

"THE FIRST REAL IMPROVEMENT IN AMPLIFIER DESIGN TECHNIQUE IN OVER 15 YEARS"

McIntosh AMPLIFIERS

**LABORATORY
STANDARD**

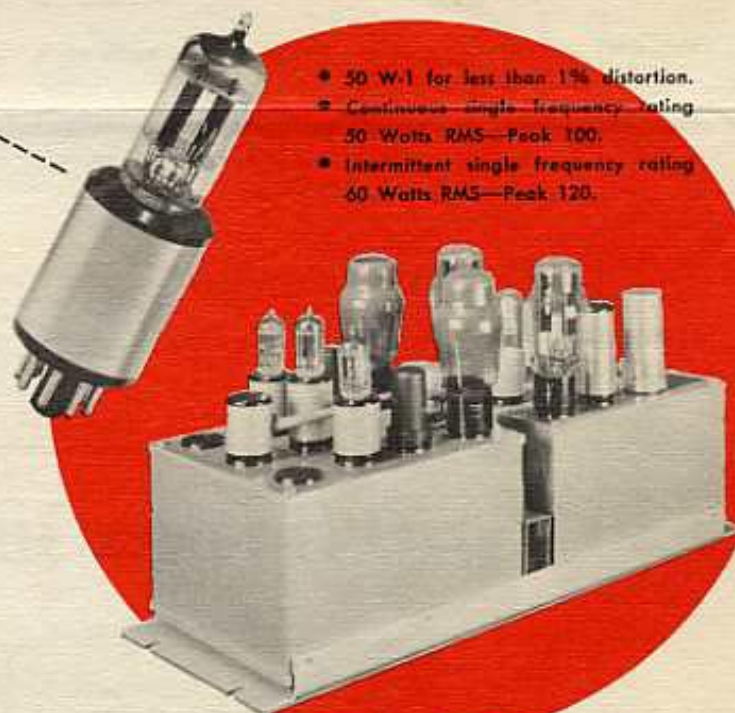
- HIGHEST QUALITY YET ATTAINED.
- HIGHEST EFFICIENCY YET ACHIEVED.
- FULL DYNAMIC RANGE.
- SMALLEST SIZE AND WEIGHT FOR POWER OUTPUT.
- WIDEST FREQUENCY RANGE.
- LOWEST PHASE SHIFT DISTORTION.
- LOWEST NOISE LEVEL.
- LOWEST COST CONSIDERING PERFORMANCE.
- NEGLIGIBLE IMPULSE DISTORTION.
- SIMPLIFIED SERVICING DUE TO MECHANICAL DESIGN.

"Ask the man who has heard one"

The McIntosh Circuit for amplifier design, for which patents are pending, gives inherent advantage over conventional circuits of over 16 to 1 and permits the phenomenal performance characteristics, described in detail on the following pages, to be fully met with a margin to spare.

Three years of concentrated laboratory work went into the development of an audio amplifier of almost distortionless output, both single frequency and intermodulation products which delivers a continuous full power for the 50W-1 amplifier of 50 watts and an instantaneous peak power of over 100 watts from two 6L6G tubes at substantially less than 1% distortion over the entire frequency range of 20 to 20,000 cycles without overloading the tubes. The 15W-1 gives similar performance for 15 watts. The McIntosh Circuit and transformers make this possible. The useful bandwidth of these amplifiers, 10 to 200 kilocycles, may seem exceptionally high but it is necessary to have this wide bandwidth in order to keep the harmonic and phase distortion at the low value achieved and desired.

Impulse distortion in amplifiers generally is very serious but in this amplifier it has been practically eliminated by careful design. This type of distortion is one of the basic reasons why amplifiers that measure well do not necessarily sound good when coupled to loud speaker systems.



- 50 W-1 for less than 1% distortion.
- Continuous single frequency rating
50 Watts RMS—Peak 100.
- Intermittent single frequency rating
60 Watts RMS—Peak 120.



- 15 W-1 for less than 1% distortion.
- Continuous single frequency rating
15 Watts RMS—Peak 30.
- Intermittent single frequency rating
24 Watts RMS—Peak 48.

50W-1 AMPLIFIER

\$299.50

GENERAL SPECIFICATIONS

TUBES	Output: 2—6L6G or 1614 Driver: 2—6J5 Rectifier: 2—5U4G Inverter Amplifier: 1—12AX7 Preamplifier: 1—12AX7 (as required)
SIZE	Amplifier and power supply units each 8 3/16" x 6 3/4" x 4 3/4" high (tubes extend 4 3/4" above units).
MOUNTING	One amplifier and one power supply unit will mount on a standard rack panel 7" x 19".
WEIGHT	Power supply and amplifier units each 25 pounds, approximately.
FINISH	Aluminum gray Hammertone. (Panel finish—black or gray crackle, or to customer's specifications.)

ELECTRICAL SPECIFICATIONS

EFFICIENCY 60% at 50 watts • 67% at 60 watts

ELECTRICAL SPECIFICATIONS

Damping Factor—10. Looking back from load the impedance is 1/10 of the load.

Distortion—Guaranteed 1% or less (see curves). Production run 1/2% or less 20-20,000 cycles single frequency.

Intermodulation Distortion RMS—1% or less providing peak power does not exceed 100 watts for 50W-1 amplifier or 30 watts for 15-watt amplifier.

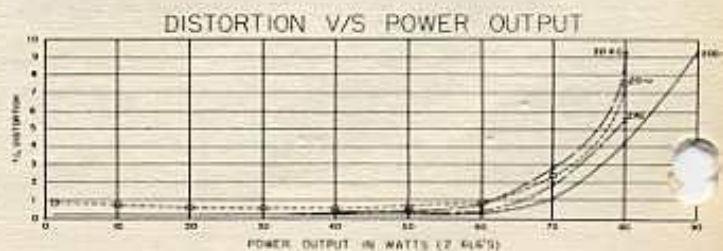
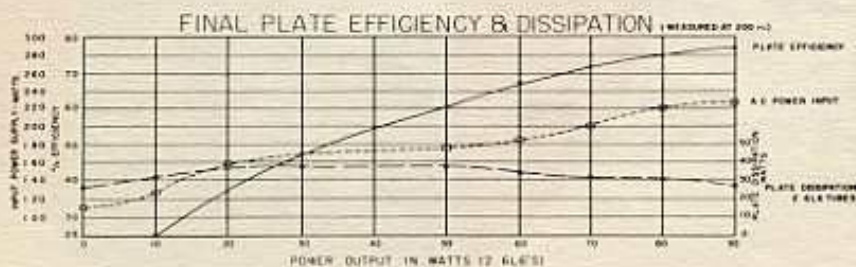
Impulse Distortion—A square wave with a 10 micro-second rise time reproduced through the amplifier without measurable distortion of wave shape. Sudden changes in level do not cause instability.

SERVICING AND

To facilitate servicing and speed replacement of defective materials or tubes, the amplifier is divided into logical small segments and wired as units which plug-in to the general chassis in a manner similar to tubes. This permits instant substitution of sections of the circuit for clearing trouble in the amplifier. These sections can then be tested by the user at his convenience with a minimum of delay in servicing. The 50W-1 amplifier consists of 1 Type P50-C power supply unit and one Type 50W-1 amplifier unit and 1 Type C50-W power connector cord. The balance of the plug-in components are common to both amplifiers and they are listed below:

1. Filter Condensers—2 Mallory Type FP444 and 1 Mallory Type FP 354 or equal.
2. Bias supply voltage divider unit Type ACC-1.

TYPE 50W-1 HIGH EFFICIENCY AUDIO AMPLIFIER



McINTOSH ENGINEERING LABORATORY, INC.

COMMON TO BOTH AMPLIFIERS

Gain—40 db minimum; 100 db maximum (with 1 preamp and input transformer).

Input Impedance—Unit alone input normally 200,000 ohms without input transformer. Universal input transformer 30 to 250 ohms, 600 ohms and bridging input with series resistors.

Output Impedance—600 ohms, balanced; 4, 8, 16, or 32 ohms, balanced or unbalanced.

Noise and Inverter Amplifier Input—90 db below rated output. 80 db below rated output with preamp input. Use of input transformer does not change these ratios.

