

SERVICE BULLETIN

For

MODEL LC-21 STEREO CONTROL CENTER

SPECIFICATIONS

The following data was obtained from a group of 25 home-built units. They represent conservative performance specifications indicating what the average kit builder can expect if he follows all instructions precisely. It is the opinion of H. H. Scott engineers that most kits will exceed these specifications.

OUTPUT

Maximum voltage output .....	10 V.
Rated voltage output.....	2.5 V.
Rated voltage output to tape recorder .....	0.5 V.
Minimum recommended load resistance .....	100 K.
Minimum recommended cable capacitance.....	500 mmfds.
Maximum recommended cable length .....	20 ft.

INPUT

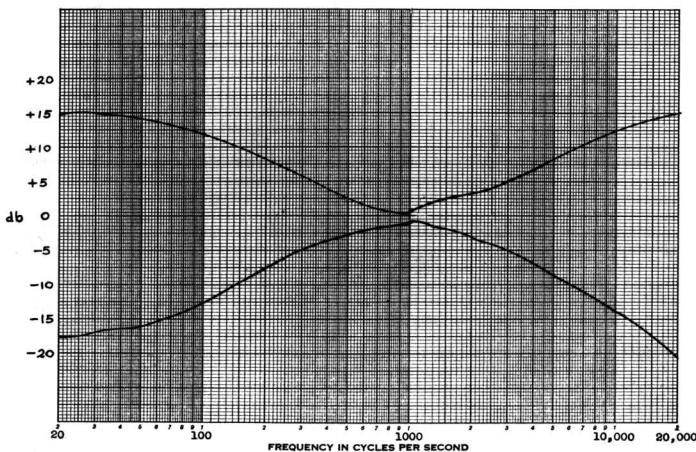
Mag. Low - Input impedance .....	47 K.
Signal for rated output.....	3 mv.
Mag. High - Input impedance .....	150 K.
Signal for rated output.....	9 mv.
High Level Inputs - Input impedance .....	500 K.
Signal for rated output.....	0.5 V.

FREQUENCY ADJUSTMENT & EQUALIZATION

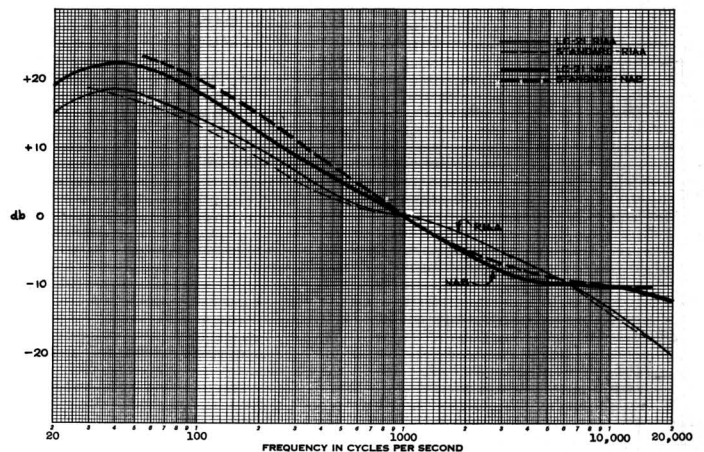
Frequency response in flat position .....	(Below 10 cps to over 55KC (within 1.0 db.
Treble controls measured at 10,000 cps boost or cut....	15 db $\pm$ 2 db.
Bass controls measured at 50 cps boost or cut.....	15 db $\pm$ 2 db.
Rumble filter .....	(Cuts 6 db per octave over (6,000 cps
NAB Tape Equalization .....	(Within 2 db of published
RIAA Record Equalization .....	(standard

