fourteen macros - 'SP' in the macro screen. 500-series consoles have four (520) or six (530, 550) macro keys in the centre of the console called macros LCD1-4 or 6 because on 530/550 console the macro's text label will appear in the LCD screen above the key. All consoles also have a USER macro key; SHIFT-USER is also a macro. You'll also find HH1-4 listed; these are the macro keys offered by some handheld remotes. V macros are those on the screens of LCD-monitor 300-series consoles.

Not enough macro keys? Well, holding [SHIFT] and pressing the 0-9 keys will run the corresponding macro number. If you need more, the submaster bump keys can also trigger macros. In the Submaster Display screen, set 'Bump' mode to say 'Mac'; that submaster's flash button is now a macro button completely independent of the submaster, and will run macro 100+sub number (ie. sub 1, macro 101). The [SHIFT] key can be used here, too: holding shift plus the sub button runs macro 300+sub number (shift-sub-1, macro 301). The gap of 200 is because 300-series consoles can have up to 196 submasters fitted.

You can also use submaster faders to run macros - set the macro number under the 'Mac' column in the submaster screen. That macro will be run when the sub is lifted from 0 or its flash button is pressed, provided the bump button is not turned off or set to 'Mac' mode (in which case it would be running an entirely different macro from the sub fader). When you do run out of keys you can run macros by typing [MACRO][number][*]

Or you can run macros from the various external Macro tablets that are compatible with the console - perhaps allowing you to create an active visual representation of your rig.

Cues can also run macros. In the cue preview screen, move the cursor across to the 'Cmd' column and set it to 'M' then the number of the macro you want to run. The macro will be triggered when the cue is run or after the specified delay time. This makes for some very interesting possibilities. Need a 99-step chase, 1 channel per step? Write a macro that adds an effect step then adds the next channel to that step. Trigger the macro from a cue. And write a second cue that loops back to the first 99 times. Run the cues and watch your effect create itself! Incidentally, if macros run from cues ever seem not to work, try changing the 'Cue Sheet Macros' setting ([REPORT]{ADV SETUP}{SHOW SETUP}) from 'Last Handheld' to 'Main

Console'....

As with all elements of a show, you can move macros from show to show (renumbering them if necessary) via the ARCHIVE screen - the numbers corresponding to macro keys are listed in the HELP screen. In the very latest software versions you'll also find a few more macros are pre-defined. You can change these macros, of course, but by default SP1 has always been a function to print a copy of the screens. SP2, SP3 and SP4 are now pre-defined as CHANSTEP, ODD and EVEN; these are commands that have been in the console for a while for selecting ranges of lights (all odd, all even, every third light and so on) but which don't have 'real' buttons so haven't been discovered by many people! Now you can move them to the macro key of your choice, then:

```
[1][THRU][20][CHANSTEP][3][@][6][*]
to set every third light between 1 and 20 to 60%.
```

An Update on Update

In the June 2003 newsletter we looked at the use of UPDATE for selectively storing information from lights into reference groups. This could become tedious because of the need to specify lights in the update command having already selected them while setting them - in other words, to have to type:

```
[1][+][3][+][5][+][6][+][9]
[UPDATE][GROUP][1][@ATT]{position}[*]
```

The latest software versions (from 2.6.6 - note the new naming scheme) offer a quicker alternative. Set your lights as before then just type: [UPDATE]{ADD ALL}[GROUP][1][@ATT]{position}[*]

Any lights that had been selected - ie. showing in red on the channel display of a main console - will have their position stored in group 1, as they would always have done, but will now also automatically set to group 1.

The only potential risk with this is of storing information for other lights you'd been adjusting or had accidentally selected. In that case, you can still specify channel numbers before the UPDATE command. Or store those changes first then press [SHIFT][CLR] on an empty command line before positioning the lights; this sets any 'red' channels back to being unselected: their new levels will be preserved but they will now be ignored by the UPDATE command.

