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THE USE OF THE CONTROL WHEEL
IN LIGHTING CONTROL SYSTEMS.

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1. INTRODUCTION

The Control Wheel has been designed as a flexible control for a number of functions in lighting control systems. This report briefly describes the construction and advantages of the unit.

2. DESCRIPTION

The Control Wheel consists of an edge mounted continuously rotatable wheel coupled to a digital encoder. The edge of the wheel is 'dished' and engraved to provide a convenient operating surface. It is of translucent material permitting internal illumination to indicate an active state. Side 'Cheeks' ensure that the wheel cannot be accidentally operated.

Rotation of the wheel over the quadrant which projects through the control panel is equivalent to a movement of channel level from 0 to 10.

The wheel can be used to control level or other functions by moving it backwards or forwards with a finger in a similar manner to a conventional fader lever.

3. OPERATIONAL FEATURES

- (a) The Wheel can be used to control individual channels, groups of channels or complete cues in exactly the same way.
- (b) Individual setting, modification and override can all be carried out without the necessity for matching, since the wheel is essentially an incremental control with no fixed datum.

- (c) A number of channels can be grouped onto the wheel at the same or different levels and the channels controlled together. The wheel is the only form of control that offers a satisfactory solution under such circumstances. A conventional positional fader cannot execute complete control nor provide meaningful positional information. It is feasible to provide either proportional or 'shaft mastered' control of the group of channels with a suitable control system.
- (d) The wheel can be used as a proportional master for a cue in a similar way to that used for group control.
- (e) The wheel can be used as a control to override (speed up, slow down or even reverse) an automatic fade.
- (f) When used for channel control, in conjunction with a push button keyboard for channel call-up, the control of channels is entirely "heads up". There is no necessity to feel for a fader lever.
- (g) The speed of channel access is better than a servo fader lever since there is no necessity to wait for the servo fader to reach its matched level to avoid a jump in lighting level.
- (h) The operational feel of the wheel is superior to a servo fader. The wheel is always smooth in operation and has no takeover problems. There is a limited and controllable inertia which assists in making smooth changes.
- (i) A detent is provided in the side cheeks which gives a tactile reference to enable the operator to readily return to an original level.

4. TECHNICAL FEATURES

- (a) The wheel is directly coupled to an encoder so that there are no mechanical linkages or gears.
- (b) The output of the wheel is essentially digital, thus simplifying the electrical interface with a digital control system.
- (c) The complexity is low giving minimum cost and high reliability.