

# STRAND

## News

Summer 2005



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# C21 Professional Dimming for the 21st Century EC21

**C21/EC21 offers new standards of performance, ruggedness and ease of installation to meet the toughest demands of 21<sup>st</sup> Century entertainment venues. The new system is based on a proven Strand design, with over 2 million dimmers installed around the world– solid reliability, day in, day out.**

**The new range was designed with help from top professional installers– there's plenty of wiring space, and all terminations are easily accessible.**

C21/EC21 is flexible – mix and match single, dual, even quad modules, TrueSine™, thyristor, fluorescent, contactors or fillers, in any of three sizes of dimmer rack. We'll design a system to fit your needs now, and it'll grow with you as those needs change over time.

Continuing our implementation of Strand ShowNet solutions the new dimming system features a "network-centric" 16/32-bit RISC main processor running embedded Linux, an integrated Ethernet port, and a Web based configuration and dimmer status-reporting system. Our new "Dimming Engine" technology allows dedicated slave sub-processors to control individual groups of dimmers. Each processor individually samples the incoming line voltage sinewave and is able to calculate 30,000 possible output voltages within a single line cycle.



Status LED and test switch gives dimmer level and status, as well as a one-touch dimmer test.



Single or dual electronic modules control up to 144 dimmers per EC21 rack (192 dimmers for C21). Panic controls may be wired to external switches/systems as required.

"Panic" is fully functional even when the electronic modules are not present



## Installation

The new rack electronics also simplify installation as each dimmer rack processor contains an integrated Ethernet multi-port switch allowing Ethernet rack-to-rack data interconnection using pre-made Ethernet patch cables. Additionally, every C21/EC21 dimmer rack is shipped with our Outlook Architectural and System Wide Control capability.

Strand Lighting chose the USITT trade show in Toronto for the introduction of the new C21 series dimmer racks.

A first for C21 is the ability to have up to 96 Sinewave dimmers in a single rack greatly simplifying the implementation of Sinewave dimming solutions.



## C21 Chosen For

### Canada

Canadian Broadcasting Corporation  
Toronto Opera House

### USA

Nashville Symphony Hall  
San Francisco Conservatory of Music

### China

Dongguan Opera House

## EC21 Chosen For

### UK

Courtyard Theatre  
Royal Shakespeare Company  
Birmingham Town Hall

# C21 Professional Dimming for the 21st Century EC21

## TrueSine™

True silence and true economy

Strand's extraordinary TrueSine™ dimming technology gives you two dimmers in a single module – full density, fully silent! TrueSine™ dimmers output a precise variable sinewave, with no sharp rising edges, and therefore no filament noise. TrueSine™ dimming is a must for concert venues and many houselight applications. But there's more– TrueSine™ dimming systems also eliminate triplen harmonics, meaning that the dimming system puts no noise on the power grid. With a unity power factor, the expensive 'K-rated' supply transformer and oversized neutrals are no longer required, and power company harmonic surcharges are a thing of the past.



## Dimmer Modules

All C21 and EC21 dimmer modules are built to last from heavy-duty formed aluminum, and incorporate the highest-quality power components and circuit breakers. In North America C21 uses an innovative rocker-style breaker with a bright red trip indicator you can see through the EasyView™ door – a real benefit for rapid faultfinding. For 230 volt applications Thermal Magnetic breakers are available in SP, SPN and RCD configurations to meet the needs of a wide range of projects.

Power pins are generously overrated at 150amps to ensure low heat rise and absolute reliability.

Dimmer racks may be specified with any combination of dimmer modules. Modules are keyed to prevent insertion in inappropriate module slots.

All TrueSine™ modules, and (optionally) Reporting modules, feature a status LED and a test switch for each dimmer circuit – one-touch dimmer testing from the rack, and level/status indication for every dimmer. And when you just have to get a lot of dimmers in a small space – the Quad is for you! With up to 144 dimmers in an EC21 full-size rack and up to 192 in a C21 rack, both systems offer exceptional density when space is at a premium.

## New EC21 Dimmers and OneLight Daylight Luminaires recognized at ABTT

Strand Lighting's new EC21 Dimmers and OneLight range of Daylight luminaires were both recognized in the best Lighting Product Category at the ABTT Dinner in London Wednesday evening. Strand Lighting chose the ABTT show for the UK launch of the new EC21 series dimmer racks. Strand Lighting Group President Tim Burnham said: "The ABTT is an organization of theatre people who really know their products. As a former British Theatre Technician myself, it was a great moment for me personally to witness these endorsements at the Awards Dinner Wednesday night. This year's ABTT show has been amazingly busy, and we've been working nonstop with real customers talking about real jobs - seems like the UK business is in great shape and I'm pleased that Strand was the brand people were talking about at the show."



Showtech, Berlin - German launch of EC21

## Showtech exceeds all expectations

The European launch of EC21 took place at the Showtech 2005 exhibition in Berlin.

Consultants, technical directors and customers from all over Europe were very keen to arrange a demonstration of this forward-looking dimmer system. Feedback from the show is very promising.



EC21 dual reporting module

EC21 quad module

EC21 dual module with RCD option



EasyView™ door assures safety and total security while allowing users easily to identify circuit-breaker trips

**For further information on the C21 and EC21 digital dimmers visit our website or contact your local Strand representative.**

[www.strandlighting.com](http://www.strandlighting.com)

# Sinewave Dimming for Fairfield Community Arts Center, Ohio

by Vincent Lighting Systems

**Located 20 miles north of Cincinnati, Ohio, Fairfield is not unlike many suburban cities experiencing rapid population growth. In response, the Fairfield Community Arts Center was built to serve its citizens on several levels by providing meeting and presentation spaces, an art and craft workroom, art gallery and a theatre.**

The proscenium theatre seats 250 and was designed by John Poe Architects of Dayton, Ohio. The intimacy of the performance space posed a challenge to Richard Hoyes of Fischer Dachs Associates, who designed the lighting system. "The current trend for dance performances is to keep the houselights on at a low level to allow the audience to read their programs during the course of the performance," noted Richard.

From his past experience with 250-watt Par 56 lamps which were already provided for the job, he knew that when dimmed below 50%, "... the filament of these lamps will produce an audible hum that will be distracting to the audience." For this reason Hoyes decided to specify Sinewave dimming technology to help eliminate any lamp filament noise.

He stated, "With [Strand Lighting's] dimmer rack, we were able to easily incorporate the (18) SST Sinewave plug-in dimmer modules required for house lighting into the same dimmer rack along with standard SCR and relay non-dim plug-in dimmer modules. This eliminated the need for adding a costly separate dimmer rack for the (18) SST Sinewave dimmer modules."

Along with the Sinewave technology, the control system – driven by a Strand Lighting 300 Series Console – employs Shownet Ethernet control distribution. To provide greater flexibility during hang and focus times, the theatre is equipped with SN110 nodes, a wireless Remote Focus Unit plus a laptop PC. The PC, when plugged into a



system connected RJ-45 receptacle, can serve as a designer's remote to the 300. As an added bonus the theatre can easily convert the PC to wireless with the purchase of a standard wireless network card.

