SECTION I

GENERAL INFORMATION

1-1. INTRODUCTION.

1-2. This manual contains all information necessary to install, operate, and service the Model 994 7691 001 Stereo 5 Console. Figure 1-1 shows the Stereo 5 Console. The various sections in this manual provide the following types of information.

a. SECTION I, GENERAL INFORMATION, provides a description of the equipment, identifies the major components, lists operating parameters and specfications, and contains other pertinent information.

b. SECTION II, INSTALLATION, provides information relative to incoming inspection, power requirements, input and output connections, and mounting requirements.

c. SECTION III, OPERATION, provides identification and functions of front panel controls and indicators, and other information relative to operation of the Stereo 5 Console.

d. SECTION IV, PRINCIPLES OF OPERATION, provides a description of the functional circuits within the Stereo 5 Console.

e. SECTION V, MAINTENANCE, provides information pertaining to preventive and corrective maintenance, fault location, and equipment servicing.

f. SECTION VI, PARTS LIST, provides information for ordering replacement electrical parts and assemblies.

g. SECTION VII, DIAGRAMS, provides block and schematic diagrams and other drawings necessary for maintenance of the Stereo 5 Console.

1-3. EQUIPMENT SUPPLIED.

1-4. The Stereo 5 Console consists of front panel controls and indicators, chassis-mounted components, and a large printed circuit board containing the following circuits: four preamplifiers, four audio booster amplifiers, two audio output amplifiers, two monitor amplifiers, and one cue amplifier. An internal power transformer and two dual voltage power supplies are also included.

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1-5. DESCRIPTION.

1-6. The Stereo 5 is a stereophonic audio console of solid state design and printed circuit consturction. Featuring five mixing channels with monitor and cue capability, the Stereo 5 Console provides all necessary studio functions and facilities for the typical small FM station that

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broadcasts stereophonic programs. Selection of thirteen inputs include: four microphone inputs and nine medium level inputs for use with turntables, cartridge tape or reel-to-reel tape machines.

1-7. MIXING CHANNELS.

1-8. CHANNELS 1 AND 2. These channels are equipped with low-noise preamplifiers for use with low-impedance, broadcast type microphones. Each of these channels may select from two different input signals by means of a front panel switch.

1-9. CHANNELS 3, 4, AND 5. These channels are designed for medium level inputs and may be used with turntable preamplifiers, cartridge tape machines, or reel-to-reel tape machines. Inputs are selected by means of front panel switches.

1-10. PROGRAM, AUDITION, AND CUE SELECTION. Any of the five Mixing Channels may be switched to either the Program channel or Audition to permit independent monitoring or recording of incoming sources without disturbing programming. Channels 3, 4, and 5 have cue positions associated with the mixing channel key switches which provide signal to the amplified cue system. This signal can be monitored by an internal speaker or external headphones. All mixing channels include front panel, variable attenuators for setting output signal levels.

1-11. PROGRAM CHANNELS.

1-12. The left and right Program and Channels are identical. Each channel consists of a summing type booster amplifier, audio output amplifier, VU meter, and a master gain control. The master gain control, an internal adjustment, is preset at the factory to remove 16 dB of gain from the circuit which is the optimum setting for providing adequate operating margins of signal-to-noise and "headroom". The VU meter is a standard volume indicator used in conjunction with the mixing channel attenuators to establish a reference volume of 0 VU which is equivalent to an output level of +8 dBm. Left and Right Program Channel outputs are available on 2TB2 of the main printed circuit board.

1-13. AUDITION CIRCUITS.

1-14. The audition circuit consists of a single-ended output line designed to feed a 600 ohm line and deliver a nominal -20 VU with normal input levels. This output is an isolated, amplified signal from a booster amplifier which is connected to the audition bus of the mixing channel selector switches. Any input from the five mixing channels may be placed on this bus.

1-15. MONITOR CIRCUIT.