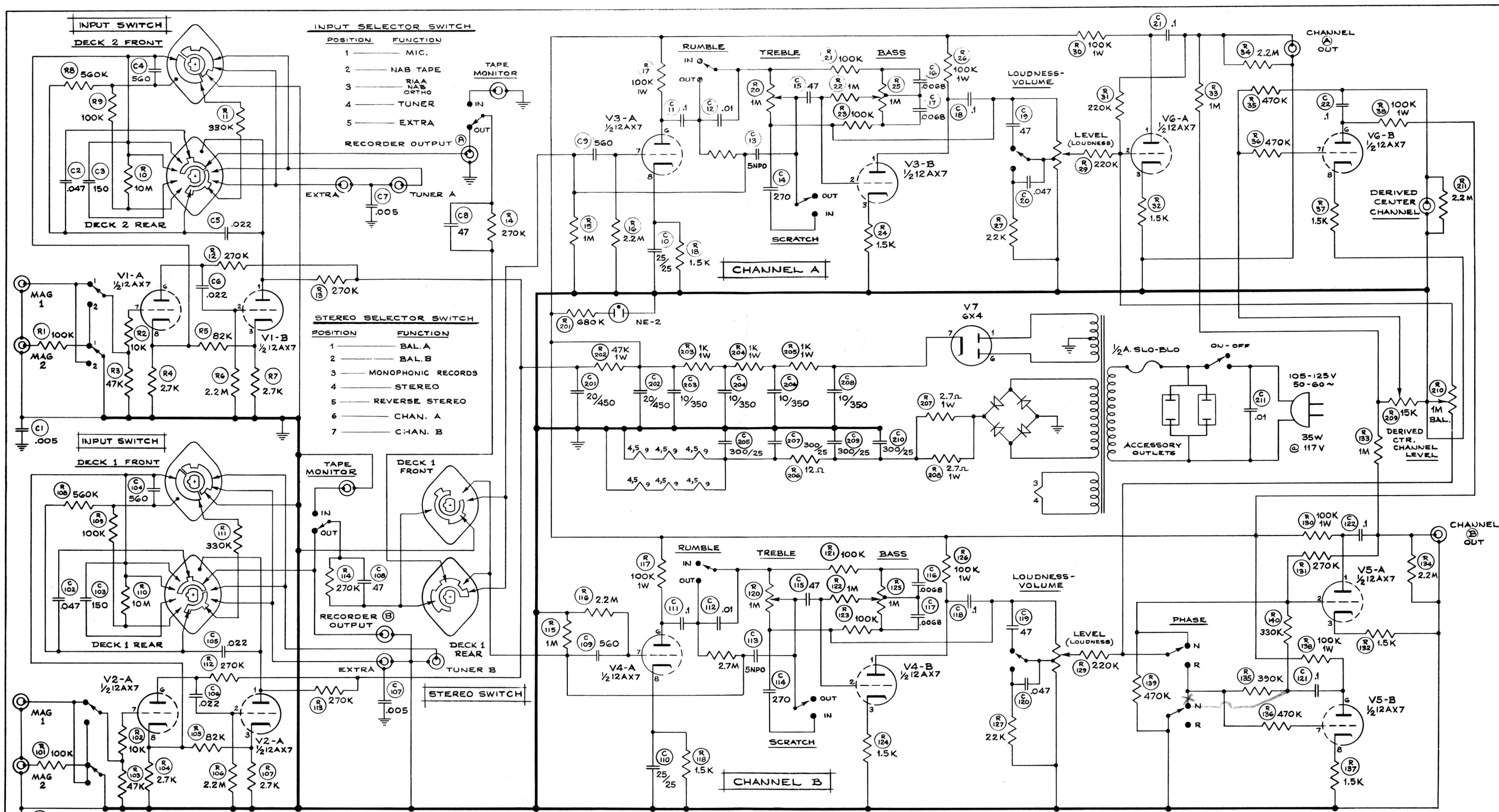
CURVES

LC-21 TONE CONTROLS  
 (IN EXTREME POSITIONS)



LC-21 EQUALIZATION CHARACTERISTICS





THE FOLLOWING CONTROLS IN CHANNEL "A" ARE MECHANICALLY GANGED WITH IDENTICAL CONTROLS IN CHANNEL "B"

- INPUT SELECTOR
- PICKUP
- TAPE MONITOR
- RUMBLE FILTER
- SCRATCH FILTER
- LOUDNESS
- LOUDNESS-VOLUME

- TYPE LC-21 STEREO CONTROL CENTER KIT**
- VOLTAGES MEASURED WITH V.T.V.M.
  - NO INPUT SIGNAL & 117 VOLT LINE
  - SWITCHES SHOWN IN MAX. C.C.W. POSITION.
  - ALL RESISTORS 1/2 WATT UNLESS OTHERWISE SPECIFIED.

## DISTORTION & NOISE MEASUREMENTS

The distortion and noise in the LC-21 is so low that it is of the same magnitude as the top quality laboratory test equipment used for the measurements. As a result, it is not possible to obtain guaranteed data. Suffice to say, once distortion and noise have become too low to measure accurately, they are much too low to hear, also.

## TEST EQUIPMENT

Hewlett-Packard 200CD, Wide Range Audio Oscillator (residual distortion 0.05%).  
Hewlett-Packard 400D, Vacuum Tube Voltmeter.  
Hewlett-Packard 330B, Distortion Analyser (distortion 0.1%).  
Square Wave Generator (designed and built by H. H. Scott Engineering Dept).  
Sola 5005, Constant Voltage Regulator.  
Tektronix Type 561, Oscilloscope.

DISTORTION - (Not corrected for distortion in measuring equipment and source).

Total Harmonic Distortion (1 KC)..... Less than 0.1% at 2.5 V output.  
Frequency Response 20 to 20,000 cycles... Less than 0.15% total harmonic distortion  
at 2.5 V. output.

## GENERAL SERVICE NOTES

1. Check the tubes every year. If the tubes are outside the manufacturer's ratings or show gas, they should be replaced. Gassy tubes may damage other components of the circuit.
2. When the preamplifier is being checked yearly, clean the tubes of dust so that they may radiate their heat more effectively.
3. If at any time the hum or noise increases noticeably, this is often an indication of defective 12AX7's.
4. If the preamplifier blows fuses frequently, check the line voltage. If it rises above 125 volts, drop the line voltage by means of an auto-transformer or place a voltage regulator transformer between the amplifier and the line. If the line voltage is correct, check the unit itself. Do not use fuse sizes other than the fuse size specified.
5. Other tests can be performed to insure that the unit meets or exceeds the specifications outlined previously. Only use parts and tubes specified by H. H. Scott, Inc. The use of non-standard parts or tubes will preclude obtaining the performance stated in the specifications.

If you have any further questions, write to:

Technical Services Dept.  
H. H. Scott, Inc.  
111 Powder Mill Road  
Maynard, Massachusetts