An AMX control system brings all the theatrical, architectural and work light circuits together in a quick, easy-to-use touch screen for classes and other functions not requiring a series of complex lighting changes.

Dave Zlatic, Technical Director for the theatre has noticed a demand from the community and outside organizations for using this theatre. "This is a great intimate space with amazing lighting positions," says Zlatic. He's thankful that Hoyes considered the future needs of the space. "With the DMX over Ethernet, we are set for intelligent lighting needs for our future. The technology was designed to last," stated Zlatic.

The Electrical Contractor for the Arts Center was ESI Electric of Cincinnati. Walt Weber and Jillian Spurlock of the Vincent Lighting Systems—Cincinnati office provided Dimming and Control equipment and Project Management.



**The Fairfield Community Arts Center in Fairfield, Ohio is the first completed project designed by Fisher Dachs Associates to make use of the new sinewave dimmer technology.**

**Richard Hoyes is a twenty year veteran of the stage lighting industry and has led FDA's lighting department for eight years.**

*Photography courtesy of David French*



## 50th 300/500 series Console installed in New Zealand

by Chris McKenzie, Professional Lighting Services

Professional Lighting Services in association with their associate company Kenderdine Electrical have just delivered the 50th 300/500 series console in New Zealand.

Bruce Stewart, Theatre Manager of Kristin School recently took delivery of his new 300 series console from Chris McKenzie of PLS (see picture).

Kristin School will use the 300 console in two venues. Their main auditorium sees a full range of high school productions along with all the usual school auditorium functions will now be controlled by the 300 series desk.

In addition the 300 will be used in their new "Dove Theatre," also equipped by PLS with a full lighting rig including Strand SD6 dimming.

PLS and Kenderdine as the two companies are commonly known in New Zealand have been very successful with the 500 and 300 series consoles.



Bruce Stewart, Kristin School Theatre Manager (left) and Chris McKenzie, PLS

Installations vary from six consoles ranging from 550 to 300 in six venues at "The Edge" Auckland's flagship performing arts complex, to a single 300 in high schools and community arts venues up and down the country. The 520 has become a benchmark console for the performing arts and television in New Zealand.

Every major touring theatre currently has at least a 520 or 530 which allows the easy touring of shows through the country. The evolution of the 500 series and now the 300 series has followed a renaissance of theatre building in New Zealand.

As a reaction to this situation the major performing teaching institutions, such as Auckland University, New Zealand Drama School, and Unitec Performing Arts have all equipped with 500 or 300 series consoles to ensure a stream of trained technicians for the country.



## Telstra Clear Pacific Events Centre puts trust in Strand Lighting Systems

by Chris McKenzie, Professional Lighting Services

The Genesis Theatre, part of the Telstra Clear Pacific Events Centre in Manukau City, Auckland has been fully equipped with a 520i console, SD6 dimmers and a range of SL spotlights among its full rig of equipment.



Genesis Theatre, Telstra Clear Pacific Events Centre, Manukau City, Auckland



SD6 Dimmers have proven popular in many installations

In addition to the Genesis Theatre the Centre features a large multi-purpose arena space which has been equipped with a full mother truss along with a rig of fixtures and dimming including SL profiles and control by a 300 series console.

The two consoles can be shared by both spaces and because of the common operating system and portability, the use of a specific console will be decided on the requirements of each production in each space.

# White Light and Strand Light Up Britain For Crown

by Rob Halliday

**For six days from Monday April 25th, one landmark building per day across the UK gained spectacular coloured lighting courtesy of Crown Paints and lighting supplier White Light to mark Crown Colour Week - a nationwide celebration of colour.**

In each six cities - Bristol, Birmingham, Cardiff, Manchester, Newcastle and Glasgow - residents were asked to vote for their favourite colour via a survey in a local newspaper. A local landmark building was then transformed into that colour, the change orchestrated by a White Light team led by production manager Simon Jones.

Jones and his team were brought into the project early on by icas PR. "They'd had the idea of giving buildings a colour makeover," he explains, "but needed advice on how this could be brought to life and what equipment would be needed. Our role included deciding which buildings could be lit to best effect in the time available and then liaising with local councils and building management to make sure they were happy to be part of the project."

Because the results of the local surveys weren't known until the week before the lighting had to be implemented, Jones had to specify a rig flexible enough to light all of the chosen buildings in any colour. The touring rig included twenty StudioDue CityColor colour-changing floodlights, seven Martin Mac2000 spotlights as well as a selection of Pars and Arenavisions plus over 3.5km of mains and control cable, 30m of cable ramp and 50m of safety fencing. In addition, the team toured a Strand 530i console to control the lighting.



*Theatre Royal, Newcastle*

The week itself was treated like a quick-moving rock-and-roll tour - months of careful planning and preparation followed by a week in which the 'show' carried all of the equipment and staff it needed as it travelled 1800 miles around the country in just six days.

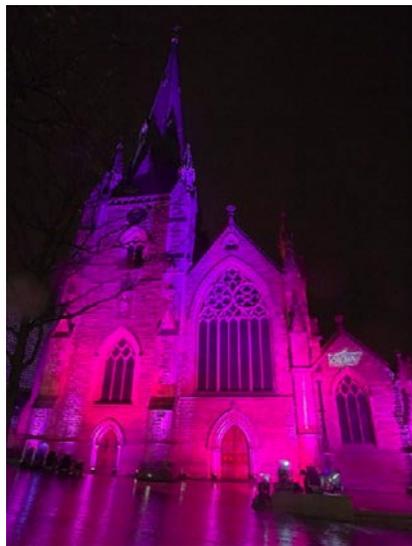
"We knew that on each day we'd have just six hours to set up the lighting then just 30 minutes to focus and program," Jones explains. "To help us achieve that, as much preparation work as possible was carried out in advance - arranging to park

generators, a crew bus and an equipment lorry in confined, busy city centres; getting permission from city councils; getting safe access to the roofs of old

buildings; getting positions for the equipment - even arranging to get street lights and building lights turned off!"

The team for the week itself included Jones plus lighting electricians Ben Cash, Steve Sherriff, Duncan Holmes, Richard Gorr and Mark Newell, two generator technicians from Powerline, a tour bus driver, a truck driver plus Helen Lawson and Helen Mitchem from icas PR.

The final votes saw the Theatre Royal Newcastle and Glasgow University turned blue, Cardiff Town Hall, yellow, the Urbis in Manchester, purple, and



*St Martin's Church, Birmingham*



*Cardiff Town Hall*

St Martin's Church in Birmingham and Bristol Cathedral shades of pink and purple. Each building was lit for around six hours after sunset before the equipment was packed up and moved to the next city.



