

AUDIO ENGINEERING

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TECHNICANA

Magnetic Sound Film in Great Britain

Developments in the field of magnetic sound film in Great Britain are discussed by O. K. Kolb in an article appearing in the November 1950 *J. Soc. Mot. Pict. & Tele. Engrs.* Available in Great Britain are three types of film stock, the differences being in the width coated. The first has a coating for its full width, the second is coated only between sprocket holes, while the third is coated for half its width with magnetic material, the other half being coated with a zinc oxide-lacquer mixture upon which a trace of the sound level or envelope may be made.

A comparison of a medium hard American film, a British film, and a Continental

bulk erasing both the film and electromagnet are moved. The film rotates and the magnet is subjected to translatory motion.

The conclusions reached by the author bear out practices here in that it does not appear that magnetic recording will displace photographic recording for the finished prints. However, all the recording up to the final print will be magnetic, with its attendant ease of editing, splicing, and reuse of stock.

Theatre Sound System

The new Simplex XL theatre sound system is described in the May 1951 *J. Soc. Mot. Pict. & Tele. Engrs.* By B. Passman and J. Ward, the article not only describes

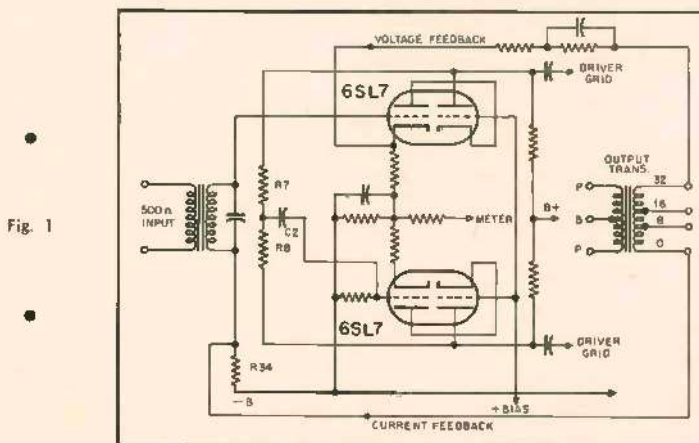


Fig. 1

film as to bias, level, and response are presented. The British film requires about half the bias that the American film needs for maximum output, while the Continental film needs almost as much bias as the American film. When a system is adjusted for flat response from the British film and only the record bias adjusted, the American film has 10 db higher output with a rising high-frequency response, while the Continental film is down 2 db from the output of the British product and has a drooping low-frequency response.

Splicing and erasing techniques appear to be similar to those used in the United States with the major exception that in

the equipment, but gives the design philosophy. Important system features include dual exciter lamps on a turret, 20-db pre-amplifier feedback, low preamplifier distortion, separate preamplifier for nonsynchronous inputs and standby, and a multipurpose power amplifier.

The nonsynchronous preamplifier has the same changeover features as the sound head pre-amps so that phonograph and line input facilities do not have to be designed and hawkeyed into the system by the installation engineer. Also it provides a spare unit for replacement in the sound head in case of failure of one of the plug-in pre-

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TABLE I

Preferred Maximum Sound Level in db above 10^{-15} watts per cm^2

| | Public | | Musicians | Program Engineers | | Engineers |
|-----------------|--------|-------|-----------|-------------------|-------|-----------|
| | Men | Women | | Men | Women | |
| Symphonic Music | 78 | 78 | 88 | 90 | 87 | 88 |
| Light Music | 75 | 74 | 79 | 89 | 84 | 84 |
| Dance Music | 75 | 73 | 79 | 89 | 83 | 84 |
| Speech | 71 | 71 | 74 | 84 | 77 | 80 |

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 Mary Howard Recording
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amps in the sound head during a run. The power amplifiers are unique in that they make use of cascode floating paraphase phase inverters, and have both voltage and current negative feedback to provide low distortion and stability without reducing the internal impedance of the amplifier. Two sizes of power amplifier are available, one using 807's and delivering 70 watts, and the other a low power unit using 6L6's and capable of handling 20 watts. The output tubes in both cases are driven by cathode followers. Figure 1 shows the cascode phase inverter stage. All of the rack- and wall-mounted equipment is designed for ease of maintenance, using either a drawer chassis that pulls out and turns over or doors giving access to terminal boards.

Specially designed loudspeaker systems have been provided to handle theatres of all sizes and for installation in drive-in theatres.

TV Audio Console

A new audio console for television studios is described by Robert W. Byloff in the June 1951 *RCA Review*.

A removable housing is provided at the back of the console to take five ten-inch video monitors, and panels are provided at each end of the console for auxiliary controls and patching. The main console panel has, in the top row, twelve microphone mixer positions each capable of being sub-mastered on one of three color-coded channels, and a VU meter. Above each microphone fader, therefore, is a translucent window. This is lighted with the appropriate color as the fader positions are switched by push button switches located on the left side panel. Also on the front panel, in the lower row, are the three color-coded sub-master faders, the studio master fader, remote master fader, and controls for studio playback and reverberation. Six lever keys provide switching for remotes, preview, sound effects filter, and auxiliary circuits.

The left side panel contains four auxiliary microphone faders in a separate mixer circuit, sound effects circuits, monitor controls, and the push buttons for assigning faders to the submaster circuits.

The right side panel includes a jackfield, a dropcord well, microphone equalizer controls, and a switch for selecting either limiting or compression characteristics in the program amplifier.

All the amplifiers, power supplies, relays and an auxiliary jackfield are contained in two separate racks. Placing this equipment in racks enables the size of the console, without the video monitors, to be reduced to 66 in. long, 23 in. deep, and 41 in. high. A desk in front of the sloping face will take legal-size paper without any overhang.

New electrical circuits have been developed for the console to permit the flexibility offered by submastering without excessive losses or change in level with switching. Distortion in the over-all system, at a signal level 10 db above normal program level, is below one half of one per cent while the noise is 77 db below the +10 level. The frequency response is flat from 30 to 15,000 cps.

Automatic Chime Sounder

The January 1951 *A.W.A. Technical Review* (Australia) carries an article by W. A. Colebrook on an automatic unit for sounding the Angelus and other bell sequences.

The unit is operated by a clock mecha-

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