PLUG-IN FEATURES

- One Inverter Amplifier Type API-3.
- Preamplifier Type ACF-1 (extra as required).
- Input and Output Plugs Type GP-1A.
- Volume Control and Plug Assembly Type VCI-2.
- 20-second thermal plate delay relay. 50W-1 only
- Standard 7" x 19" relay rack panel and cover plate, Type #533, including fuse holder, on and off switch, indicator lamp, and volume control.
- For portable use #654 cover is available for the 50 W-1 amplifier and #754 cover for the 15 W-1 amplifier.
- Items in 8 & 9 are available in Black Crinkle, Gray Crinkle, Gray Hammertone or RCA Gray.

15W-1 AMPLIFIER

\$199.50

GENERAL SPECIFICATIONS

TUBES

Output: 2—6V6-G

Driver: 2—6J5

Rectifier: 1—5Z4

Inverter Amplifier: 1—12AX7

SIZE

Preamplifier: 1—12AX7 (as required)
Amplifier and power supply unit each 8 3/16" x 6 3/4" x 4 3/4" high (plug-in units extend 3" above amplifier top).

MOUNTING

Two amplifiers containing power supplies will mount on a standard rack panel 7" x 19".

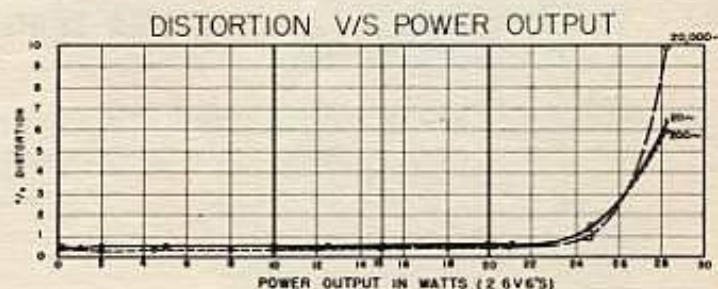
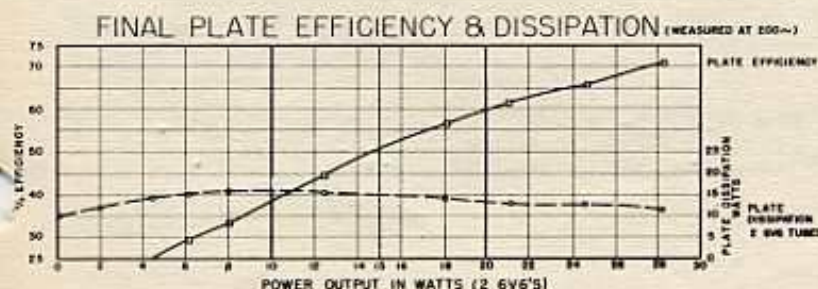
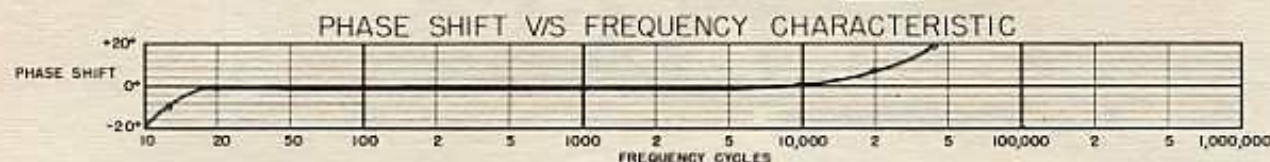
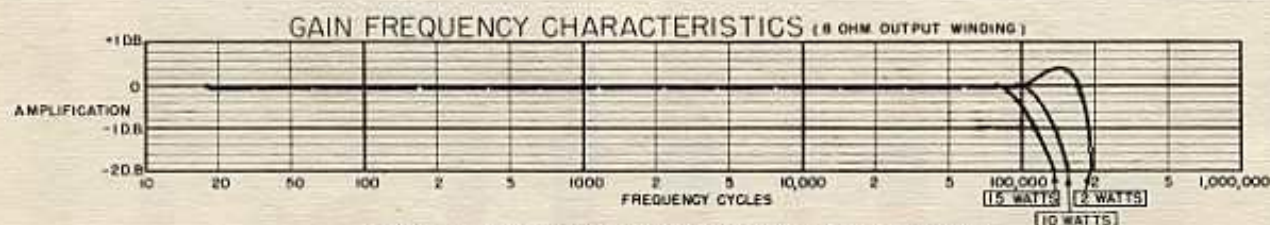
WEIGHT FINISH

Units weigh 25 pounds approximately. Aluminum gray Hammertone. (Panel finish—black or gray crackle, or to customer's specifications.)

ELECTRICAL SPECIFICATIONS

EFFICIENCY 50% at 15 watts

TYPE 15W-1 HIGH EFFICIENCY AUDIO AMPLIFIER



This amplifier operates very nearly Class B with relatively small current flowing in the final tubes without input signal. The wide frequency range, the low distortion, the low equivalent generator impedance, together with the high efficiency, permit a wide variety of applications, among which are the following:

Laboratory General Purpose Amplifier.
Recording and Monitoring.
Public Address for auditoriums, halls, restaurants,
hotels, stadiums, ball parks, etc.
Music Distribution Systems.
Juke Boxes.
Electronic Organs.
Servo Mechanism or Selsyn Motor Drives.
Underwater Sound.

For all applications where frequencies within the range of 10 to 200,000 cycles are useful and where high efficiency at low distortion is desired.

- There are two amplifiers now available combining the McIntosh Circuits with novel, more practical construction designed to minimize production cost and facilitate maintenance.

- The units can be mounted either on a 7" x 19" standard relay rack or the identical units can be arranged with an assembly kit for portable use, making a single unit; or can be mounted on the wall or on a shelf as may be required.

- There will shortly be available a control console to permit multiple microphone-phonograph inputs and remote operation of the gain controls as may be required to satisfy a wide variety of special installation requirements.

McIntosh

LABORATORY

910 KING ST.,

SILVER SPRING, MARYLAND

JUniper 7-9200

Any wide-range loud speaker such as the RCA *1p-1a* will do a wonderful job. The dealer nearest you is Harvard Radio Co., 103 West 43d St., New York.

