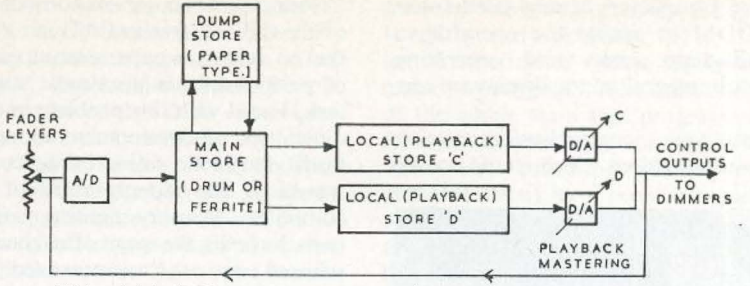

FIG.1. SIMPLIFIED SCHEMATIC OF IDM/MEMO-Q TYPE OF SYSTEM

usually be in the form of either a magnetic drum or a ferrite core assembly. Figure 1 also depicts a "Dump" store. When the Main store becomes full, it is desirable to "dump" one or a number of recorded shows on to either paper or magnetic tape for shelf storage. The Local stores being smaller (one cue only contained in each) would normally be constructed from transistor or integrated circuit elements, or alternatively would use a small ferrite store.

The other salient feature of the conventional type of equipment is the "hardware" logic concept. In early electromechanical systems, relay combinations were used in order to determine operational characteristics. When an action button was depressed, relay contacts would be operated and timing circuits activated in order to perform the required operation. With modern equipment, high-speed electronic circuitry is used to perform these functions, but the principles are still essentially the same, i.e. operation of the control button activates the appropriate electronic relays (logic) and causes timing and sequencing circuits to operate. Each of these circuits is designed for its specific purpose and any change required in the operational performance of the system, however minor, necessitates an alteration to the design of the manufactured hardware (i.e. printed circuits, wiring, components, etc.).

The adoption of a "hardware" technology has important ramifications. Firstly, the design of complex operational facilities not only becomes hazardous from the standpoint of development, but also, there is an economic limit on how much special purpose circuitry can be incorporated into an equipment in order to achieve a required specification. Secondly, the design of control boards to suit different operational requirements or to meet special functions demanded by individual users may necessitate radical changes to manufactured hardware. Thirdly, the only way to develop new systems and improve operational facilities is to be continually changing hardware. This clearly mitigates against standardisation in terms of works throughput, spares, stockholding, etc.

How therefore were we to meet the sophisticated performance requirements laid down in the specification for DDM? Before answering this question, let us examine the operational features which characterise this equipment. One of the drawbacks of the fader lever in a memory system is that when one requires to modify a channel in playback the lever is unlikely to match the dimmer level as recalled from the memory and in consequence, before switching over, matching of level has to take place. If it is recognised that using a memory system the operator will seldom need to know the precise level of a channel, since he neither has to plot it nor manually to recall it using a plot, then it becomes possible to consider a non-positional channel control. One such device is the centre-sprung rocker tablet used for the two memory installations supplied by the then Strand Electric to the National Arts Centre in Ottawa. The rocker operated in conjunction with hardware logic made for that firm by Sperry and has been found to have considerable merit for the purpose of channel control. The rocker was therefore