Allocating every luminaire its own socket and dimmer and allowing access to them through a keyboard on the control, makes it possible to identify all the sockets numerically according to their position in the theatre. Thus luminaires at the back of the auditorium are numbered between 0 and 100, the first bridge 100 upwards, the second bridge 200 upwards and the third bridge 300 upwards and so on. The upstage lighting bar's first lamp is identified as 901, while the top lamp on the upstage left ladder will be 961 and its opposite on stage right 971. Thus the position of every luminaire can be immediately identified by its number.

Lastly, there is the problem of luminaires which are very difficult to reach for refocusing, for example, those flown over the stage. For some time, it has obviously been absurd that we have a computer to control the intensity of light, while we can only move the luminaire itself by getting out a pair of steps and by applying a spanner. A great deal of work has been done on the development of remote control luminaires, all aimed at reducing the cost per unit. Sadly the day has not yet arrived when costs have come within reasonable bounds. However, the Olivier Theatre will have a small quantity of remote control focused units and Lightboard is capable of controlling and memorising them, or any others that may be added in the future.

Lightboard consists of a main control with two VDUs above. A portable control to the right, with its own VDU, may be set up in the stalls for lighting rehearsals; and to the far right is the Orientation (remote control) panel. Between the VDUs in the centre, is a communications panel, and on the left and right, tape and auxiliary controls.

The main control consists of two parts, the "Palette" to the left and the "Play-backs" on the right. On the Palette, lights are mixed and then balanced and the results recorded, The two Playbacks have some similarity to DDM, and are called the Green and Red Play-backs. Between them is another numerical keyboard which is used to select a cue (or memory) onto either Playback. The Stalls Control is effectively a duplicate of the main Palette and could be used in the control room for an exceptionally complex operation, or if the designer wished to modify anything during a performance (see Fig. 1, the Stalls Control removed).

The Palette itself is divided into two (Fig. 2): the Setting Panel which gives through its keyboard and controller access to any light or group of lights at any time, and the Sub-Masters, to which any picture can be transferred and balanced as required.

Figure 3 shows the Setting Panel with its keyboard and controller and some ancillary controls above. To the left of the numerical keys can be seen three buttons entitled "Socket", "Cue" or "Group". These allow either an individual socket or a pre-recorded cue to be selected. Selection of "Group" calls up the sockets in any chosen pre-recorded cue but ignores the *levels* recorded in that memory. It simply allows the chosen sockets to be moved up and down proportionally. This means that if, while lighting, one has called up a cue and then subsequently altered the level of the circuits within it to achieve a new picture, one can subsequently call up the same memory number, but as a "Group" and then increase or decrease the intensity of the constituent circuits without sending them back to the levels at which they were
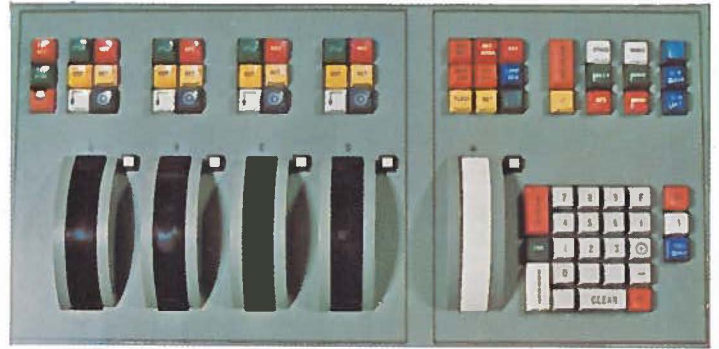

Fig. 2. Palette.

originally recorded.

As lighting is called up on the Setting Panel, it is displayed on the lower part of the VDU above (Fig. 4). All the sockets making up the lighting on stage will be displayed on the main mimic across the two screens (up to 140 on each). Once the
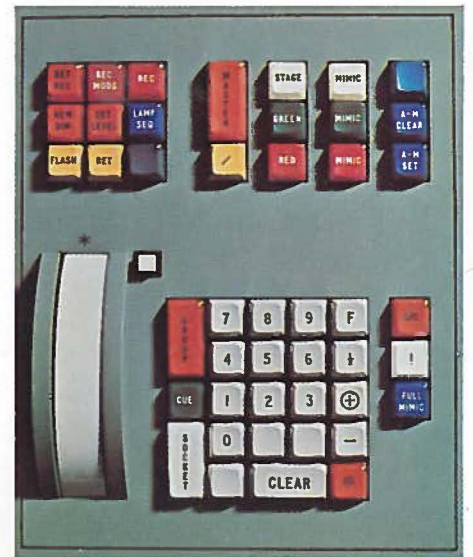

Fig. 3. Setting panel.

socket, cue or group has been selected on the numerical keyboard, the lighting may be moved by moving the white controller on the left. Alternatively, the keyboard itself can set the level of light required by using the "at" ("@") button. For example one could select socket 21 @ five. This would bring socket 21 immediately to level five. Subsequently, one could press plus (+) two. This would increase the circuit to level seven. The keyboard may be used to call up Cue 27 minus socket 21. In this case, the cue would fade in under the controller or the @ button, but without the circuit excepted. Similarly Socket 98+121 +232 would bring in all three sockets together. The use of the keyboard in this way allows lighting to be built up very rapidly. When something useful has been achieved, a cue number can be chosen and the result recorded on it. The lighting thus obtained can either be parked onto the main stage store while the operator carries on with the creation of a new picture, or it can be transferred to one of the Sub-Masters (Fig. 5). Thus a "block" of lighting can be put onto each of four Sub-Masters, and balanced proportionally against the others

Fig. 1. Lightboard with stalls palette and VDU removed (see inset).