910 KING STREET
CABLE "MCLAB"

SILVER SPRING, MD.
JUNIPER 7-9200

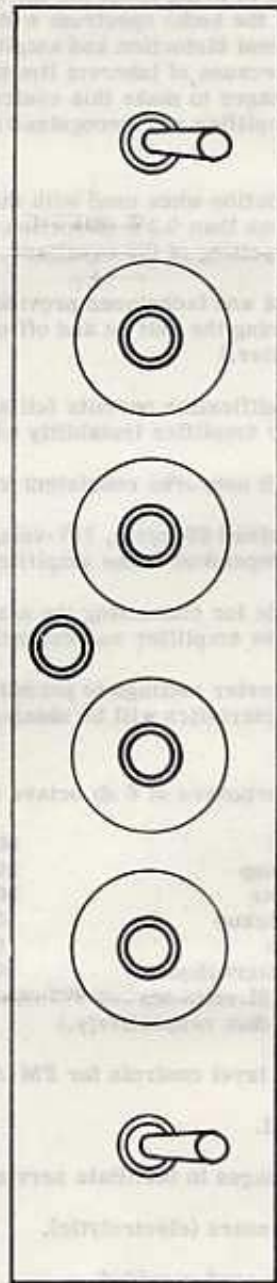
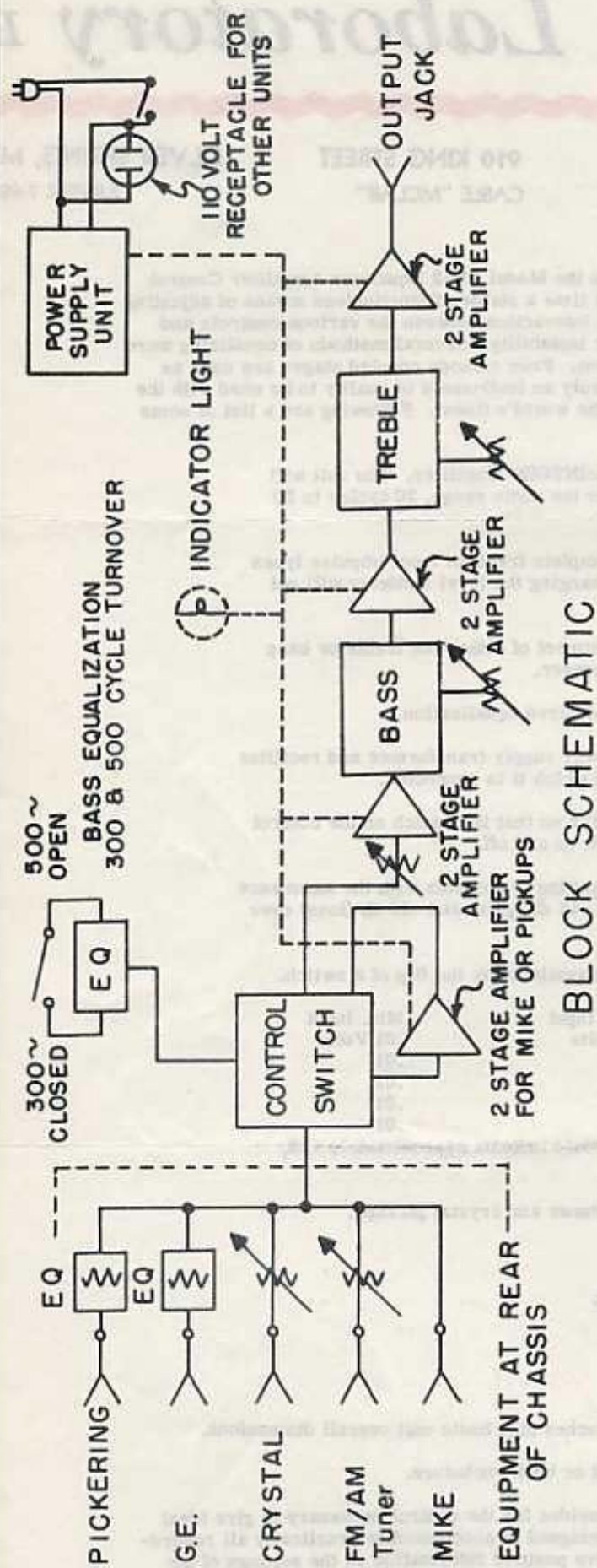
McINTOSH ENGINEERING LABORATORY presents the Model AE-2 Equalizer Amplifier Control after a year of development to bring about for the first time a stable, distortionless means of adjusting the bass and treble ends of the audio spectrum with no interaction between the various controls and complete freedom of transient distortion and amplifier instability. Several methods of equalizing were investigated and rejected because of inherent limitations. Four cathode coupled stages are used as well as four plate loaded stages to make this control truly an instrument of quality to be used with the unsurpassed McINTOSH amplifier now recognized as the world's finest. Following are a list of some of the features:

1. No increase in distortion when used with the McINTOSH amplifier. The unit will deliver 4 volts at less than 0.3% distortion over the audio range, 20 cycles to 20 kilocycles, for any setting of the equalizer.
2. Circuit arrangement and techniques provide complete freedom from impulse types of distortion. (Turning the unit on and off or changing the level suddenly will not cause amplifier flutter.)
3. Stable feedback amplification permits full adjustment of either the treble or bass controls without any amplifier instability whatsoever.
4. Minimum phase shift networks consistent with desired equalization.
5. Complete self-contained 60-cycle, 117-volt, power supply transformer and rectifier to make the unit independent of the amplifier to which it is connected.
6. Additional receptacle for connecting the amplifier so that the switch on the control unit will turn both the amplifier and control unit on and off.
7. Calibrated potentiometer settings to permit resetting of controls with the assurance that repeated characteristics will be obtained. +15 db (gain) and -20 db (loss) over flat zero settings.
8. 300 and 500 cycle turnovers at 6 db octave rate available by the flip of a switch.
9. Five input channels:

	Max. Input	Min. Input
1. Crystal pickup	20 Volts	.01 Volts
2. FM-AM tuner	20	.01
3. Pickering pickup	0.3	.01
4. G. E. pickup	0.3	.01
5. Low level microphone	0.3	.01

(20, .3 and .01 volts across 600 ohms would indicate approximately +20, -8 and -38 dbm respectively.)
10. Separate adjustable level controls for FM-AM tuner and crystal pickups.
11. Main volume control.
12. Plug-in amplifier stages to facilitate servicing.
13. Plug-in filter condensers (electrolytic).
14. Six-foot input power cord provided.
15. 10 inches wide, 10 1/4 inches deep, and 2 3/4 inches high basic unit overall dimensions.
16. Available in hammertone grey - wooden cabinet or book enclosure.

TO THE LISTENER: This instrument of quality provides for the control necessary to give ideal listening condition for normal levels of sound and is designed to accommodate practically all recordings now available. Instructions are included which give positive information on the settings of the various controls to compensate fully for the recording characteristics and to permit the adjustment of the mellowness or the brilliance to suit the discriminating individual. This unit used with the McINTOSH amplifier will give performance of unbelievable realism and provides the finest instrumentality for music and sound reproduction that electronic engineers have been able to devise up to this time.



AE-2 AMPLIFIER EQUALIZER

1/26/50

McINTOSH ENGINEERING LABORATORY INC.
910 KING ST., SILVER SPRING, MARYLAND

THE MCINTOSH ENGINEERING LABORATORY

Offers

THE AE-2A AMPLIFIER EQUALIZER

Designed for the most discriminating and the most practical alike, the McIntosh Model AE-2A Amplifier Equalizer is the ultimate in amplifier control design for those who appreciate the finest in music reproduction. All the controls necessary to reproduce the domestic or foreign recordings are available. The overall design provides flawless reproduction regardless of the control positions.



COMPARE THESE FEATURES

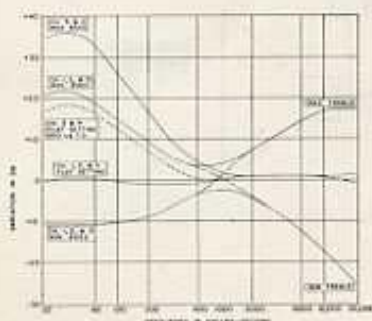
(most of which are exclusive)

1. The McIntosh unit will deliver 4 volts at less than 0.3% distortion over the audio range, 20 cycles to 20 kilocycles, for any setting of the equalizer.
2. Circuit arrangement and techniques provide complete freedom from impulse types of distortion. (Turning the unit on and off or changing the level suddenly will not cause amplifier flutter.)
3. Stable feedback amplification permits full adjustment of either the treble or bass controls without any amplifier instability whatsoever.
4. Bass boost approximately 20 db, bass cut approximately 12 db, independent of treble control. Treble boost approximately 20 db, treble cut approximately 20 db, independent of bass control.
5. Calibrated potentiometer settings to permit resetting of controls with the assurance that repeated characteristics will be obtained.
6. 300 and 600 cycle turnovers at 6 db, octave rate available by the flip of a switch.
7. Separate adjustable level controls (potentiometers) for FM-AM tuner and crystal pickups. (Rear of unit)
8. Five input channels:

	Max. Input	Min. Input
1. Crystal pickup	20 volts	.01 volts
2. FM-AM tuner	20	.01
3. Pickering pickup	0.3	.01
4. Pickup Variable	0.3	.01
5. Low level microphone	0.3	.01

(20, .3 and .01 volts across 600 ohms would be approximately +28, -8 and -38 dbm respectively.)
9. Master Volume Control.
10. Attractive hardwood enclosures.
11. Supplied with connector to obtain power from main amplifier and connect Equalizer output to power amplifier.
12. Additional receptacle for connecting the amplifier so that the switch on the control unit will turn both the amplifier and control unit on and off.
13. 11 inches wide, 10 1/2 inches deep, and 3 1/4 inches high--wood enclosure dimensions.
14. Allows up to 30 feet separation control to amplifier for 20 cycle to 20 kilocycle operation.
15. Position 4 has variable resistor calibrated for any termination 0 to 100,000 ohms.

TO THE LISTENER: This instrument of quality provides for the control necessary to give ideal listening condition for normal levels of sound and is designed to accommodate practically all recordings now available. Instructions are included which give positive information on the settings of the various controls to compensate fully for the recording characteristics and to permit the adjustment of the mellowness or the brilliance to suit the discriminating individual. This unit used with the McIntosh amplifier will give performance of unbelievable realism and provides the finest instrumentality for music and sound reproduction that electronic engineers have been able to devise up to this time.