*White Light Crew taking a well earned rest*

Photography courtesy of White Light/Louise Stickland

# Billy Elliot and Guys and Dolls Under Strand Control

by Rob Halliday

**Strand Lighting consoles are in control of the two big new shows to open in London during the Spring: the new stage musical of the film Billy Elliot, and the new stage production of the classic musical Guys and Dolls.**

After a long technical rehearsal period, Billy Elliot opened at the Victoria Palace to rave reviews, many heralding it as the finest British musical they had ever seen. Adapted for the stage by the team who originally created it for the film - director Stephen Daldry, choreographer Peter Darling and writer Lee Hall - the stage version has music by Elton John, with designs by Daldry's regular theatre collaborators, designer Ian MacNeil and lighting designer Rick Fisher.

To program the show, Fisher turned to Vic Smerdon, continuing their collaboration which began on Jerry Springer: The Opera. Fisher's rig included a wide assortment of equipment, including Vari-Lite VL3500Q framing spotlights and VL3000Q Washlights, ETC Revolutions with framing and rotating gobo modules, DHA Digital Light Curtains and Strand Pirouette PCs. The conventional rig even includes vintage Strand Patt 23 and Patt 123 lanterns, used within scenery to provide authentic period dressing; all of the equipment was supplied by White Light in London.

Control for the entire rig is from one Strand 520i console, with a 510i as a

backup; during the production period Smerdon and production electrician Paul Franklin chose to locate the show's main console in the theatre's control room, then to program the show using a 530i as a remote console in the stalls via Strand's ShowNet network.

A few weeks after Billy Elliot opened, the classic Broadway musical Guys and Dolls returned to the West End, in a new production produced by the team from the acclaimed Donmar Warehouse theatre though at the larger Piccadilly Theatre rather than at the tiny Donmar itself. Directed by the Donmar's artistic director, Michael Grandage, designed by his regular collaborator Christopher Oram, the production was lit by Howard Harrison and programmed by Rob Halliday.

The rig, supplied by Stage Electrics



in Bristol and installed by a team led by production electrician Fraser Hall, once again uses a wide range of equipment, including Vari-Lite VL3000 Spot, 3500 Spot, 3000 Wash and 2000 Wash units, ETC Revolutions and DHA Digital Light Curtains. The entire rig is controlled from a Strand 520i console, with the theatre's own 520i console running as a backup.

As well as the rig, the console also

controlled the 'lightscape' part of Oram's scenic design - 2700 light bulbs designed to flash and chase as a monochrome representation of the New York cityscape. Built by Howard Eaton Lighting Limited, the lightscape has its own on-board dimming; an enormous range of chases were then created to bring the lightscape to life in a variety of moods, and with each sign having its own chase 'personality'. This gives the console's effects section quite a work out, at one point starting twenty-five effects simultaneously before crossfading from those effects to an entirely different set of effects.

Whether because of the lightscape - or more possibly because of the show's strong cast, including Ewan McGregor fresh from opening the latest Star Wars movie, TV and Broadway actress Jane Krakowski, and British actors Douglas Hodge and Jenna Russell - Guys and Dolls is currently sold out, with long queues for returned tickets outside the theatre every morning, and crowds of people outside the stage door every night waiting for autographs.

The shows join an enormous range of other productions under Strand control in the West End, including Mary Poppins, The Far Pavilions, Chitty Chitty Bang Bang, The Woman In White, Saturday Night Fever, The Big Life, The Phantom of the Opera, Les Misérables and countless plays.

## New York Shows Using Strand Consoles

*Chitty Chitty Bang Bang* designed by Mark Henderson

*Mama Mia* designed by Howard Harrison

*Primo* designed by Paul Pyant

*I Love You You're Perfect Now Change* designed by Neil Peter Jampolis

*Drumstruck* designed by Jeff Croiter

# Royal Shakespeare Company choose new EC21 for The Courtyard Theatre

by David Catterall

Strand Lighting has reached agreement with the Royal Shakespeare Company (RSC) to supply 5 racks of the new EC21 dimmer for the exciting new Courtyard Theatre development in the company's home town of Stratford-upon-Avon.

The Courtyard Theatre will be the Company's main performance space whilst the Royal Shakespeare Theatre is redeveloped from 2007. Installation will commence at the end of 2005 with The Courtyard Theatre opening in mid 2006 as part of The Complete Works of Shakespeare Festival.

The RSC complex in Stratford is one of the worlds most widely acclaimed and internationally recognised theatre venues, visited and enjoyed by millions of Shakespeare fans from around the globe.

EC21 is the latest high density modular dimming system from Strand that allows the user to mix and match Truesine™ sinewave, thyristor, fluorescent and non-dim dimmer modules, with no loss of density. Up to 96 x 5Kw sinewave dimmers may be contained in each rack. The rack and dimmers are fully web browsable using Strand's Shownet Ethernet network and support Strand Outlook and SWC architectural controls. They also support DMX512 and come ready to support ACN (Advanced Control Network) as soon as the standard is formally adopted.

Commented Geoff Locker, Technical Director for the RSC;

"The RSC have enjoyed a long association with Strand Lighting and we are delighted that our work in the new Courtyard Theatre throughout this exciting period in the company's history will again be supported by the installation of the new and innovative Strand EC21 Dimmer Racks."



*Andrew Parker, Director of Finance and Administration for RSC (left) and David Catterall, European Sales and Marketing Director, Strand Lighting*



*Strand's new EC21 Dimmer Rack is fully web browsable and can support up to 96 5Kw Truesine™ sinewave dimmers or up to 144 2.5Kw thyristor dimmers.*

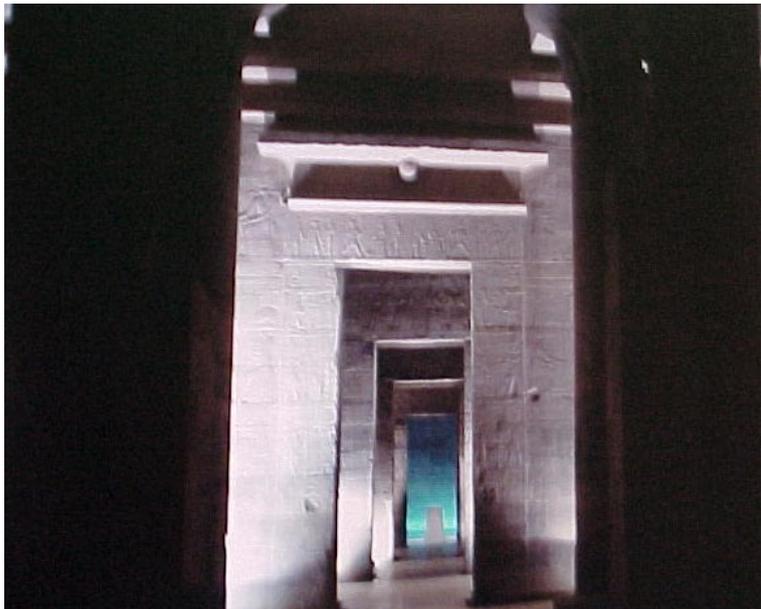
**Intensive professional users like the RSC always place heavy performance demands upon their equipment. EC21 brings new levels of dimmer rack flexibility to the RSC. It also confirms our commitment to product innovation based firmly on experience.**

**Strand is delighted that our long relationship with the RSC is being reinforced by this close co-operation and we wish them well with their forthcoming move into the Courtyard Theatre**

# Philae Temple, Aswan

The Egyptian Ministry of Culture has long recognized that there is a significant opportunity to present a sound and lighting experience built around the popular Philae temple complex on the island of Aglika. Dating back 26 centuries, the temple was moved to this site after the original site was flooded with the completion of the Aswan Dam.