ATC Pages December 03

ATC Pages

At some point, whether they realize it or not, someone using a Strand 500-series console will come to accept that of the controls on the right-hand side of the console, the wheel always controls intensity, the trackball always controls the pan and tilt of moving lights, and the four rotary encoders control the other functions of a light - colour, gobo, iris, focus or whatever.

When you select a light that has more than four functions the console presents some of the functions on the rotary encoders - the functions selected are shown in the 'Rotary' window on the cue playback screen, and at the same time are indicated on the channel display (if you are in Tracker or Tracker Preset display mode). If the functions you need are not selected you move to other combinations of functions by pressing the left- or right-hand key above the trackball. Alternatively, holding down the centre key above the trackball presents six sets of functions on the channel control LCD softkeys.

What relatively few people explore is the way this behavior is controlled: what decides which combinations of a light's functions land on which encoders at any time? The answer is what the console calls ATC Pages - ATC standing for 'attribute control'.

Most people will have noticed ATC Pages on the console's Archive screen. This implies that, as with most areas of the functionality of these consoles, the way that these encoders behave can be customized very easily - and such customization can dramatically improve an operator's efficiency when dealing with moving lights.

Exploring further is a matter of pressing [MORE]{NOTES DISP}{LOAD FILE}{ATC PAGE}. This loads the console's ATC PAGE file into its text editor. Scroll down and you'll find that this file contains three sets of information.

Function Filters: [F1]-[F6]

These are the console's 'function filters' - quick ways of selecting combinations of attributes when storing information in or recalling information from cues, groups, submasters or effects - for example, with the command [1] [UPDATE][GROUP] [1] [@ATT]{position} to store the position of light 1 into reference group 1. (Note: the @ATT key is called ATTRIB on 300-series consoles)

The use of function filters has been described in earlier newsletters, particularly the Summer 2003 issue. By de-

fault, the console arrives with a standard setup of which attributes fall under which 'category' of filter - position, colour, beam, focus or whatever: the numbers listed under each filter are the console's attribute numbers, with '>' used to indicate a range of attributes. A full listing of the attribute numbers can be found in the user manual, in the Fixture Library file ([MORE]{NOTES DISP}{LOAD FILE}{FIXT LIB}), or can be seen on the left of the channel control screen when you select a moving light.

You can customize both what each filter is called and the attributes it contains by editing the details here. For example, if you often store position and index together (so that the orientation of a gobo is stored with its position) you might want to create a specific filter for that combination. To do this, edit the [F6] entry to read:

```
[F6][P+Idx]
3 > 4, 23
```

Then save the changes by pressing {SAVE FILE}. Now every time you use [@ATT]{P+Idx} the console will select and use attributes 3, 4 and 23 - pan, tilt and index.

Attribute Display Order: [D1]

This is the 'Display order' setting for the console - multiple console systems will have [D1]-[D5] to govern the display order for each console in the system. This setting governs the order in which attributes are displayed on the console's screen in Tracker and Tracker Preset displays. By default, attributes are arranged in numerical order. But if you're using a moving light that has both a colour wheel and colour mixing you might prefer to see colour (attribute 2) then colour mixing (attributes 11, 12 and 13) then pan and tilt, in which case you could amend the [D1] listing to say:

```
[D1]
1, 2, 11, 12, 13, 3 > 10, 14 > 99
```

Attribute Control Pages: [1]-[99]

These are the real 'attribute control pages'. Each entry is a combination of functions listed in the order:

what the intensity wheel controls, what left-right movement of the trackball controls, what up-down movement of the trackball controls, what the top rotary encoder controls, what the second rotary controls, what the third rotary controls, what the bottom rotary controls.

So, for example, the entry:

```
[53][C-M-Y]
```

1, 3, 4, 2, 11, 12, 13
 would give control of intensity on the wheel, pan and tilt on the trackball then colour, cyan, magenta and yellow on the four rotaries (on a 300-series console the four attributes would highlighted on the channel control screen, then you'd select each in turn using the buttons on the trackball/mouse),

Some of the standard pages have names such as 'VL5' - but the names are purely descriptive; these are pages that have been created to be useful for these lights rather than pages that will only work with these lights.