Typical Curves for AE-2A
Amplifier Equalizer

McIntosh

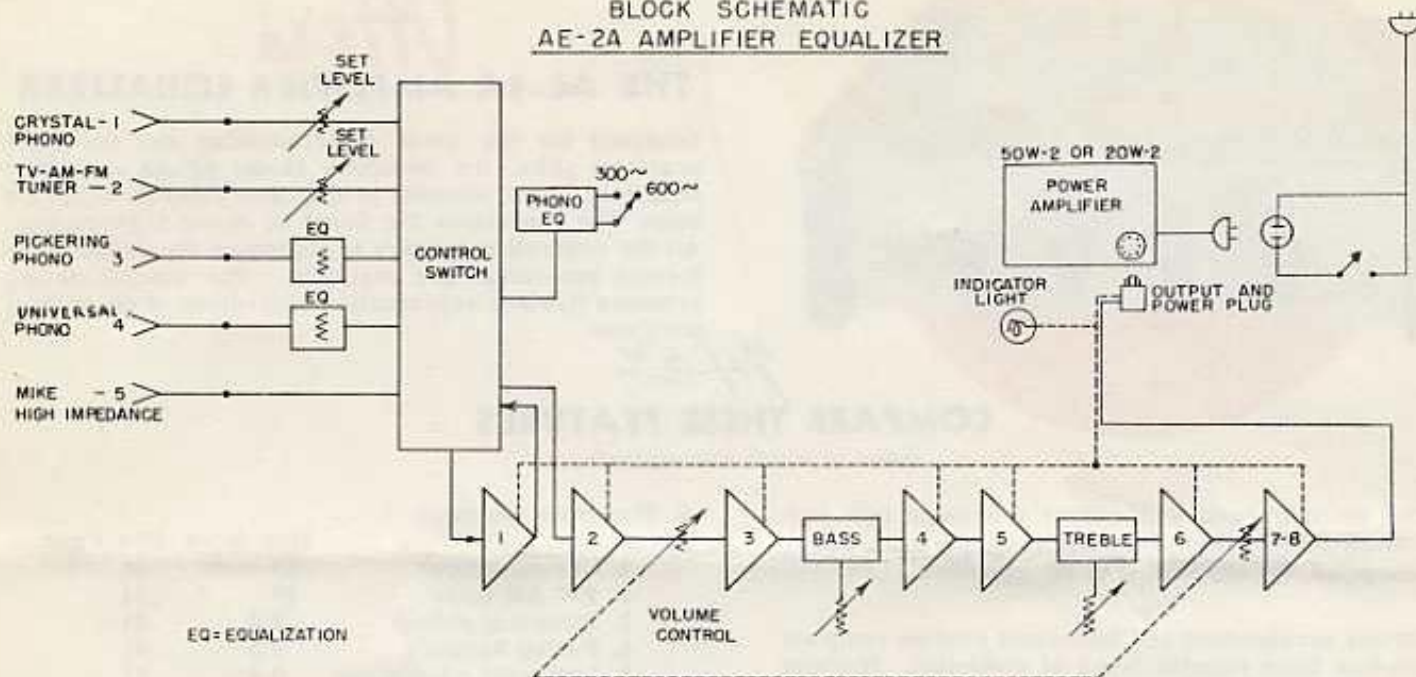
ENGINEERING LABORATORY, INC.

320 WATER STREET • BINGHAMTON, N. Y.

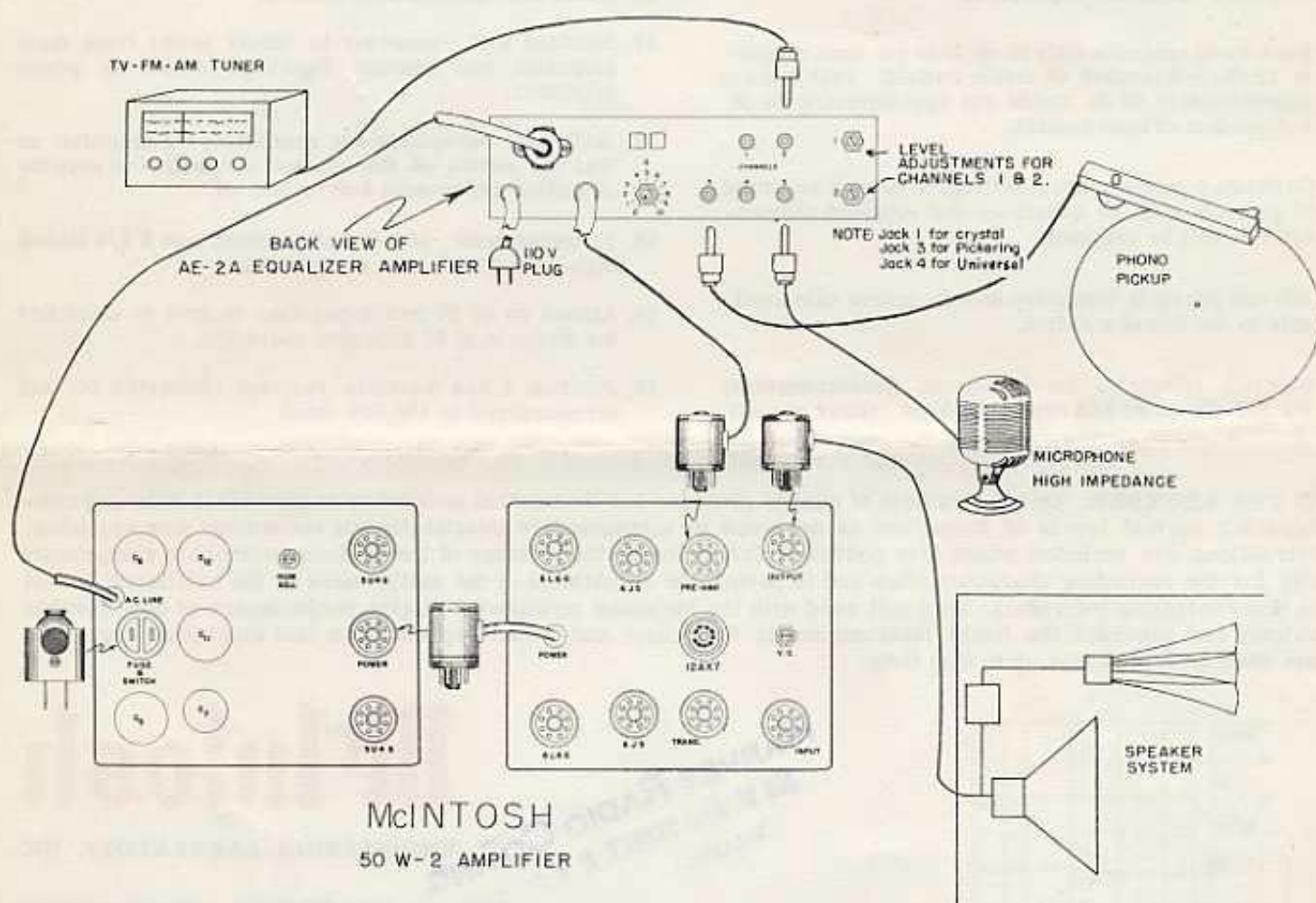
PHONE 3-3566

HARVEY RADIO CO., INC.
103 W. 43rd STREET, N. Y. 36
TELEPHONE 3-3566

BLOCK SCHEMATIC AE-2A AMPLIFIER EQUALIZER



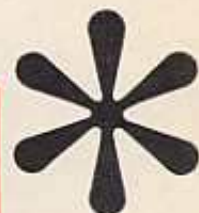
TYPICAL CONNECTIONS



SONOCRAFT CORPORATION
115 WEST 45th STREET
NEW YORK 19, N. Y.
LU. 2-1750

99 $\frac{60}{100}$ %

Perfect Amplification



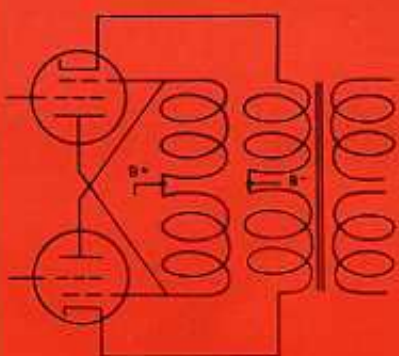
Model A-116

ANY ZERO VU LINE
LEVEL OR TUNER
WILL DRIVE TO FULL OUTPUT

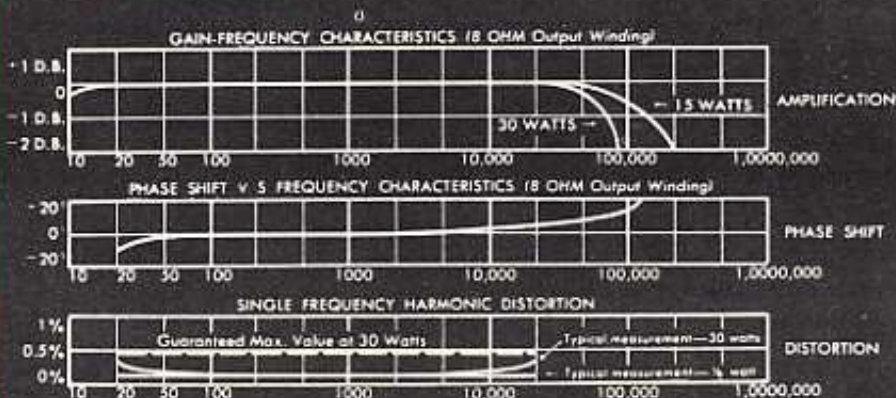
McIntosh
30 WATT
AMPLIFIER

Model A-116

UNITY COUPLING GUARANTEES THIS PERFORMANCE



Lowest Noise 85-90 db below 30 watts.
High damping over frequency range.