The temple was dedicated to the goddess Isis. Isis may be the oldest deity in Egypt, and certainly the oldest to survive the ages in much the same form. She may also be the most important, for although the other gods were worshipped widely, Isis was worshipped almost universally by all Egyptians. The major goddess of the Egyptian pantheon, she had many of the same attributes of other mother-goddesses found all over the world. Temples to Isis are found everywhere in Egypt, some of them very ancient,



and many houses even had shrines to her devotion. Her worship was taken up by the Greeks and the Romans, and indeed, Isis followers are still found today.

The ministry is one of the leading proponents of presenting historic sites using a Son et Lumiere presentation style having completed projects at Giza illuminating the Pyramids and the Sphinx, the Great Temple of Karnak at Luxor and recently the Abu Simble Temple. All of these facilities used Strand Lighting Dimming and control systems which have provided proven rugged reliability in the extreme conditions found at all of these sites. Shows run most evenings at the sites with the first site at Giza now running for nearly 15 years.

The overall system design was handled by Philips Company of the Netherlands who have designed several facilities for the Egyptian government. The systems were supplied to the Misr Company For Sound and Light and the installation

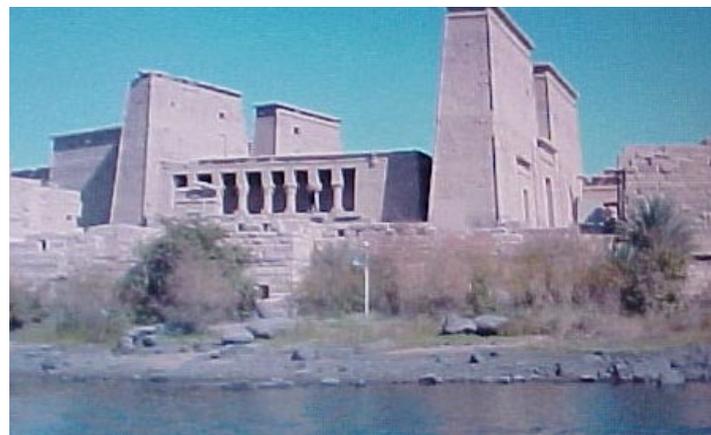
contractor for the lighting system on the project was Horizon Trading and Contracting.

Strand Lighting supplied SLD dimmers for the project with 124 5kW and 118 3kW dimmers controlling a wide range of lighting loads. The dimmers are driven by a custom third party rackmount showcontroller. A rack mount show controller distributed lighting cues to the dimmers over a Strand ShowNet network.

The entire dimmer system is monitored using a PC running Strand's powerful Reporter Pro software. Reporter Pro can configure the lighting data network and provide operators with real time load status information on a dimmer by dimmer basis.

This data allows operators to perform regular lamp maintenance during the daylight hours without having to look for lamp burnouts. The system automatically tracks load changes and notifies operators.

AMC has been an agent for Strand Lighting for over 25 years.



Our thanks to the following people for providing this story

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- Ayman Mousa (Horizon Co)
- Wael Gouda (Horizon Co)

# Console Programming Tips

by Rob Halliday

## Making The Console Behave The Way You Want It To Behave

One of the great strengths of Strand's 300- and 500-series consoles has always been the extent to which you can configure them to work the way you want them to work, rather than being forced to talk to them using a rigid set of rules as is the case with some other consoles. The 'user setup' can also be loaded separately from the rest of the showfile - allowing each console user in a theatre to create their own setup - and each console in a networked multi-console system also has its own user setup. User setups can also be stored as part of multi-user systems that use the Server software.

Some of the User Setup options - accessed by pressing the [SETUP] key on a console or ctrl-F9 on a PC or off-line editor, then navigating using the trackball or cursor keys with the wheel or +/- keys to make changes - are obvious, others less so: let's take a look at the choices you can make, what they do and why particular settings might be useful. Remember, you can make changes to this setup screen as part of a Macro if you need to toggle settings frequently - see the September 2003 newsletter for more details about making macros.



## Control Modes

This set of options define how you communicate with the console

### Channel Control Mode

This defines the way that you 'talk' to the console. Direct 1 Digit is the conventional 'British' way of entering commands, '1@1' setting a light to ten percent, '1@1.5' setting it to fifteen percent, and with actions completing commands - 'cue 6 Record'; there is generally no need to press the [\*] key to end a command. Direct 2 Digit is similar but levels have to be entered as two digits - '1@10', '1@15', '1@00'. Though this can often be a little more typing for intensities, it's useful for scrollers with more than ten frames - '1@ATT 12'; this mode will be the format most familiar to users of ETC Express/Expression consoles. Command Line is the familiar American Light Palette style of command entry, where you have to press [\*] to end each command - '1@1\*' - and commands come first; 'Cue 1 Time 10 Record'. Generally you can switch modes at any time since it doesn't affect console playback behaviour in any way, though you do need to be a little careful if you use macros since they are effectively typing commands and so would need to suit the Control Mode chosen.

In every mode [Shift]-[\*] is a useful trick to know - it will repeat the last command for you.

### CC Auto Hold Mode

CC stands for Channel Control. Auto Hold defines whether a light that you have selected stays 'captured' as you run cues (CC Auto Hold On), or will follow its programmed cue levels even though it is selected and can be adjusted using the level wheel (CC Auto Hold Off). Auto Hold only applies to the current selection, not (as on some other consoles) and channels that have been selected recently; to 'release' a selection press the [CLR] key; the channel or channels will return to their programmed level the next time you run a cue.

### Wheel Mastering

This defines how the channel control wheel behaves when you select multiple channels at different levels: do they all move up and down 'together' (ie. each one increases by 1% for each nudge of the wheel) or as a proportion of their set level (ie. each gets 1% brighter for a nudge of the wheel). The behaviour when lights reach full or zero and you then change the direction your moving the wheel in is also different. Hard to explain, but try it for yourself and see which you prefer!

### Wheel Mastering

This is the 'gearing' for the channel control wheel - how quickly the lights change level as you move the wheel. Again, this is largely down to personal preference.