The standard combination of pages can slow you down in two ways. When you select a light, the console attempts to find the best match of functions to the light you have. But sometimes it will find a partial match (so that it finds iris and focus, which you need, on a page that also has zoom and diffusion, which your light doesn't have - leaving two encoders wasted). And sometimes, depending on the page it previously had selected, it will find a page that matches the functions but in a different order - which can lead to confusion when focus, for example, sometime appears on the third encoder and sometimes on the fourth.

The solution is to customize the ATC Pages to your needs. Start by deleting all of the standard ATC pages. Then just make the ones you need. So, for example, if you have a show that has colour scrollers, colour mixing washlights and spotlights that have iris, focus, gobo and zoom then just make the pages:

```
[51][Col]
1,3, 4, 2, 11, 12, 13
```

```
[52][Beam]
1,3, 4, 5, 6, 8, 53
```

(Each number is separated by a comma and a push of the TAB key)

Why pages 51 and 52 rather than 1 and 2? Because pages 51-56 are the ones that appear on the channel control LCD display when you hold down the centre trackball key, allowing you to jump straight to them if you want to. Though in this case you wouldn't have to since the console would always select the right page for the light you selected, unless you selected a combination of fixture types using [THRU] or [+].

If you have lights with more functions then you'll no-doubt need more pages, and in some cases you might want the same attribute to appear in more than one page (so that you can use the colour wheel with the colour mixing of a washlight, and with the gobo function of the spotlight). The two most useful tricks are to figure out the combina-

tions of functions you'll want to access together (for example, focus and index with gobo so that you can quickly choose a gobo then set its orientation and softness), and to ensure that when one attribute appears in more than ATC Page, it always appears on the same rotary - focus always on the bottom encoder, for example. That removes the momentary hesitation of deciding which encoder to reach for. Conversely, you don't have to include a particular attribute anywhere - if your lights have a strobe function but you know you're never going to use it, and don't want to select it accidentally, don't include that parameter in any of the ATC Pages. If you do later need to take control of it, either edit the ATC Pages file again or select it directly - [1.41][@][level], or 1.41 then use the intensity wheel for the strobe of channel 1.

For certain situations, you might want to customize things further. For example, everyone who's been taught the console has probably been told that 'the intensity wheel always controls intensity, the trackball always controls pan and tilt'. But you can see that's only true because the standard ATC Pages all start '1, 3, 4', and you can also now see that these can be changed. Users who have come to the 500-series from other consoles might prefer to have pan and tilt controlled by the rotary encoders rather than the trackball, for example, in which case:

```
[51][Pos]
1, 0, 0, 0, 0, 3, 4
```

(attribute 0 is used to force an encoder to do nothing)

And occasionally, having a fifth attribute controller available simultaneously can be useful - for example, with moving lights that offer framing shutters to have the ability to rotate the whole shutter set. In that case, why not use the four rotaries to control the shutters plus the intensity wheel to control the rotation of the whole shutter assembly? Or, for a light that uses two attributes per shutter, make two ATC Pages (assuming 68 is the shutter rotation attribute, 72-79 are the shutter attributes):

```
[56][Shut]
68, 3, 4, 72, 73, 74, 75
```

```
[57][Shut2]
68, 3, 4, 76, 77, 78, 79
```

Softpatch March 04

Softpatch

The softpatch is now a familiar tool in lighting consoles. Manual consoles were hard-wired so that fader 1 operated dimmer 1. Today's control systems let you decide which channel number controls which dimmer or dimmers. If you want to, you can therefore create a numbering system to suit the way you work whether by function (channels 1 to 10 are the front lights, channels 101-110 the backlights), geography (channels 101 to 110 the lights on bridge 1, 201 to 210 the lights on bridge 2) or any other method you choose.

The softpatch is also invaluable if a dimmer fails (plug the light into a different dimmer, change the softpatch so that the channel controls the new dimmer, run the show as normal), and has to be used when dealing with moving lights to match a channel to a moving light's type and DMX address.