Full 30 watts, 20-20,000 cycles. Less than 0.5% Harmonic Distortion at full 30 watts.

* At any frequency 20-20,000 cycles
any power output up to 30 watts
is a perfect reproduction of
input signal within 0.0016.



Electrical And Mechanical Specifications

Power Supply	117/125 volts, 60 cycles	Damping Factor	12 or better for 4, 8 and 16 ohm outputs, 16 for 600 ohms
Power Consumption	135 watts at 30 watts output 105 watts at zero signal output	Input Impedance	0.5 meg. for 2.5 volt input and 0.25 meg. for 0.5 volt input from 20 cycles to 40 Kc.
Power Output	30 watts continuous	Output Impedance	4, 8, 16 and 600 ohms (600 ohm is balanced to ground)
Input Level	Input #1 — .5 volts to 30 volts, with gain control Input #2 — 2.5 volts, (For use with McIntosh C 104 Pre Amp.)	Phase Shift	2.5 Volt Input 20 cycles 8.5° 20,000 cycles 4.5°
Frequency Range	20 to 30,000 cycles \pm .1 db at 30 watts output 10 to 50,000 cycles \pm .5 db at 30 watts output 10 to 100,000 cycles \pm 1 db at 15 watts output	Tube Complement	Rectifier: 5U4-G Pre-Amp: 12AX7 Phase Inverter: 12AU7 or 12BH7 Driver: 12BH7 Output: 2 — 6BG6-G
Harmonic Distortion	Guaranteed less than 0.5 % at 30 watts output or less, 20 to 20,000 cycles.	Auxiliary Equipment Connection	Designed to power C-104 and other McIntosh Preamplifiers
Intermodulation Distortion	Less than 1 % if instantaneous peak power is below 60 watts for any combination of frequencies 20 to 20,000 cycles.	Size	12" x 8" x 8 1/2" high, chassis type construction
Impulse Distortion	Negligible	Weight	33 pounds net
Noise and Hum Level	85 db or more below rated output	Finish	Gray hammertone

Test set up to measure distortion at very low power



Because of the unique design of the McIntosh Output Transformer the high efficiency of Class "B" amplification can be used with wide band, distortion free performance. The McIntosh Circuit guarantees substantially less than 1/2% distortion at all frequencies 20-20,000 cycles even at full power output.



LABORATORY, INC.

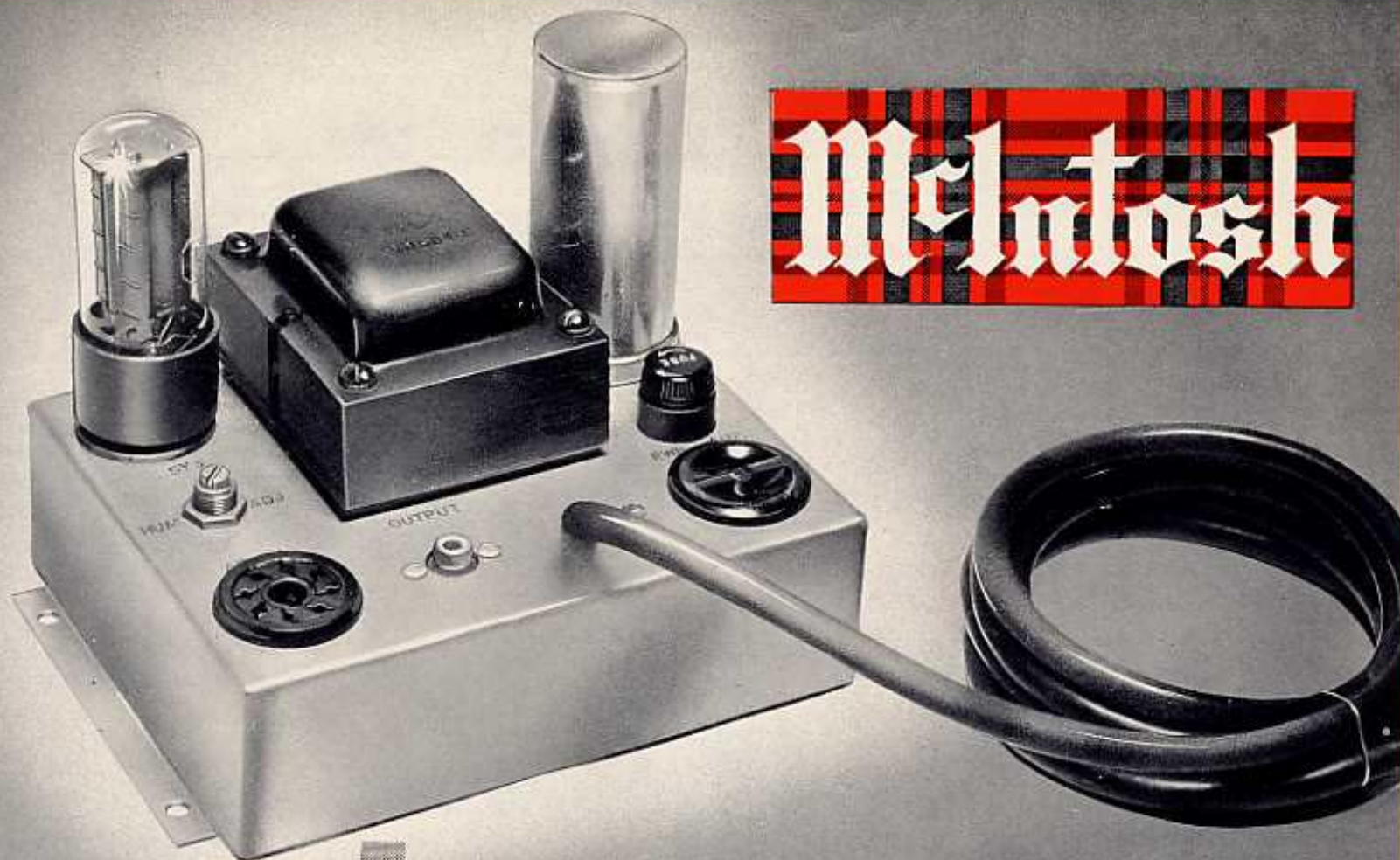
320 Water Street • Binghamton, New York

Telephone 3-3566

The McIntosh Circuit Patents 2477074
and 2545788. Others pending.

Export Division: 25 Warren St., New York 7, N.Y.

McIntosh



NEW!

McIntosh

D-101

POWER

SUPPLY

for use with

McIntosh

pre-amplifier

equalizers

The new McIntosh D-101 is a versatile power supply designed to be used:

1. Whenever a separate power supply is required to power the McIntosh Pre-amplifier Equalizer.
2. When the McIntosh Pre-amplifier Equalizer is to be operated as a remote control panel at a distance greater than 30 feet from the power amplifier.
3. Whenever a general purpose power supply is needed.

The power transformer and rectifier tube are capable of delivering DC current up to 40 milliamperes, and by properly modifying the filter circuit, the usefulness of the D-101 can be extended to this increased current rating.

The ripple frequency voltage output level from the D-101 is less than 800 microvolts, as shown in the schematic diagram.

The D-101 is fitted with a 110 volt receptacle and power plug so that its 110 volt supply can be integrated with a system having one off-on switch as shown in the wiring diagram on the reverse side of this sheet.