### Wheel CC In Preview

In the early days of the 500-series consoles, the level wheel couldn't be used to adjust channel levels in any of the consoles Preview screens, since it was used to scroll through the cue list. Now you get to choose whether this is possible: 'Off' is the old-style behaviour (trackball scrolls through preview displays one item at a time, wheel scrolls a page at a time); 'On' means that the wheel will adjust levels, the trackball will alter the pan and tilt of a moving light and the rotary encoders will alter other attributes. This needs some care if you're used to the old behaviour since otherwise you can end up altering channels when you're expecting to scroll through cues. 'Shift+Wheel' is for those who sometimes want to alter things using the wheel - by

### ON Level %

This defines the level a light goes to when you press the ON key. Some set this to be 100%, but 'at full' can be easily achieved in other ways (for example, by pressing the [O] key twice), so perhaps use ON for another commonly used level such as 70% or 80%. Though this ON level is a default, it is also possible to define a different ON level for every light in the rig, and for every console in a multi-console system, using the \*ON special groups (groups 993.1-5); these will over-ride the level set in the User Setup screen. The ON Handheld groups also allow the ON button on handheld remotes to set lights to a different level from the ON key on the console.

default wheel and trackball scroll through cues, but if you hold down the Shift key they will adjust channel levels instead.

Wheel CC In Preview is particularly useful when trying to balance lighting looks using submasters: if a state is up on a submaster you can't always balance individual levels within that state using the level wheel. However, with Wheel CC In Preview ON you can jump into the Sub Preview screen and alter levels there; if the submaster is up the level will also be adjusted live.

Wheel CC In Preview is also useful if you're using WYSIWYG since, by using the DMX PREVIEW function of the console, you can make adjustments to the settings of moving lights in preview on WYSIWYG.

## Console Programming Tips (continued)

### **UP/DOWN %**

This defines the amount by which the {UP} and {DOWN} softkeys will alter the level of a channel selection. Other percentage changes can be achieved using the [+] and [-] keys - for example [1] [@] [+] [0.7].

### **Stop Key**

This defines what the STOP key on 500-series consoles does - whether it's a blackout key that turns all of the lights off, a STOP ATTS key that stops all changes to moving light attributes whether controlled manually or played back by cues (-this is a useful 'emergency stop' function to make sure that moving lights can't move while people are working up ladders close to them), or both. On consoles without this key, the 'B' key is the keyboard equivalent.

### **GM Affects Record**

GM is GrandMaster; this defines whether the level of the Grand Master faders (or submasters set to the GM Grand Master mode) is taken into account when you press the Record key - so, whether if you pull the masters to 0 and press Record you record a blackout, or the state as you had it before you pulled the masters down.

## Display Options

This set of options define how the console talks back to you!

### **Display Language**

Is fairly self-explanatory. For English-speaking console users, the Russian setting is particularly useful for scaring new console operators....

### **Auto Channel Page**

If your screen is showing channels 1-100 and you select channel 300, does the display jump to the screen showing the 300s or not.....

### **Channel Formatting**

This lets you decide which channels you want to see on your screen - all of the channels in your show ('off'), just the channels which have changed in the current cue ('compact'), just the channels which are in use in the show ('chans in show' or 'auto'), or your choice of channels ('display group').

### **Channel Display**

This allows you to choose how channel levels are arranged on screen. The modes are named for a variety of older Strand consoles, but they basically define whether channels run horizontally (Genius, LP) or vertically (Galaxy, Gemini), how many channels fit across and down a screen, and whether or not colour attributes are displayed (the '+' modes display colour attributes). LP modes arrange channels 20 across; Genius 25 across. Some users prefer the Galaxy and Gemini modes because they always show the whole channel number; they also have the advantage of showing a colour name (if you've set colour using reference groups) rather than just a colour frame number - the Preset mode also shows this information in horizontal format, though it's limited to ten channels across the screen, while Control is a very scary looking display that tells you how each channel has got to its present level (ie. from a playback, a manual channel control, a hand-held remote or a submaster)..

### **Smart Channel Display**

This selects what happens to the channel display when you choose a moving light - 'off' means the display doesn't change so you see all the channels but can't see the attributes of the moving lights (other than in the channel control area next to the cue-list on two-screen consoles); 'tracker' will show you the values of all of the attributes but not the reference groups they are set to, which means you can see twenty moving lights to a screen. 'Tracker preset' shows all the attributes with the names of the preset groups if you are using reference groups, but this means it can only fit five lights across the screen. In this display you can see reference group numbers as well as names by pressing [Shift]-[Group Display]; pressing the same keys again will show you the reference group name with the actual values stored in that group, pressing again will return the display to normal.

The Tracker and Tracker Preset displays will adapt themselves to show the attribute of lights as you select them in live; they won't in preview, so you need to get into the habit of selecting the channel you want to look at before jumping into the preview displays.

With Channel Formatting set to Off, the console will only show the channels that have actually been created as part of the show - remember that, unlike some consoles, you can create or delete any channel numbers you like rather than being limited to channel numbers 1 to 600.

The other options give you more control of what you see according to taste - for example, the compact option will fit more of your show channels onto your screen (since only those that have just changed will be shown; remember also that running or cutting to a cue will show changed channels relative to the previous state on stage while using goto to get to a cue will show changed channels relative to the previous cue in the cuelist), but will annoy some because this means that the channels will move around the screen. Display group is particularly useful when you never need to see certain channels (the non-dims controlling moving lights, perhaps), or want to look at channels that are some way apart side by side, particularly in the XREF spreadsheet view; Display Group will only show channels stored in the \*Display special group (group 994.1-994.4), and there is a separate Display Group for each console in a multi-console system. Chans in Show and Auto achieve the same result but in different ways, Auto automatically putting the currently used channels into the Display Group. .

# Console Programming Tips (continued)

## Live Screen Layout

This governs what you see on your cuesheet screen - just playback, just subs, just effects or any combination. A quicker way to step through these without having to go to the setup screen is to press Shift-LIVE to cycle through the various options.

## X Playback Format

These options make the cue playback more English or traditional Light Palette like - whether you see the words 'Q' and 'Time' or not, where the wait time appears. Again, try for yourself and pick the one you prefer!.

## X Playback Colours

These provide different ways of highlighting the current, running and next cue. Try them for yourself and see which you prefer!

## X Playback Order

'History+Cue Sheet' shows cues as they actually ran, 'Cue Sheet' shows how they are programmed to run. Usually this shows up when you cut to a long cue and the lighting designer asks why you've changed it to a two second cue, which is what shows up on screen if you're in 'History' mode..

## Show Last Recorded Cue

Defines whether the console shows the last cue you've recorded (at the bottom of the live cue list) or not..

## Screen Menus

Defines whether the softkey functions are shown at the bottom of the command line or not - this is particularly useful on 520 and 300 console which don't have LCD displays for all of the softkeys, and on off-line editors which don't have LCD displays at all. If you need to, you can see the contents of the LCD displays on an off-line editor by pressing [ALT]-[ESCAPE]; the same command again toggles back to the normal display..

## Preview Follows Live

You're in cue 10 live. You go into preview, go up to cue 1 and make some changes. You go back to live. You run cue 11. You switch to preview. Do you see cue 1 (which you might want if you were making changes in blind while waiting to make more changes live), or cue 11 (because you want to make changes to current cue but in preview, or want to check how changes you make will track on through the show)? If you're in this set to off and you do want to preview the current cue you can type [CUE] [PREVIEW] to achieve this..

