

may or may not be unattractive. Added to which, the apertures would create diffractions which would play ducks and drakes with the colour. It is probable that we can feed our optical fibre bundle into the inside of a converted 8" fresnel lantern, with the dimming units inserted at some intermediate point between the lamphead and the source, which would enable us to retain a degree of control over the colour.

Found in every electrician's (and indeed every master gasman's) workshop until not too many years ago was the very useful **moonbox**. Hung immediately behind a gauze it gives a good impression of a watery moon. Hung too far behind a gauze, it gives the impression of two watery moons. One of our leading provincial companies fell into this trap in their production 'Waiting for Godot' and I spent the (mercifully short) time between the fall of night and the descent of the house tabs gazing in rapt wonder at the sight of the moon exhibiting astronomical irregularities as the moonbox, (seen separately from its image projected onto the gauze), swayed gently to and fro, back and forth across the night sky as a result of being flown in a little too enthusiastically. I don't think it was *supposed* to be a Brechtian-style alienation effect that was intended. Obviously to prevent double images the moonbox must be slap up against the gauze.

Most moonboxes consist of a circular cutout in a box with a light source in it, or several, heavily frosted. Although this can give a realistic impression of the craters of the moon, frost it how you will, the effect is generally blotchy. Many people use a fresnel lamp at low check in this position. This looks very good from the production desk, but not from some of the peripheral seats, especially in those theatres where there is a deep Dress Circle. Because a fresnel lantern is designed to throw a beam with a big difference of light output along the axis of the lens compared to the very ill-defined edge of the beam, those who view it from an acute angle, apart from seeing a foreshortened view, will perceive it very dimly, while those in the centre of the beam will see it distractingly brightly. At low check, not only do the rings show, but the apparent beam angle decreases and the filament reddens.

A workable, if crude, system is shown in fig. 2, in which a hacked-about old type 23N front was fitted to a CCT 'Minulette'. The inside of the plano-convex lens was sandblasted, and the N-tube was internally sprayed white. This was quite successful when poked through a hole in a cloth, and would probably work okay behind a gauze. I would actually have preferred to have used a larger lens, in retrospect, but they don't grow on trees. Perhaps one could be cast in resin, if heat is not a problem, and the sandblasting can be replaced by a bit of diffusion medium. The view from the side seats was almost as good as the view from the front as the light escaped from the lens in all directions, and the curvature of the lens ensured that the oblique view was not unduly foreshortened.

Up until now, we have talked of

brightness. *Intensity*, of course can be simply and predictably adjusted merely by altering a fader lever or equivalent, and can be accurately measured with a variety of direct-reading devices. *Brightness* is an experience. It cannot be measured with any instrument known to man, is never the same twice running, and is dependent on a number of parameters, including the amount of light falling on the retina, the amount that has fallen on it in the immediate past, the state of adaptation of the eye, and of the contrast between the lit areas and the nearest brightness difference boundary. In a lighting situation such as is produced by the Linnebach, the shadows cast by scenic elements and actors are very black: therefore the lit areas look very much brighter than they would if illuminated by the same total intensity of light from two or more discrete sources, or from a single but much larger source.

In many cases the contrast boundary is the proscenium arch. If we can minimise this contrast between stage and auditorium, we can actually use higher intensities so that we can see faces, which as any good actor will tell you is doubly important in dark scenes, if he is not to have to raise his voice, which is the last thing he wants to do in a low metabolic-rate focussed scene. I suppose in theory we could put in a line of white chaser lights round the pros. arch. This would certainly decrease the apparent brightness on the stage. Unfortunately it would also decrease everything else, including audience figures, actor's tempers, my chances of ever working again, etc. In many theatres the maintained lighting and exit boxes do quite good enough a job in this respect anyway. A very much better way is to feather the edges of the lit scene so as to remove any sharp, distinct boundaries to the scene. This means very close liaison with the director in the very early stages of rehearsals, to avoid any unpleasantness that might accrue from the Director having plotted a long scene with an actor lounging nonchalantly against the pros. arch, or with his feet in the pit. It also helps if the actors actually know in advance which direction the moonlight is going to be coming from, so that they can motivate their performances accordingly. (She, elated holds her arms and her face to the moon, while He, with secret to hide keeps his face in the shadows.)

A good designer/operator will use his own eyes and dark adaptation rate as a guide to keeping the subjective brightness levels relatively constant by fiddling the overall levels. The superficially simple business of fading up a low-light moonlight scene from a blackout may actually be quite a carefully controlled sequence of moves, involving raising the master to say, level five in the plotted time, most of such time normally to be spent 'feeling it in', then pausing to let the impression that it is a dark scene sink in, and following on to full over twenty seconds or more, and immediately following on by taking the master down again over some indefinite long period to a much lower level. The idea is not so much a regular fade down, as on a ratefader over a fixed time to a fixed level,

but rather aiming to be continually aware of the apparent increase in brightness as the eye adapts, and subtly compensating for it from time to time. This is really a case of running down an up escalator, just to stay still! Any cue, brightening or darkening for specific purposes is extra, over and above this. The constant to aim for is the degree of visibility originally envisaged for the scene. Do remember, however, to allow for the fact the operator's perception of relative brightness will be affected by the board light and any illuminated buttons, and that a greater number of exit boxes and maintained lighting units are visible to him than to an average member of the audience. Remember also that the level of light that he sees is attenuated by the window. In some theatres, it is a total mystery to me how any light gets through at all, what with double or thick wired glass, often at just the right angle to act as a vanity mirror, and more often than not covered in a heavy layer of nicotine laden dust.

The sight of a real live glowing moon rising in the sky, or glimpsed through some Gothic Arch has delighted audiences since at least the year 1662 when used in 'The Adventures of the Five Hours'. In 1853 at Saddler's Wells, Phelps made use of a transparency Diorama, that is, a painted cloth running from one roller to another, masked out at the back with black paint over the whole area, only excepting a small moon-sized circle, which, backlit with limelight, created the effect of a moon being 'seen to rise, to shine between the boles of the trees, to be partly obscured by moving clouds, and then to swim as it were, over and through the trees'. Nowadays, we would make this effect with a wide variety of standard projection devices, and very effective they are, too. De Louthebourg, Garrick's designer created just about every possible effect of night and day, sun and moon, with or without stars. Later, at the Lyceum, Henry Irving, doubtless secure in his personal moonbeam, gasped for mercy as the menacingly advancing shadows cast by the moon threw the body of the murdered Nemours into sharp relief, while at Her Majesty's, rabbits frolicked by the light of the moon, as Herbert Beerbohm-Tree's dancers waited apprehensively in the wings, dreading the coming of the dawn and with it their nightly scalding as early morning mists were being prepared to be pumped in from the steam-kettles in the kitchens of the Charlton Hotel next door. C. Harold Ridge, writing of the celebrated Cambridge Festival Theatre in the late 1920's, describes painstaking hours of work with sheet metal and crude focus lanterns to create a pair of matching but different rugby football shaped goboes to produce the striking effect of an ivory moon turning blood red. (a working model of this scene is on view at the Science Museum and is fascinating to anyone even vaguely interested in colour mixing.) In 1980, 'On The Twentieth Century' at Her Majesty's featured a gobo'd crescent moon wobbling it's way across the stage on an electric motor as a 'passage of time' device. And so it goes on. Now, as then—if its a braw, bricht moonlicht nicht, ye're a' richt.