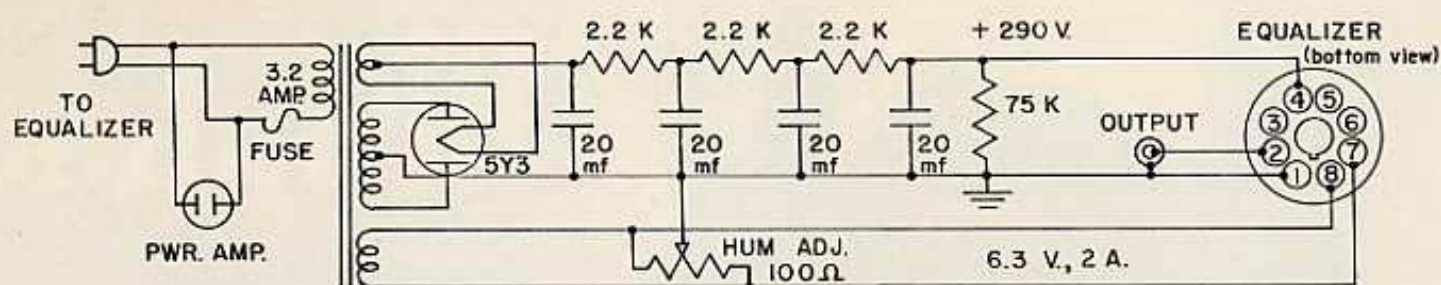
A mounting template is supplied with each unit.

Connector cables, series J-107, are available to connect the equalizer output circuit from this power supply to the input circuit of the power amplifier. (See reverse side)

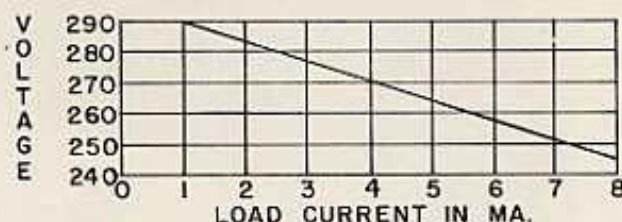
McIntosh Laboratory, Inc.

320 WATER ST.
BINGHAMTON, N.Y.

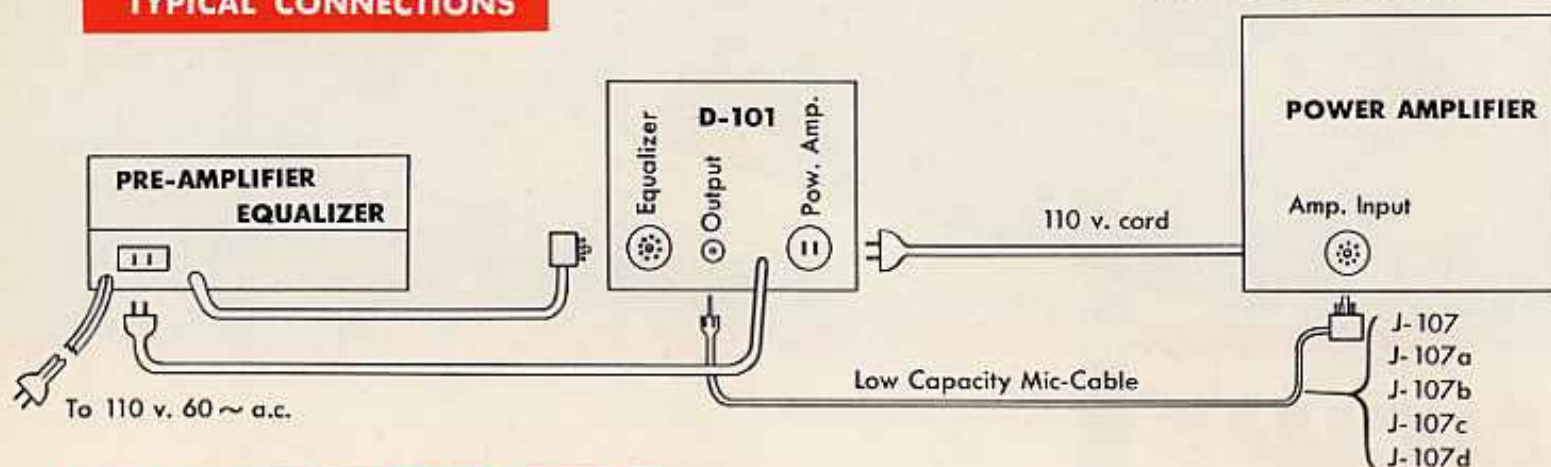
SCHEMATIC



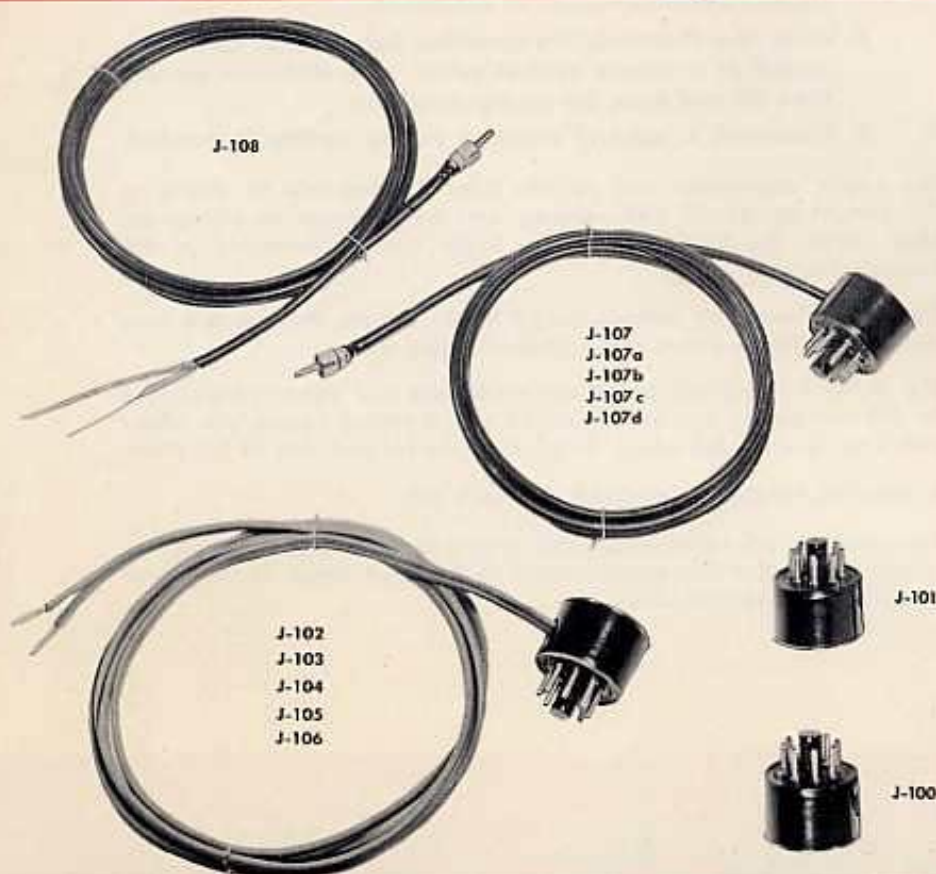
800 MICROVOLTS
RIPPLE AT 8 MA.



TYPICAL CONNECTIONS



CONNECTOR CABLES & PLUGS



- J-100 —output plug
- J-101 —input plug
- J-102 —J-100 output plug and 6-foot length of zip cord, connected for 4 ohms output impedance from McIntosh power amplifiers.
- J-103 —Same as J-102, but connected for 8 ohms.
- J-104 —Same as J-102, but connected for 16 ohms.
- J-105 —Same as J-102, but connected for 32 ohms.
- J-106 —Same as J-102, but connected for 600 ohms.
- J-107 —J-101 input plug and 6 feet of 25 mmf. cap. per foot cable and phono pin jack.
- J-107a—Same as J-107, but 12 ft. long.
- J-107b—Same as J-107, but 18 ft. long.
- J-107c—Same as J-107, but 24 ft. long.
- J-107d—Same as J-107, but 30 ft. long.
- J-108 —Phono pin jack and 6 feet of 25 mmf. cap. per ft. cable—shield and center conductor tinned ready for connection.

McIntosh

LABORATORY INC.

320 WATER STREET

BINGHAMTON, N. Y.