Unlike some other consoles, in which a '600 channel' console always contains channels 1 to 600 and each channel can control one 'thing' (one light, one scroller, one function of a moving light - so 600 lights, or 300 lights each with one scroller), Strand consoles have a number of 'intensities' plus an additional number of 'attributes'; the REPORT or PATCH screens will show you how many your console has. So in a 200 channel 300- or 500-series console you could have 200 lights plus 200 scrollers.

You're also not restricted to using channel numbers within the console's number of channels. By default, when you clear a show from a console, you are given a 'one to one' patch, each channel controlling a dimmer of the same number. So a 600 channel console would have channels 1 to 600 patched, and if you tried to patch a channel number outside that range, you wouldn't be allowed to because all 600 channels are used.

However, it is possible to delete channels you don't want. Note that this is not the same as unpatching a channel. If you unpatch a channel from a dimmer:

```
[dimmer number] [ @ ] [ * ]
```

that channel still exists in your show. It still has levels stored in cues. You can still see the channel number and its levels on the channel screen. It's just not driving any dimmers - so the light won't actually come on.

On the other hand, if you delete a channel:
{CHAN>} [chan number] {DELETE CHAN} {DELETE CHAN}

then that channel is gone from the show, forever (-so be careful if you try this!!). But there is now one channel slot

'spare' - the channel count, on the top-right of the patch screen, would now say Intensity: Total 600, InUse 599, Free 1. So you could now patch a channel 1001:

```
[dimmer number] [ @ ] [1001] [ * ]
```

In many cases it can be advantageous to delete all of the channels in the console before entering the soft-patch for a new show:

```
[PATCH] {CHAN>} [1] [THRU] [6000] {DELETE CHAN} {DELETE CHAN}
```

As you then patch your show, now using any channel numbers between 1 and 9999, only the channel numbers you actually patch are created. This means that when you've completed your patch, the show only contains the channels you actually have. A bonus is that patching or typing errors are easy to spot: on the LIVE channel screen a light-grey channel number means an unpatched channel, which in this case must be because you've either patched the channel then used the same dimmer for a different channel or just mis-typed a number somewhere.

Also, in any of the channel display modes that arrange channels horizontally (LP+, GENIUS+ and others), the console inserts a vertical line wherever there is a gap in channel numbers - so, if you'd created only channels 1 and 3 then there would be a line between them. Some find that this makes a useful visual break between blocks of related channels, such as between those bridge 1 and bridge 2 channels.

Other patch tricks? Well, while most people will step through patching one light at a time, it is also possible to patch ranges of lights in one go:

```
[1] [THRU] [10] [ @ ] [101] [THRU] [110] [ * ]
```

to patch dimmers 1 to 10 to lights 101 to 110 respectively, or

```
[1] THRU [10] [ @ ] [110] [THRU] [101] [ * ]
```

to patch in reverse, dimmers 1 to 10 to lights 110 to 101. And the same works with scrollers:

```
[first dmx address] [ @ATT ] [first chan] THRU [last chan] [ * ]
```

(note [@ATT] is called [ATTRIB] on 300-series consoles), and with moving lights, which can be a useful way of getting the console to figure out the DMX addresses of each light for you:

```
[first start address] [ @ ] [1] [THRU] [10]
```

```
[ @FIXTURE ] [fixture number] [ * ]
```

will get the console to patch fixtures 1 to 10 in turn.

Incidentally, if you can never remember the fixture numbers, try using the NEXT and LAST keys:

[address] [@] [1] { @FIXTURE } [1] [NEXT] or [LAST]
As you type the fixture number the corresponding fixture name will appear on the bottom of the screen; NEXT or LAST will then step through the library until you find the fixture you need.