## Default Times

This is where you define default times for when you record cues or carry out other actions on the console. Cut is probably best set to a few seconds if you're using moving lights so that they don't get thrashed as you jump around the show; Undo Time is best set to a few seconds so you can undo level or position changes gently: typing [channel number(s)] [UNDO] will run a channel back to its last cue position over the specified undo time..

## Console

This area lets you control the hardware setup of your console - the number of screens (1 as standard on a 300 or off-line editor, 2 as standard on 500-series consoles, but up to 4 if you install extra video cards in your 500-series console), the LCD backlight and contrast, and the slightly inaccurately named Buzzer Volume (since it can only be on or off!)

Macro tablet is how you tell the console you're using an external tablet to run macros, a useful way of controlling rigs or selecting moving lights and their reference groups - the tablet can either be plugged into the console itself or into a node on the network (for example, with the lighting designer at the production desk). Mouse allows you to plug in an external mouse, most usually on 300-series consoles (-how do you get to this setting on a 300-series if the mouse option is turned off? Hold down shift-0 to put the console into Cursor Lock mode, then use the 4, 5, 6 and 8 keys to move the cursor around).

Console Keys Layout is a very old option to deal with some very early consoles that had two blank keys instead of a QONLY/ TRACK key.

Submaster layout lets you decide which set of faders match which set of submasters if you have more submasters than physical faders - for example, if you have a 550i console as your main console and a 520i as a remote you could choose whether the 520i's 24 faders controlled subs 1-24 or 25-48.

GeniusPro/Palette switches the console between GeniusPro, Strand's console operating system for Europe, and LightPalette, it's console operating system for America. The two systems are very, very similar indeed - same showfiles, same commands, same options - differing just to suit the expected norms of the European or American markets: white or cyan channel numbers, Spreadsheet or Cuesheet view by default in preview). Generally a console will have this option set to 'Default' and will pick the normal version for the market it's sold in. If you ever get to your console and find it not quite behaving as you'd expect it to, this would be the first option to check!.

**The moral of all this is: play! Try the options. See which suit you best: apart from the issue with macros if you change Channel Control Mode you won't affect the way your shows play back. But when you find the combinations that suit you, you will find yourself working faster. Which is surely always the aim!**

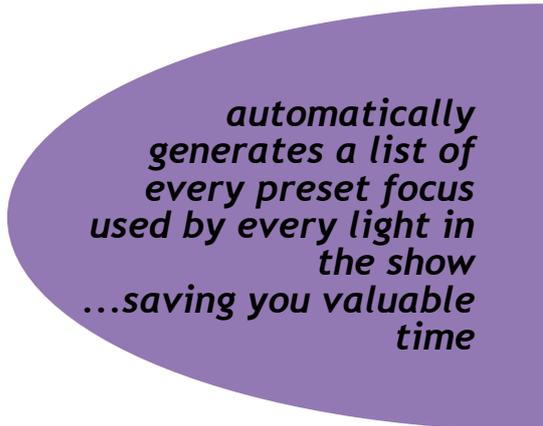
# Focus Track *by Rob Halliday*

**Strand's 500-series consoles are well-proven in the field of controlling large-scale theatrical productions; over the last decade they have provided lighting designers and lighting programmers with the tools they need to create and modify complex, demanding shows.**

However, production electricians and programmers have long complemented the console's built-in facilities with other tools, such as Lightwrite for documenting the show's lighting rig. With the increasing use of automated lighting in productions of all scales, a new task was the need to document the focus of the moving lights in a show, particularly if that production was to tour or transfer to another venue.

Different programmers have used a variety of techniques for this, but the slowest part of the process has also been figuring out which lights are used in which positions in which cues in the show. At worst, this meant trawling through the showfile 'by hand' making lists of what was used when. This worked, but was tedious. Too tedious, on big shows - and exactly the kind of tedious work that computers are good at, so why not let the computer do the work? The result is the system now known as **FocusTrack**.

Now, when a show is nearing completion I take the showfile and feed it in to FocusTrack. It automatically generates a list of every preset focus used by every light in the show; it can then show the programmer a list of every preset focus used in the show, which lights actually use that preset focus in which cue, and which attributes are stored in that preset focus. Users can then add other data as required - descriptions of where the light is actually pointing and why it is pointing there, a digital photograph actually showing the light in that focus on stage. FocusTrack will also keep track of changes as the show evolves, flagging up new focuses, focuses no longer used and even focuses whose position on stage has changed.



Group Name	Group Name	Focused?	Contents	Type	Chan	Use	NEW only	Engineer entrance	265	NEXT CUE >	Coto
535	C Dress Room	<input type="checkbox"/>	P		11	X to SL, straight edge at SL for dr room wall			264	Moulin Dress Room	Moulin Dress Room
535	C Dress Room	<input type="checkbox"/>	P		14	X to SR, straight edge at SL for dr room wall			264	Moulin Dress Room	Moulin Dress Room
535	C Dress Room	<input type="checkbox"/>	P		3	Front into C of Dr Room, catches trunk LIS			263	Moulin Dress Room	Moulin Dress Room
503	New Dr Room	<input type="checkbox"/>	P		03	Candle top to table GL			263	Moulin Dress Room	Moulin Dress Room
426	Dress Sides/Moulin int	<input type="checkbox"/>	U		19	X to top of SR trucks, keep above dr room			263	Moulin Dress Room	Moulin Dress Room
563	New Dr Room	<input type="checkbox"/>	P		83	X into Dr Room table SL & window			263	Moulin Dress Room	Moulin Dress Room
563	New Dr Room	<input type="checkbox"/>	P		724	Tan in hole US, off set US			263	Moulin Dress Room	Moulin Dress Room
563	New Dr Room	<input type="checkbox"/>	P		725	Backl thru SL dr room window			263	Moulin Dress Room	Moulin Dress Room
535	C Dress Room	<input type="checkbox"/>	U		4	Gobo front into dr room			262	Moulin Dress Room	Moulin Dress Room
426	Dress Sides/Moulin int	<input type="checkbox"/>	P		78	X to top of SL trucks, keep above dr room			262	Moulin Dress Room	Moulin Dress Room
563	New Dr Room	<input type="checkbox"/>	P		7	X into SR Dr Room basket and wall			261	Moulin Dress Room	Moulin Dress Room
514	Dress Neon Signs	<input type="checkbox"/>	P		71	X to neon signs			261	Moulin Dress Room	Moulin Dress Room
535	C Dress Room	<input type="checkbox"/>	P		53	Topl DS dr room <b>Kini Tan</b>			253	Bangkok	Signs, restrooms

Focus List

Since FocusTrack also knows about the cues in the show it can also then list all of the lights used in a cue, or just the lights used for the first time in that cue, making it an ideal tool for re-focusing lights during a dress rehearsal on tour; the system even allows programmers to keep a record of which lights they've re-focused and which they've still to do.

