

The Dynamics of Lighting Control

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a personal view of the art, craft and science of operating a lighting control.

Dynamics: of motive force; of force in actual operation: matter or mind as merely the action of forces. (O.E.D.)

Light, properly manipulated, has an intellectual and aesthetic effect on the brain that we cannot yet measure in terms of the real world, but one, nevertheless that can be interpreted as a degree of 'rightness' or harmony with the inherent or imagined spirit of the performance. This relates not only to the state itself, and its built-in psychology (blue is calm, relative brightness has a focussing effect, etc.), but also, and increasingly more apparently, to the precise way that the changes between the states are performed – the FADE DYNAMICS.

Now this is something rather different to cue speed or fade rate: more than just an obscuration here and a revelation there: and certainly more than merely making sure that the right light is in the right place at the right time. These are all vitally important. But the dynamic of a fade is something else. It is a way of working directly into the emotional centres of the mind itself. It is a process of constructing an empathy with the desired aims of the production by the manipulation of our attitudes towards a whole mass of our remembered experience and conditioned expectations. It is a means of reinforcing embryonic emotions and causing them to sweep through an audience: or of killing those emotions stone dead. Above all, it is sublime and can only be employed by one who can be, like a good actor, his own best audience and critical observer, and can simultaneously manipulate and be manipulated by his own actions.

We live in a world structured in a very different way to the one that our forbears perceived. The softly changing shadows and subtle intensities of nature, and even its raw power have been replaced by the aimless freneticism of our cities. Even in our homes television, especially television advertising, has brought us the concept of dynamic vitality as the normal mode of life. In fact television has made the fadein, fadeout and crossfade so much a part of our lives, that we almost seem to miss the ability to perform them in our daily routine.

This is our new nature; another nature, another mirror. Just as all great art in any sphere must spring from careful balances of dynamic and kinetic energies, so must we fine-tune our subliminal responses by the same care in our use of fade dynamics.

Much research has been done into the nature of how the brain perceives light and translates it into usable information, but virtually none into how the mind derives its

aesthetic satisfactions. It has been shown, however, that electrochemical activity in the relevant parts of the brain occurs only when the perceived patterns are undergoing change of some kind, the three most important being changes of intensity, colour and direction. During periods of 'no change' the neurons of the brain appear to function only in a low-level sample and hold mode which after a moment decays into a condition whereby image retention and concentration become difficult, and eventually impossible unless there is sufficient movement in the eyeball or the subject to refresh the image. (This is not the well-known persistence of vision effect, although it is related to it.)

It seems to me therefore that the majority of the effect that lighting has on us must occur during any change of intensity, colour or source, i.e. during the fade which establishes the state, or as a function of the apparent contrast between the present state and any previous state, including house-lights and tab lighting; or as the result of the physical substitution of one lit area by another. In the first few moments of the static state the brain must extract any available information, such as the time of day, the apparent source of light, the mood of the piece, weather conditions, and any of the usual parapsychological information built in by any good lighting designer. After this time the static state has one function and one function only. This of course is visibility. This function continues until the next dynamic occurrence.

What constitutes a dynamic occurrence? The answer is, virtually anything if it involves causing an apparent change of intensity, position or colour, and in practice this can mean not only a deliberately contrived change of light, but also an apparent change of light caused by actors or scenery moving in and out of light, a piece of live flying, or a change in colour contrast caused by the appearance of a costume of uncomplementary hue, or reflections from a piece of insufficiently broken-down glassware.

It devolves upon the board operator, as principal agent for the visual scene, to reproduce with total accuracy all the lighting balances as set by the lighting designer and, very importantly, to create and control the dynamics, and therefore to control the responses of the beholder. It is also necessary to monitor closely all the dynamic occurrences from other sources and adapt to them at least to the extent of minimising the unpleasant ones, and to attempt to integrate the rest into the scheme of things. A sensitive operator will instinctively feel the 'waves' made by the artistes,

the orchestra, the sound and the audience and modify his response so that the whole becomes something very much greater than the sum of the parts.

Just as the lighting designer is the expert in creating the lighting and colour balances and in defining the fade rates and dynamics, the operator should be the expert in working them to best effect and in interpreting the intentions of the designer. In an ideal world the operator would be a fully trained and experienced professional, not just (as often as not as the run progresses) any odd member of the L.X. team that happens to be available. Obviously there ought to be a bond of trust between the operator and the designer, but here a problem of communication often arises. In no other field of art does the creative artist find it necessary to abandon the product of his art into the hands of an unpredictable, motley bunch of people (who range from the utterly brilliant to the utterly incompetent) and expect to have them reproduce it as *an original work of art* eight times a week with no more instruction than can be defined by the use of the English language and a handful of numerals, if that vital spark of non-verbal communication is not present. I can remember with despair how I attempted to get a thoroughly competent but unimaginative operator to phrase a series of lighting changes to the cadences of a piece of poetry: a cue sequence which should have been magic but was eventually cut by me as meaningless because the operator could not see them as anything other than six cross-fades in a row to be done as neatly as possible, on cue, and accurately. What could I say to him, this wizard of the Grandmaster? What could he make of my odd, personal, private and very vulnerable knowledge that if the cues were to be done *just so*, I could help the poet to reach his hearers to the point of inducing tears?

Sooner or later, every operator of someone else's lighting has to meet with lighting so inappropriate, and so disgustingly ghastly that he has to either close his eyes and hope to God that he doesn't have any friends in the house, or refuse to do the cue. No operator can take the latter course and expect to keep his job under most circumstances, but occasionally one has the opportunity to do what one can to make the transition from one undesirable lighting condition to another relatively painless. What can you do when there is a requirement to fade down from 'too bright' to 'too dark' in too short a time? Obviously you must do the cue as given, *and as best you can*. If it becomes apparent to the lighting designer that the cue is not working he will take steps to correct it. If correction is