You can also patch non-dim channels - channels which switch on and off rather than fading up and down - using the { @NON } softkey:

[dimmer] { @NON } [channel number] [*]

In general, the [@], { @NON } and [@ATT] keys can be used again after the channel number to modify the behaviour of the patched channel:

[1] [@] [1] [@] [80] to proportionally patch channel 1 (patched to dimmer 1) to 80% -ie. so that the dimmer's output will never go above 80%

[101] { @NON } [2] { @NON } [50] to set 50% as the level at which channel 2 switches dimmer 101 to full (over-riding the default level set in the SHOW SETUP screen)

[2.201] [@ATT] [3] [@ATT] [15] to set the scroller of channel 3 (address 201 on DMX stream 2) to be a 16-frame (15 plus frame 0) scroller, again over-riding the default number of frames set in the SHOW SETUP screen. If you've already patched the light, you don't need to type the channel number again:

[101] { @NON } { @NON } [40]

The { CHAN > } patch sub-menu gives you more options for dealing with channels. { DELETE CHAN } we've already seen. { RENUM CHAN } is invaluable if you decide that the light you had called channel 1001 would be better known as channel 1. Rather than having to change the patch then re-plot all of the cues, groups, subs and effects (either manually or by using AUTOMOD), you can do it in one go: [1001] { RENUM CHAN } [1] [*] [*]

Provided channel 1 doesn't already exist, all the changes will be done for you.

This same sub-menu also offers the functions { ADD SHAPE }, used for adding the extra attributes used by the console's Dynamic Shapes - see the Winter 2002 newsletter - and { CLEAN ATTS }, a function which will remove any stray, unused attributes that are no longer patched to anything.

Back to the main patch menu, then { SET > } brings more options. { .DMX/OUTPUT } lets you choose whether you see the dimmer numbers/ DMX addresses in the format '513' (which will usually be the first address on the second stream of DMX) or '2.1' (which is the same thing in a more human-friendly form!). You can always use either format

when entering addresses, ie:

[513] [@] [1] [*]

and

[2.1] [@] [1] [*]

will achieve the same thing.

{ LIVE = } and { EDIT = } reflect the fact that the console contains two patches. They are called Patch 1 and Patch 2; the 'status' box in the top-right of the patch screen will usually say 'Live 1, Edit 1', reflecting the fact that you are editing patch 1 and patch 1 is also the patch controlling the output. Pressing { LIVE = } and { EDIT = } will toggle to the other patch. This is the first thing to check if you either can't see channels you're sure you patched earlier on-screen (you're probably editing the wrong patch) or the patched channels don't seem to be controlling the lights properly (you're probably using the wrong live patch).

{ SET DISPLAY > } lets you decide whether you want to see the patch in DMX address order or channel order; the other options are for use with fault-reporting dimmers. And { COPY/SWAP > } is a great but under-used menu for making block changes to the patch. For example, if your dimmers 1 to 24 failed and you had to move all of those lights up to dimmers 401 to 424, you could just go: [1] [THRU] [24] { MOVE PATCH } [401] [*] [*] and have the console do it for you in one go. As their name suggests, { SWAP PATCH } will swap sets of dimmers, while { COPY PATCH } will copy one section of the patch to another.

If you need to control dimmers directly, bypassing the softpatch, you can do so using the [DIMMER] key in either LIVE or PATCH:

[DIMMER] [1] [@] [80]

will set dimmer 1 to 80%; [NEXT] and [LAST] will then step through adjacent dimmers one at time.

During this, the warning 'DIMMERS UNPATCHED' appears to remind you that you are bypassing the softpatch. To get things back to normal don't type:

[DIMMER] [1] [@] [0]

since that would set dimmer 1 to 0% (- a useful way of holding a problem light out), but rather type:

[DIMMER] [1] { RE-PATCH }

or, if you wanted to return every dimmer you'd controlled this way to normal operation, either

[DIMMER] { RE-PATCH }

or the fractionally quicker

[DIMMER] [DIMMER]

Introducing version 2.8 Summer 04

Introducing 2.8

Continuing the evolution and improvement to their console software that has been ongoing since the 430 console first appeared in 1995, Strand have now released GeniusPro/Lightpalette software version 2.8. Let's take a look and see what this adds to make our lives easier!

Trackback

The most powerful new feature is TRACKBACK.

