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A CURE FOR APOPLEXY? (A Response to the letter from Kevin E
Mullery printed in the Sound Column of the Fall issue of TD&T)

By Charlie Richmond

 I'm happy to say that ever since MIDI Show Control (MSC) was
officially released in July, we've been busy explaining it and
showing people how to use it. We have really seen an explosion
in interest and application where money is spent more readily
than in regional repertory theatres: on Broadway, in theme
parks, gambling meccas, high-tech entertainment complexes, trade
shows and the like. There, as well as at a few forward-thinking
theatres, producers are discovering that the mix of live action
along with high tech makes an irresistible entertainment
combination.

 But enough of that - let's deal with the specific concerns you
brought up in your letter, point by point. First, you quoted me
as saying 'automation is best,' but that is not what I said
even though I _had_ attempted to make sure readers would not
misunderstand. 'Automated' is not a word I would apply to
equipment I would want to use in a performance. 'Programmable'
and 'Memory' are both attributes which theatrical lighting
systems have had for some time, and, as such, they are valuable
in all live theatrical applications.

 We're seeing more memory systems now - they're a lot smarter and
handle a lot more information than in the past. The same loyalty
that Lx designers and operators demonstrate for their favourite
memory boards can also be found amongst sound and rigging
designers and operators who have similar powerful tools. Now
Stage Managers and the rest of the crew can have the same
capabilities (and more) via a 'Memory Cuing System' (not 'Central
Controller' - an unfortunate phrase which should have disappeared
with Glasnost,) a term which hopefully conjures up the image of a
real live operator instead of some automated infernal machine
running the show with its own internal clock. After all, people
are not allowed in the proximity of automated assembly line
robots because they are too dangerous -- and it wouldn't be a
very interesting play if the actors weren't allowed on stage. I
still prefer the term 'Show Control System,' (SCS) though, and
will continue to use it, not because it _controls_ the show but
because it gives the SM powerful control _of_ the show.

 In your example of the SM giving a cue to the Lx Op, you say
there is someone free to sort things out: who would that be if
the Lx Op is operating the cue? The SM? With MSC the SM
executes the cue directly and the Lx Op remains free specifically
to monitor and effectively deal with any problems in the internal
operation of the cue, the system and the instruments. The SM
therefore stays in direct contact with the show and does not even
have to formulate alternative plans.

 In addition, if a malfunction is electronically conveyed back to

the SCS, the SCS can instantly present all valid alternatives available to the SM as a range of available choices. Panic is not necessary; a contingency plan is available and can be created for every conceivable technical difficulty. This is already being used to control one of the most complex live shows currently in production - a half-mile long multi-float parade complete with special effects, lighting and music - performing every day at a major theme park. Contingencies such as float breakdowns, sick or injured actors, audience disruption and myriad special events are programmed into the SCS as immediately available alternatives obtainable unobtrusively at the push of a button.

In my original article, I should have provided more specific details about the operation of the lighting cue which follows the light switch click, so here they are, using some of the commands contained in the most recently proposed version of MSC:

1. Upon the SM's command, the SCS asks the lighting console to stand by for the cue that will go when the actor turns on the light switch ("STANDBY LIGHT CUE X").

2. The lighting console responds to the request by displaying its standby status ("CUE X STANDING BY") to the Lx Op and the Lx Op may or may not (depending on the needs of the show) be required to manually acknowledge the standby status.

3. When standby is fully acknowledged by the lighting console, that confirmation is displayed by the SCS to the SM ("LIGHT CUE X STANDING BY").

4. When the actor physically 'clicks' the switch, the SCS, using an electrical circuit wired directly to the switch and utilized for this cue (and other cues using this switch), instantly responds to the switch click by sending "GO LIGHT CUE X" to the lighting console which then instantly responds with the lighting cue.

5. Since this lighting cue is a bump and not a fade, the lighting console also instantly responds to the SCS with a "CUE X COMPLETE" message. The result of this procedure is that the SM views on the SCS screen the message "LIGHT CUE X COMPLETE" virtually the moment the light switch clicks. All of this responds much faster and more accurately than a human could.

6. The next cue involving this light switch can easily be programmed to respond to it being turned off rather than on, in order to solve the 'problem' of being in the wrong position.

7. The SCS can also be programmed to flash a message such as "LIGHT CUE X NOT COMPLETE! ABORT?" if the COMPLETE message is not received within a specified time after sending a GO. The system then allows the SM to send an "ABORT LIGHT CUE X" message, to resend "GO LIGHT CUE X", or to simply move on to the next cue. Variable times can be set in each cue for detection of COMPLETE or STANDING BY messages, prompting the SM to respond by aborting, manually re-executing or bypassing the cue.

8. A simpler MSC command set also exists for uncomplicated communication between the SCS and the devices it controls; for example, basic GO commands without any required acknowledgments. The command structure need only be as complex as each cue requires.