1-16. The monitor circuit consists of an audio output amplifier, gain control, and an input selector switch. The Monitor Gain control and the Monitor Selector switch are available on the front panel. The Monitor Selector switch provides selection of three inputs: Program, Audition, or

external source. The amplified outputs from the left and right monitor circuits are available on terminal boards 2TB3 (left) and 2TB4 (right).

1-17. CUE CIRCUIT.

1-18. The cue circuit consists of an audio output amplifier and a front panel gain control. The cue circuit receives all medium level inputs which are individually selected by placing the associated mixing channel key switch in the center position. The output of the cue amplifier is applied to cue speaker LS1 through muting relay 2K1 and directly to the cue headphone jack J2 which is located on the front panel.

1-19. POWER SUPPLIES.

1-20. The console includes two bipolar, unregulated, dc power supplies. Both power supplies provide a nominal $\pm$15 volts dc. The power supply associated with left channel circuits is identified by the symbol Ø; the power supply associated right channel circuits is identified by the symbol #. Refer to schematic 852 7854 001 for wiring connections. Both power supplies are contained on the main printed circuit board and receive primary power from power transformer 3T1.

1-21. MUTING AND WARNING LIGHTS.

1-22. A protective system of warning lights and speaker muting is provided to prevent acoustic feedback and broadcasting of a cue signal when live microphones are nearby.

1.23. SPECIFICATIONS

Equipment specifications are listed in table 1-1. These specifications are the performance standards, or limits against which the equipment may be tested. Table 1-2 lists supplemental performance characteristics. Supplemental characteristics are not specifications but are typical characteristics included as additional time for the user.

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Table 1-1. Specifications

MICROPHONE (Channels 1 and 2 to Left Line Out or Right Line Out)	
Maximum Gain:	100 ±2 dB
Frequency Response:	±1 dB, 30 to 15,000 Hz
Distortion:	Less than 0.5%, 30 to 15,000 Hz at +8 dBm output, 1% maximum, 30 to 15,000 Hz at +18 dBm.
Noise:	More than 70 dB below +18 dBm output with -50 dBm input. Equivalent input noise is better than 120 dBm, 30 to 15,000 Hz
Crosstalk:	Less than 15 dB above the rated Noise, with normal levels and control settings at 15 kHz
Microphone Impedance:	150 ohms, balanced, no C.T.
MEDIUM LEVEL (Channel 3, 4, and 5 to Left Line Out or Right Line Out)	
Maximum Gain:	60±2 dB
Frequency Response:	±1 dB, 30 to 15,000 Hz
Distortion:	Less than 0.5%, 30 to 15,000 Hz at +8 dBm output, 1% maximum, 30 to 15,000 Hz at +18 dBm
Noise:	More than 75 dB below +18 dBm output with -10 dBm input, 30 to 15,000 Hz
Crosstalk:	Less than 15 dB above the rated Noise, normal levels and control settings at 15 kHz
Input Impedance:	600 ohms, balanced
MONITOR CIRCUITS	
Maximum Gain:	Mic-Pgm-Mon Out 135 dB ±4 dB Mic-Aud-Mon Out 120 dB ±4 dB Med-Pgm-Mon Out 95 dB ±4 dB Med-Aud-Mon Out 80 dB ±4 dB Ext Mon-Mon Out 58 dB ±4 dB

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Table 1-1. Specifications (Continued)

Frequency Response:	±1.5 dB, 30 to 15,000 Hz
Distortion:	Less than 3%, 30 to 15,000 Hz at 6 Watts into 2.6 ohms
Noise:	More than 70 dB below 6 Watts output, 30 to 15,000 Hz
Crosstalk:	Less than 15 dB above the rated Noise, with normal levels and control settings at 15 kHz

Table 1-2. Supplemental Performance Characteristics

POWER REQUIREMENTS	
Line Voltage and Frequency:	117 V (as supplied)/234 V, 50/60 Hz
Power Consumption:	55 Watts Maximum, 13 Watts, no Signal
PHYSICAL SIZE	
Console:	30 inches wide(76.2 cm) 17.5 inches deep (44.45 cm) 8.5 inches high (21.59 cm)
Console Weight:	44 lbs. (20.0 kg)

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