Many console users are familiar with tracking on the 500-series and consoles from other manufacturers. Historically, tracking is the descendent of the way that manual 'one preset' consoles, such as the piano boards used on Broadway, were operated: in cue 1, the electricians might put channel 1 to 50%, channel 2 to 60% and channel 3 to FL. In cue 2, they would move channel 1 to 30%. In cue 3, they would move channels 2 and 3 to 20%. In cue 4, they would move all of the channels to 0%. In other words, a channel would be put to a level, and would then stay there (track) until there was an instruction for it to do something else, while a cue would be a list of changes to particular channels.

Contrast this with 'non tracking' or 'state' style operation. This is the descendent of the two- or three-preset manual consoles that were common in the UK. Here an operator would set a complete lighting state on one set of faders. He or she would then set the next state on a second set of faders, then cross-fade from one set to another before clearing the first set and using it to set cue 3. Generally the cue sheet therefore described a level for every channel in every cue. Occasionally a cue would be so simple that it wasn't worth wasting a complete set of faders for - perhaps a practical light was switched on, requiring just one channel to be moved to full. Here the operator's cue sheet might note that this was a 'move fade', to be carried out by manually moving the appropriate fader on the current 'live' fader bank.

In time, US computer consoles - the Lightpalette family - adopted the tracking style of operation, but with the advantage that the console could always figure out how to get the complete 'look' of a given lighting cue back on stage, even when jumping around out of sequence - something that was quite hard for the piano board operators to do from their list-of-changes cue sheets! Conversely, UK/European computer consoles, such as the Galaxy family, adopted the 'state' approach where each cue contained a level for every channel and 'move fades' could be used in special cases where only certain channels had to change in a cue.

The current 300- and 500-series consoles can work in either way: choose by pressing [REPORT] then {ADV

SETUP>} then {SHOW SETUP>} then setting CUE TRACKING to OFF (for state operation: complete states plus move fades) or either ON or THIS CUE ONLY for tracking-style operation.

The mode of choice will sometimes depend on the operator or lighting designer's experience or preference, but generally if you're dealing with moving lights you'll want to use the console in tracking mode: you usually want a moving light to track because if you point it somewhere, you want it to stay there until you move it somewhere else! Complex shows, particularly those with overlapping cues, also benefit from tracking operation: making changes that run through long sequences of cues is easier, and it allows multiple cues to run at the same time since each cue will only affect the channels it has instructions for. It's therefore very easy to make a slow sunrise (cue 10 has the sun channel coming to full over five minutes) with lots of quick changes of specials then happening downstage of it (cues 11 to 20 each change to a different special in one second).

In TRACKING ON mode, recording or updating a cue, or modifying a channel in the preview screen, will cause that change to track forwards until the next cue where the light has an existing instruction to do something different - unless you press the TRACK/QONLY key to make the change QONLY, limiting the change to just that cue (conversely, in THIS CUE ONLY mode, a change will only affect one cue unless TRACK/QONLY is pressed to make the change TRACK).

The new Trackback function allows changes to track backwards through the show as well as forwards. For example, you might reach the middle of a sequence before you notice a light is too bright. Before, the quickest way to make the change through the entire sequence of cues after setting the new levels was either to use UPDATE to store the changes into the first cue in the sequence, from where they'd then track forwards (but this meant you had to know where the channels first came up), or to go to PREVIEW, scroll up until you found the cue where the channels came up then go [channels][@][LIVE] to 'pull' the current levels from live into the previewed cue, from where they would track forwards (but this would be cumbersome if different channels came up in different cues).

Now you can just type

[UPDATE] [SHIFT] [TRACK/QONLY] [*]

which would appear on the command line as

```
[UPDATE] [TRACKBACK] [*]
```

This would make your channels track backwards through the show to the point where they actually came to their levels, and track forwards through the show until they next changed level or were 'blocked' with an instruction to go to the same level (since we're in TRACKING ON mode and didn't specify that we wanted the change QONLY).

If we'd wanted the change to track backwards to its start cue (a function some other consoles call 'updating the source' of the channel's level) but not to track forwards, we could type:

```
[UPDATE] [TRACKBACK] [QONLY] [*]
```



Miss Saigon on tour in Manchester

TRACKBACK can be used wherever the QONLY/TRACK might currently be used - for example, when recording a cue, updating a cue or setting a channel's level or other attributes directly in the cue preview screen whether by specifying a level directly, using a reference group or using @CUE x or @LIVE.