For Apple Macintosh users who use VirtualPC to connect their laptops to their computers remotely, FocusTrack can even control the console directly, setting lights to the right position ready to re-focus or stepping through each light in each position as each focus is recorded photographically, so saving the user a great deal of typing.

FocusTrack has already saved me a phenomenal amount of time on Guys and Dolls, Mary Poppins, Miss Saigon, Highland Fling and other shows, and has been put to use by others on Billy Elliot, The Woman In White and at English National Opera.

*If it could be of use to you, it's available now: find out more at the FocusTrack website, [www.focustrack.co.uk](http://www.focustrack.co.uk).*

FocusTrack

Pic List

# Cheat Sheets...is it really cheating?

by Bobby Harrell

I have observed the shift toward a cinematic design approach over the last several years. Spawned by director's demands and audiences increased expectations, lighting manufacturers have responded with feature rich fixtures and consoles to control them. Since console manufacturers can't change their hardware every year, that gives them the responsibility to change the software as new features are needed.

Now that the 500 series is nearing 10 years in its development, it reminded me of just how many features there are in these desks. I also realized that many programmers either, don't know that some of the advanced features are available or, once found, can't remember where they are when needed on the next production. This has led me to creating cheat sheets for the consoles.

Whether you are looking for features or learning the console, use the 500 Command Cheat Sheet. The sample sheet below shows the commands for the Action tile. Notice that the blue tables represent the soft keys and the clouds represents the command for the Shift version of the key.

## 500 Series Command Cheat Sheet

### Action Tile

Modifies recorded time without changing levels.

Accesses cue type options on soft keys.

SOFT BLOCK	TRACK THRU	HARD BLOCK	ALL FADE	INTS ONLY	ATTS ONLY
------------	------------	------------	----------	-----------	-----------

*UNBLOCK*

Globally defines sub bump buttons (see soft keys...the line is above the selected item)

FLASH	SOLO	FLASH+ SOLO	KEYS ON	KEYS OFF	KEYS LATCH
-------	------	-------------	---------	----------	------------

Changes Submaster Pages (6 pages available)

Assigns Cues to Playbacks (only single playback is available unless dual playback is active)

Assigns / Creates / Edits Profiles. 99 Profiles are available for dimmers, cues and fx.

Assigns Delay time to Cues

Fires or Records Macros

Wait time is the duration between the start of one cue and the automatic start of the next cue. (This automatic cue is called an autofollow.) (The wait is assigned to the previous cue.)

Records the entire lighting state without taking levels from subs that are active.

Records the entire state of the lighting system.

Will place cue on stage disregarding cue time.

Updates only changed levels (red text) ignoring levels from subs and fx that are running.

Assign / Edit Text to cues, subs, groups, and fx.

Holds a channel so that it cannot be stolen by cues, fx or submasters. Held channels will not be recorded.

*Shift HOLD is UNHOLD*

Sets or adjusts time. From 0 to 59:59 at increments of 100<sup>th</sup> of a second. Time can be set over a range of cues in a relative manner. (Cues 1 thru 5 Time +1 ENTER)

Shift accesses alternative key functions. Shift is only used in conjunction with other keys to give them advanced functions. (See balloons on this cheat sheet for shift functionality.)

Use the "I" key to separate up/down/attribute cue time or delay, fade profiles or fx times.

*DELAY*

Q Only / Track will allow the cue to be recorded in the non-default tracking mode. The default mode can be seen from the top of the cue list. If the console has tracking on, then this button will allow a cue to be recorded cue only. If the console is in cue only mode, then this button will allow a cue to be recorded to track.

*TRACKBACK*. Will allow tracking back to the source cue for level change. **UPDATE TRACKBACK ENTER** will Update the current cue to trackback in the default mode.

Strand 500 Series Consoles: Command Cheat Sheet Sample page of the 500 Series Command Cheat Sheet Software Version 2.8.6



# Cheat Sheets...is it really cheating? (continued)

This is a great way to unlock the functional knowledge of the hard keys on the desk and, especially, the shift commands. Many shift commands are a natural extension of the hard key itself. For example, while CUE will select a cue, SHIFT CUE will give you the command Update Cue. The other thing that shift does on many keys is give you the inverse of the hard key. For example, HOLD will lock a channel so that it cannot be stolen by cues, fx or submasters. (Also, held channels will not be recorded.) SHIFT HOLD will release all held channels or you can use a channel list in front of SHIFT HOLD, then only the channels in the list will

be released from hold. So, if channels 1 through 5 are held (1 THRU 5 HOLD) then you enter 1 THRU 3 SHIFT HOLD, 4 and 5 will still be held.

Since the power of the 500 series lies in the software, the softkeys play a major role in that power. Many times I find that an operator may know that a function exists but can't remember where to find it. In steps, The 500 Series Softkey Cheat Sheet will show you all the softkeys.

Just follow the arrows to track the flow of the softkey screens as some have many levels. All softkeys that

have another level will finish its text with ">". For example, press the DIMMER key and the last softkey is FILTER>. Pressing FILTER> will bring up the "filter" softkeys. Also, 300 series console users remember that the software is the same, so all the functionality is there for you too!



## 500 Series Softkeys Cheat Sheet

Input Tile

FULL	DOWN%	UP%	FLASH	BUMP	THRU ON
------	-------	-----	-------	------	---------

RE-PATCH	UN-PATCH	BACK-UP	AT CHAN	FILTER>	
HIGH DC	OVER LOAD	OVER HEAT	OUTPUT ERROR	LOAD LIMIT	TRIP
DELETE	LO/HI LEVEL	NEXT FX	STOP AFTER	STEP CTRL>	LEVL>
TIMED	AUDIO	MIDI	MANUAL		
NORMAL	NEGA-TIVE	RANDOM	NORM-NEG	NEG-NORMAL	
CLEAR	EXT SUB	INTS ONLY	ATTS ONLY	SUB FUNC>	
PILEON	INHIM	INDEP	EXCLUS	SUPER>	SUPER DMX>
SUB SUPER	FLASH SUPER	FX SUPER	GM 1	GM 2	
DMXIN CHAN	DMXIN DIMMER	MIDI RATIO	AUDIO THRESH	SOUND LIGHT	
DELETE		INTS ONLY	ATTS ONLY		
DELETE	RENUM	FROM	PART	LINK	LOOP

FULL	OFF	ONLY	ONLY	COPY FROM	DMX
Position	Color	Beam	Focus	Shutter	Shape



Strand 500 Series Consoles: Softkey Cheat Sheet

Software Version 2.8.6

A sample page of the 500 Series Softkey Cheat Sheet



# Cheat Sheets...is it really cheating? (continued)

Since many 300 series operators have no memory console experience at all, these operators are often more challenged than 500 series operators

and need more basic guidance. Remember that 300 series consoles can change mode so that they can become preset desks as well as memory desks.

This can add a level of complexity that is more than a new operator can tackle. This is where the Strand 300 Series Quick Start comes in.