PHONE 3-3566

** 99⁹⁶/₁₀₀ - Perfect Amplification*

20 W-2 AMPLIFIER

*All but 0.0004 of power output is a perfect reproduction of input signals at 20 Watts.

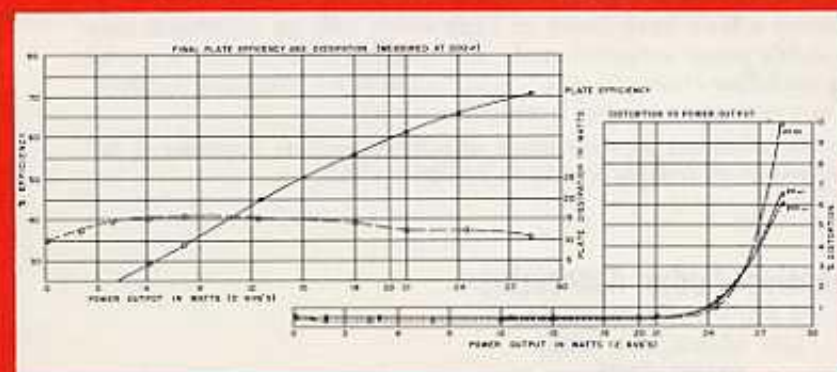
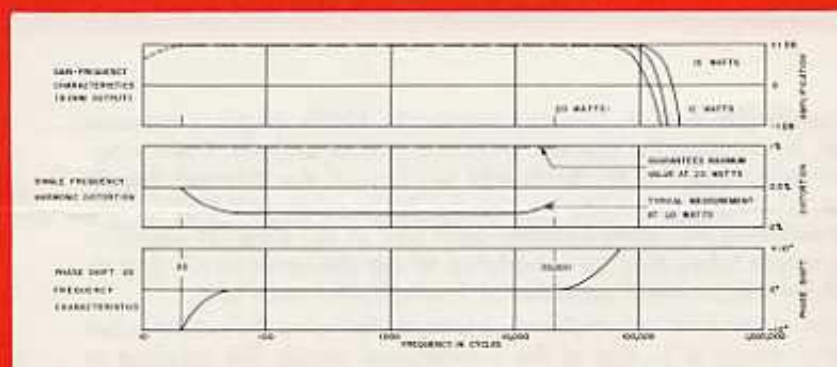
- Full 20 Watts 20 to 20,000 cycles
- Highest efficiency 60-75%
- Smallest Size
- Most Economical to operate
- Lowest Noise 80-90db below 20 Watts
- High damping over frequency range
- Plug in Transformer and Pre-Amplifier



Transformer



Pre-amplifier type ACF-1



IDEAL FOR

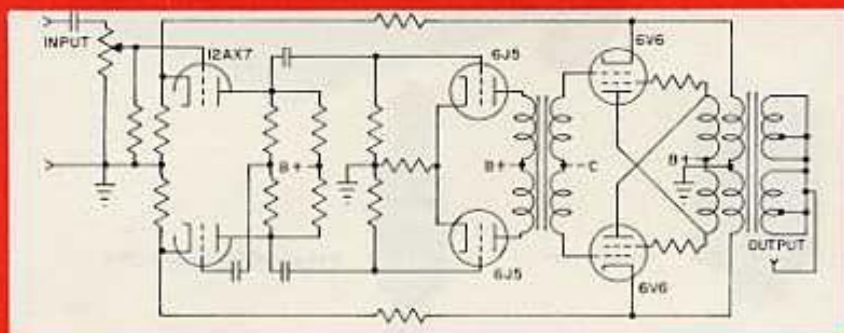
- Churches
- Impulse Engraving
- Recording Studios
- T. V. & AM Broadcast
- Public Address
- Theatres - Stadiums
- Home Sound
- Hospitals
- Schools
- Airports & Planes
- Modulators
- Underwater Sound
- Battle Announce
- Motor Drives
- Control Devices

McIntosh

20 W-2 AMPLIFIER

features

- Power output: 20 watts continuous; 40 watts instantaneous peak.
- Power output: 25 watts intermittent; 50 watts instantaneous peak intermittent.
- Efficiency: final stage 60% at 20 watts, 70% at 28 watts.
- Gain: Basic Amplifier 40db, 70db with pre-amp, 90db maximum with transformer.
- Frequency range: 20 to 20,000 cycles \pm or $-$.05db, 10 to 100,000 cycles \pm or $-$ 3db.
- Distortion: less than $\frac{1}{2}\%$ 20 to 20,000 cycles for 20 watts output.
- Intermodulation Distortion: less than 1% 20 to 20,000 cycles for instantaneous peak power to 40 watts.
- Noise Level: 80db below full output, 65db when pre-amp used.
- Damping factor: 10 or better. Can be made infinite or generator resistance negative if required.
- Input Impedance: 100,000 ohms, with transformer 50, 250, 600 or 20,000 ohms.
- Output Impedance: 4, 8, 16, 32 or 600 ohms balanced-connection to octal plug.
- Tube Complement: Rectifier 1-5Y3, Amplifier 1-12AX7, 2-6J5, 2-6V6G.
- Dimensions: consists of 1 unit $8\frac{1}{8}" \times 6\frac{3}{4}" \times 5\frac{1}{4}"$.
- Weight: complete amplifier 27 lbs., shipping weight 30 lbs.
- Power Consumption: 70 watts zero signal output 117 volts, 60 cycles line power input. 115 watts at 20 watts output.



McIntosh Circuit—Patents 2,477,074 and 2,545,788, others pending



Portable Cover



Wall Mounting Brackets



Relay Rack Panel & Mounting Bracket

The McIntosh amplifier circuit is fundamentally new. It provides practically 100% coupling between primary windings of the output transformer, by winding the primary wires together or bifilarly. Static magnetic fields due to DC plate current are cancelled and the AC fields add in phase in the McIntosh circuit. Because of this, the *high efficiency* of class "B" amplification can be used for the first time with high quality performance. Wave form distortion due to switching transients between each half of the class "B" amplifier is eliminated at any audio frequency. The output tubes may be considered to use the same winding or to "take turns" on a single winding instead of the conventional condition of 1 primary for each tube.

The McIntosh has an inherent large advantage over conventional circuits. By bringing the output tubes electrically four times closer together the impedance is $\frac{1}{4}$ that of the conventional circuit. The coupling to the secondary is improved by a similar factor of 4 to 1 since the primary to secondary turns ratio has been reduced 2 to 1. The McIntosh "take turn" primary therefore has 16 to 1 advantage over the conventional "push pull" primary.

The $\frac{1}{2}$ cathode, $\frac{1}{2}$ plate loading provides a feed back factor of 12db which with an additional loop feed back offers the lowest distortion, most stable power amplifier made. Low impulse distortion has required a number of circuit considerations including the bifilar choke drive coil as indicated in the schematic diagram. This prevents the usual bias changes due to transient or impulse program material.

The circuit permits the maximum possible efficiency of wide band amplifiers and yet operates at full output with substantially less than 1% distortion at all frequencies 20 to 20,000 cycles.

Creative Audio Associates

150 SOUTH HARRISON STREET
EAST ORANGE, NEW JERSEY
ORANGE 6-5229

RECORD

COMPENSATION is

Unlimited

with the

McIntosh

Professional Audio Compensator



C-108 b
\$96.50

Note: If box is blank, switch is in up position. "X" indicates switch is down.