 Here are some further examples of other potential technical problems and contingencies:

 1. If the actor fails to turn on the switch or if the switch contact fails, the SM can instantly execute the cue with the GO button on the SCS. If the SCS fails or if communication with the lighting console is severed, the Lx Op can manually execute the cue with the GO button on the console.

 2. As one of the main features of MSC, the SCS can be preprogrammed to anticipate such possibilities and can present to the SM a predetermined set of easily selectable choices.

 3. If something unanticipated occurs or if the range of choices is not adequate, it is easy to reprogram the SCS.

 4. It is almost impossible for the lighting console to interpret faulty communication with the SCS as a properly concatenated command to execute a cue. Where safety is a concern, mandatory exchanges similar to the example above are programmed in combination with manual interlocks to make unambiguous cue execution virtually fail-safe.

 My comments regarding the "time-lapse on technical cues in the theatre" were completely sincere and my intent was certainly not to slur the abilities of SM's. I honestly do not know how any SM, no matter how good their ability to "anticipate the cue to allow for operator reaction time," could possibly anticipate actors' movements so accurately that the resultant cue is always precisely correct. In my experience, the SM usually deliberately errs on the late side simply because they would rather call the cue just a little bit too late rather than far too early.

 The few times I have seen a cue go before the actor actually does the business, the result has been embarrassingly comical and quickly convinces the SM to wait until the business is begun; which of course is usually too late. In fact, most SM's I know find this aspect of calling cues somewhat nerve-wracking and are quite pleased to discover there is a solution to it. Although you question the ability to prove that this "new-fangled" technology is safe and reliable, venues which absolutely have to be safe make it mandatory. When lives are at stake, 'cost-effective' takes on a new meaning, even though it is not inordinately expensive.

 I'm not sure the theme park stories you have heard are current. I have witnessed many successful productions with an excellent record of safety and reliability. As an example, we worked on a show which involved many of the same performance elements that are found on Broadway or in West End musicals - but with a major difference: This show is presented continuously from early morning till late at night with only a few minutes between

performances. There is no time for minor set repairs much less major refits. The park is open 365 days a year with casts rotating on an hourly and daily basis. At the average rate of around 30-40 shows a day and 700 cues per show, this means calling 24,500 cues per day - 171,500 cues per week! Doing this without an SCS would be quite a task for even the best SM - especially without hiccupping!

 I certainly understand what you are saying about lessening enjoyment while being "hedged about by expensive equipment," but in situations like this, the SM needs some assistance to ensure sanity and reliability. The key to a good SCS is that it can provide such capabilities while still retaining your all-important "hands-on feel of the performance." And, believe me, these new theme park shows are absolutely live, with real actors, dancers and stunt performers all setting the pace of the performance with the music, lighting and special effects all taking their timing from them. In most cases, they are run as outlined above, with a human Stage Manager ensuring safety mechanisms are in place and proper cues are standing by. Wherever possible, the actor directly triggers the cue for maximum realism, safety and performance flexibility. When that cannot be done, the SM presses a fail-safe electronically interlocked SCS 'GO' button.

 Both Theatre Crafts/Lighting Dimensions and Production Arts Lighting recognized John Huntington's perceptiveness and forward thinking by hiring him; so maybe his was a Comedy Degree since he now gets to laugh all the way to the bank. In fact, actors can and do 'authorize' cues via 'radio buttons' although they aren't normally in their cuff links; but that does not mean they can walk around firing cues at random. It is always important that the enabling of technical cues be kept safe and under control at all times. Every button press must correspond with a preprogrammed cue, standing by in proper sequence before it will go.

 I'm not going to argue with your eloquent description of theatre as fantasy, even though I think theatre tries to portray a real version of make-believe as often as a make-believe version of reality. Whether this means theatre is real or make-believe is a moot point; in fact, it is a lot of things to a lot of people. What we are trying to do by making the technology easy to live with is to make it transparent to both the users (in this case the SM, the actors and the technicians) and the observers.

 Through the sophistication and intricacy of computerization, we try to achieve a homey, comfortable feeling surrounding the actors moving about the stage while technical things happen where, when and as they should.   We do not want the performers or audience to necessarily deal with or be aware of these technicalities. Neither are we asking the actor to manipulate "levers and cogs," unless, of course, their character is really doing that, in which case we normally want the result to be as realistic as possible.

 Finally, like you, I am concerned about the increasing proliferation of "canned" entertainment and will continue to do

what I can to avoid it. Giving performers the freedom to command the technology around them is my current passion and there is much support for our approach.

 As for SM's, they will probably continue to be a misunderstood lot - but you can be sure we'll try to understand them or otherwise, like politicians, we'd lose touch with our constituency. After all, in the theatre everybody knows you can't get anywhere until you can utter that famous phrase, "Some of my best friends are Stage Managers!"