**Strand 300 Series****Quick Start**

### Channel Control

The console defaults to channel mode. So just start by taking channel 1 to 100%.  
**1 ON:** Channel 1 to the ON level – Full  
**1 [FULL]:** Channel 1 to Full. (FULL is a softkey accessed by the arrow keys below the LCD screen)  
Now let's take another channel to another level.  
**2 @ 5 \*:** Channel 2 at 50%. The asterisk is the ENTER key. The ENTER key finishes off most commands.  
**3 THRU 7 @ 75 \*:** The THRU key allows you to do ranges. Assign levels to channels until you have the look you want. To release channel 3 type **3 UNDO**, to release all **UNDO \***

### Cue Recording

To store the look you want, record it as a cue.  
**RECORD 1 \*:** This command stores the entire lighting state as a cue to be played back in the default time of 5. (The Record function defaults to Cue.)  
Just repeat the process of assigning levels to channels (see Channel Control above) and record to any cue number you want from Cue 1 to Cue 600.  
You can also use point cues if you need a cue between whole numbers.  
**RECORD 1.5 \*:** This will store the entire lighting state as Cue 1.5. You can use any point number from .1 to .9.

### Cue Editing Live

When you want to edit a cue live that is already recorded, the first step is to be in the cue. **GOTO 1 \*:** This puts the cue on stage in a snap count. Now just edit your channel levels (see Channel Control above) and update the cue.  
**UPDATE \*:** This will take all channels whose levels are red and store their new levels in the current cue.

Where Update is valuable is that it ignores level from subs and effects.

### Time

Now let's change the time of Cue 1. **TIME 3 \*:** This changes time on the current cue. To change time on a cue that is not live just type, **CUE 2 TIME 2/5 \*:** This changes the time of a non-live cue. The slash key assigned it a split time. This means that all levels that are going up will fade in a 2 count. Levels that are going down will fade in a 5.

### Text

To add a label to Cue 1 while in Cue 1, just type **TEXT** (CUE 1 TEXT will show up on the command line) and just enter the label from the keyboard. To label a non-live cue just type **CUE 2 TEXT LIGHTS UP \***

### Shutdown

**{REPORT} {EXIT} {SHUTDOWN} or {EXIT AND RESTART}**

### Groups

Groups allow you to put multiple channels at different levels into a single item. Set some channels at different levels.  
**RECORD GROUP 1 \*:** This stores the entire lighting state as Group 1. Repeat for any collection of channels that you want quick access to.  
**GROUP 1 ON:** This will put all channels in group 1 on stage at their recorded levels.  
**GROUP 1 \* ON:** This will highlight all channels in Group 1 and then set them to the ON level.  
(Note: This is actually 2 commands)

### Submasters

Subs allow you to put multiple channels at different levels onto a slider for manual control. Set some channels at different levels. **RECORD SUB 1 \*:** This stores the entire lighting state as Submaster 1. Once recorded, the light above the appropriate sub will be on. Just slide the submaster up and down as needed. Repeat for any collection of channels that you want to control by a slider. The last fader panel (immediately to the left of the channel control panel) is your submaster panel.

### Patch

**[PATCH]** allows you to change dimmer assignment to different channels. The default patch is a 1 to 1 patch. This means that dimmer 1 is patched to channel 1 and the numerical match continues for the capacity of the console. (The capacity can be seen from the upper right hand corner of the patch screen.) To start fresh by unpatching all dimmers, type **1 THRU 100 @ ENTER** (where 100 is the last channel number) All channel numbers will now be dark grey. This means that all channels are still within the system but they have no patch. The patching syntax is "Dimmer @ Channel". For example, **2 @ 5** will patch dimmer 2 to channel 5. (@ will show up as @PATCH). As you go through and patch, notice that the channel numbers change from dark grey to cyan. This is the LightPalette color for a conventional channel that has a patch. Continue this process until the show is patched.

### Dimmer Check

From the Live or Patch screen, enter **DIMMER 1 ON**. This will take dimmer 1 to the ON level. A red flag will appear on the bottom right hand corner of the screen that says DIMMERS UNPATCHED. This means a dimmer has been given a hard level. You can now use **NEXT / LAST** to move up / down the dimmer list. This will take the previous dimmer out and advance to the next/last dimmer. When you are done with the dimmer check, just press **DIMMER DIMMER** to repatch all unpatched dimmers.

### Channel Check

From the Live screen, you can enter **1 ON**. This will take channel 1 to the ON level. Use **NEXT / LAST** to advance up / down the channels that are in your system.

for Software version 2.8.6**HARD KEY [SOFT KEY] {DISPLAY KEY}**Page 1 of 2

A sample page of the Strand 300 Series Quick Start guide

By following this simple guide, you get a quick and concise walk through of basic console operation to get you up and running quickly. Each box represents a complete thought or idea for an item. For example, the first box takes you through channel control. Here you learn the different ways of controlling channel levels...from ON to UNDO. Then it goes to cue recording and so

on. In addition to basic programming items it also goes through common theatrical processes like dimmer check, channel check and writing cues using the preset modes.

It's everything you need to get started as a new user to the world of Strand control.

As always, I can be reached as bobby.harrell@strandlighting.com if you have questions or comments. Download your copy of the cheat sheets today at [www.strandlighting.com](http://www.strandlighting.com). Just go to the support section. Happy programming!

# Strand People

## Beijing Office



*Mr Zhou Zi Qing, Mr Lee Bao Hua, Mr Stephen Yim,  
Mr George Mo (from left to right)*

The new Strand Lighting office in Beijing is now fully functional. The small team provide technical service and support to customers in China and the surrounding area.

## Exhibitions & Events

Visit the Strand Lighting booth at these exhibitions around the world and see what's new.

**IBC, Amsterdam, Netherlands**  
(September 9-13, 2005)

**PLASA, London, UK**  
(September 11-14, 2005)

**LDI, Orlando, USA**  
(November 11-13, 2005)

Strand Academy training events take place throughout the world. Visit our website for further information or contact your local Strand representative for details.

[www.strandlighting.com](http://www.strandlighting.com)

## Jürgen Wofleben celebrates 33 years with Strand Lighting Germany



In May our colleague Jürgen Wofleben celebrated 33 years with Strand Lighting Germany.

Jürgen's experience in the company varies from technician to Project Management.

He joined in 1972 as a mechanic and spent the first 10 years installing Strand equipment and systems throughout Germany with additional responsibility for commissioning.

By the mid-80s he had assumed responsibility for technical service and also become involved in projects with the introduction of the CAD-system notation for projects.

Since the move from Wolfenbüttel to Berlin in 1999 Jürgen has been exclusively responsible for all offers and tenders.

We wish him all the best for the next 33 years with Strand.

**The Strand Newsletter is published electronically four times a year. If you received a copy of this newsletter from an associate and would like to receive a copy directly please email us at:**

[newsletter@strandlight.com](mailto:newsletter@strandlight.com)