The main thing to note is that a channel that wasn't previously on won't track backwards, since otherwise it would be too easy to make lots of channels suddenly appear back through to the start of the show!

You should also note that TRACKBACK's behaviour is actually subtly different from that of TRACK. When a change tracks forward, it tracks until it finds the next in-

struction for that light; the new level stops in the cue before that instruction. Trackback goes backwards to an existing instruction then changes that instruction as well. This *is* the behaviour you actually want to happen! Where you need to be careful, though, is if you have a moving light set to a position in cue 1 (say), come on in cue 2, fade out in cue 3, then track on in that position through subsequent cues. In cue 20, you might then set it to a new position and turn it on. Trackback looks like the perfect way to get the light positioned in advance for this cue and store its intensity in that cue all in one command:

```
[1] [UPDATE] [CUE] [20] [TRACKBACK] [*]
```

but this would have tracked back and changed the original position set in cue 1, making the position for cue 2 incorrect! To make the best use of Trackback for this kind of use you might want to consider 'blocking' the attributes for moving lights after they're used in cues, to 'protect' them from backwards-tracking changes. As always, at the very least you should beware of this possibility when selecting how to store changes into a cue.

Trackback is a powerful new tool in the programming armoury, though. The easiest way to get comfortable with it is to try it for yourself - perhaps in the [PREVIEW]{XREF} display, where it's very easy to see changes run through blocks of cues!

Also New

Other new features since 2.6.15, the last general release version, include:

- AutoMoveWhileDark will now run every time you load a cue into a playback. This is particularly useful if you have to jump over some cues: load the next cue you want to run and AutoMove will get the lights in the right place ready for that cue.

- [GOTO] [CUE] [number] [*] now shows channel colour coding (purple for going up, green for going down) relative to the previous cue in the cuelist rather than the previous state on stage, which has been its behaviour until now. [CUE] [number] [GO] and [CUE] [number] [CUT] retain the old behaviour.

- You can now use function filters to move sets of attributes to different parts of part cues, rather than having to use attribute numbers. For example, in preview scroll to part 2 of a cue then type [chans] [@ATT] {position} {SOFTBLOCK} [*] to just move pan and tilt of the specified channels into that part.

- There are now more function filters - 12 instead of 6. Configure in the ATCPAGE file as before (see the Winter 2003 Newsletter), access them using the centre LCD keys or F7-F12 on an external keyboard.

- A console will now display a warning in its Status window if a network node goes offline, allowing the problem to be investigated as soon as possible.

As with all recent software versions, you can find a full list of what's changed by pressing [HELP] then selecting {LINKS} then {NEW FEATRS} - don't forget to download and install the updated console help files at the same time as you download and install the new console software!

At the time of writing, 2.8.5 is the current release version. As always, it is freely downloadable at the Strand website, www.strandlighting.com.

Rob Halliday

Rob Halliday began lighting at school with a collection of Strand Patt 23s and 123s; he subsequently spent several years with Britain's National Youth Theatre with a wider selection of equipment! Since then he has worked on productions throughout the UK and in Australia, America, Japan, Korea, Singapore, Russia, Lebanon, Belgium, Denmark, France, Germany and Hong Kong. Much of his time is spent working as a Lighting Programmer on shows including *Les Misérables*, *Ragtime*, *Oklahoma!*, *Anything Goes*, *My Fair Lady*, *Miss Saigon*, *The Witches of Eastwick*, *Pan*, *Putting It Together*, *Martin Guerre* and the forthcoming *Mary Poppins*. He also lights shows (including, recently, *The Wiz*, *Sweeney Todd*, *A Little Night Music*, *Maggie May*, *The Fix* and *Is There Life After High School*) and writes about technical theatre for magazines including *Lighting+Sound International* and *Lighting Dimensions*. Rob is a regular contributor to Strand News with his Console Tips column.

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