	(Turnover) BASS	(Roll off) TREBLE		BASS	TREBLE
Angel	<input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input checked="" type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	NAB	AES	
Atlantic	<input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>	NAB	NAB	
American Recording Soc.	<input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>	NAB	Orlbo	
Bartok	<input checked="" type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>	629	16 db	
Boston ²	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>	COL	NAB	
Caedmon ³	<input checked="" type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	629	11 db	
Canyon Capitol Capitol-Cetra	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input checked="" type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>	AES	AES	
Columbia ²	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>	COL	NAB	
Concert Hall Contemporary	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input checked="" type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>	AES	AES	
Cook Laboratories	<input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>	NAB	AES	
Decca ²	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>	COL	NAB	
EMS	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input checked="" type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>	AES	AES	
Elektra	<input checked="" type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input checked="" type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	629	16 db	
Folkways (most)	<input checked="" type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>	629	16 db	
Haydn Society ²	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	COL	NAB	
London ² (ffrr)	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	COL	LON	
Mercury	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input checked="" type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>	AES	AES	
M-G-M	<input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input checked="" type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>	NAB	AES	
RCA Victor ¹ (RIAA)	<input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>	Orlbo	Orlbo	
Tempo	<input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>	NAB	Orlbo	
Urania (most) ²	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>	COL	NAB	
Vanguard — Bach Guild ²	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>	COL	NAB	
Vox	<input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>	NAB	NAB	
Westminster, old	<input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>	NAB	NAB	
Westminster, new ²	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input checked="" type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>	COL	AES	

- 1 Set Fine Bass Control to — 1/2
- 2 Set Fine Bass Control to — 2
- 3 Set Fine Treble Control to — 1

Blue Note Jazz—Same as Capitol
Cetra-Soria²—Same as Boston
Colosseum—Same as Capitol
Epic²—Same as Boston
Esoteric—Same as Angel
Good Time Jazz—Same as Capitol

Lyrichord, new—Same as Elektra
Oceanic²—Same as Boston
Philharmonia—Same as Capitol
Polymusic—Same as Atlantic
Remington—Same as Atlantic
Urania (some)—Same as Capitol

Send for FREE record curve booklet



McIntosh

LABORATORY, INC.
322 Water Street • Binghamton, N. Y.
Export Division: 25 Warren St., New York 7, N.Y.



McIntosh brings you

LABORATORY, INC.

99⁶⁰/₁₀₀ % PERFECT AMPLIFICATION

The 30 watt Amplifier model MC-30

- ✓ Featuring the patented McIntosh Circuit
- ✓ Guaranteed 1/2% maximum intermodulation distortion
- ✓ Unity Coupling for performance plus
- ✓ Beautifully Styled in Black and Chrome
- ✓ Zero VU Line Level or any Tuner will drive to full output



\$143.50

*All but 0.000016 of power output is a perfect reproduction of input signal at 30 watts, 20-20,000 cycles.

McIntosh, the world's most advanced amplifier, is unequalled for quality reproduction of any sound source. Its unique circuitry provides ample reserve power combined with unprecedented low distortion—1/3% harmonic distortion at all frequencies, 20-20,000 cycles and at any volume, even full power!

Designed for those who expect the finest, the McIntosh MC-30 sets a new standard among amplifiers today. It brings an almost unbelievable clarity of tone—clean, pure living sound. Most important, you can listen to the McIntosh for hours without listening fatigue or irritation. For performance that really makes a difference, enjoy the McIntosh, masterfully crafted for your lifetime satisfaction.



WHY THE EXCLUSIVE PATENTED McIntosh CIRCUIT brings you purest high-fidelity sound . . .

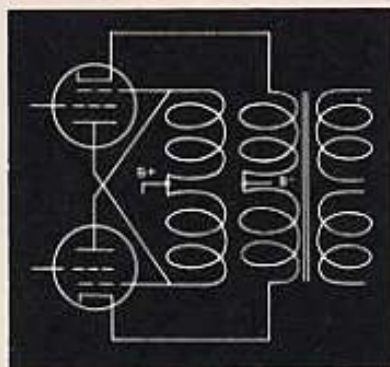
The McIntosh circuit is fundamentally new. It provides practically 100% coupling between primary windings of the output transformer, by winding the primary wires together, or bifilarly. The high efficiency of class "B" amplification can be used for the first time with high quality performance. Wave form distortion, causing listening irritation, due to switching transients between each half of the class "B" amplifier is eliminated at all frequencies.

Before 1947, truly faithful amplified sound was severely limited by: (1) too much distortion; and (2) not enough power capacity. With the invention of the McIntosh circuit, less than 1% distortion became the performance standard which engineers everywhere had been striving to attain.

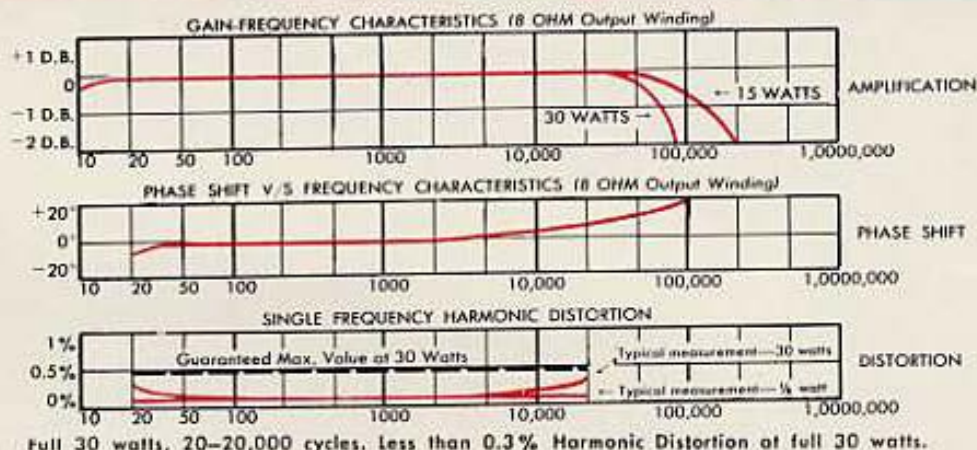
The McIntosh has an inherent large advantage over conventional circuits. By bringing the output tubes electrically four times closer together the impedance is 1/4 that of the conventional circuit. The coupling to the secondary is improved by a similar factor of 4 to 1 since the primary to secondary turns ratio has been reduced 2 to 1. The 1/2 cathode, 1/2 plate loading provides a feedback factor of 12 db, which with additional loop feedback, offers the lowest distortion, most stable power amplifier made.

To date, McIntosh amplifiers alone are able to guarantee less than 1/3 of 1% harmonic distortion and less than 1/2 of 1% intermodulation distortion (discordant distortion), for any frequency or combination of frequencies, throughout the audible range, even at full power output.

The McIntosh Patented* Circuit, with Unity Coupling guarantees this OUTSTANDING PERFORMANCE



Lowest Noise - 90 db below 30 watts. High damping over frequency range.



*McIntosh Laboratory, Inc., introduced Unity Coupling to High Fidelity in U. S. Patents 2,477,074 (1949); also 2,545,788; 2,646,467; 2,654,058.

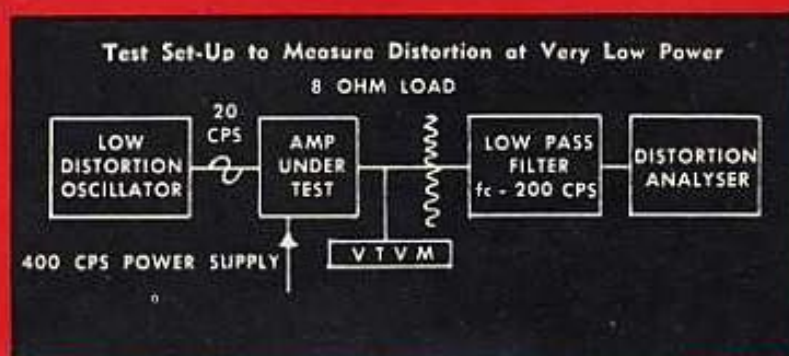
Compare these Specifications

MODEL: MC-30 AUDIO AMPLIFIER

Power Supply	117/125 volts, 60 cycles
Power Consumption	135 watts at 30 watts output 105 watts at zero signal output
Power Output	30 watts continuous
Input Level	Input #1 (pin jack and screw terminals and pin 5 of pre amp socket) .5 volts to 30 volts, with gain control Input #2 (pin 2 of pre amp socket) 2.5 volts (for use with McIntosh C-8 Pre-Amp).
Frequency Range	20 to 30,000 cycles $\pm .1$ db at 30 watts output 15 to 50,000 cycles $\pm .5$ db at 30 watts output 10 to 100,000 cycles ± 1 db at 15 watts output
Harmonic Distortion	Guaranteed less than $\frac{1}{3}\%$ at 30 watts output or less, 20 to 20,000 cycles.
Intermodulation Distortion	Less than $\frac{1}{2}\%$ if instantaneous peak power is below 60 watts for any combination of frequencies 20 to 20,000 cycles
Impulse Distortion	Negligible
Noise and Hum Level	90 db or more below rated output

Damping Factor	12 or better for 4, 8 and 16 ohm output, 16 for 600 ohms
Input Impedance	0.5 meg for 0.5 volt input and 0.13 meg for 2.5 volt input. 20 cycles to 40Kc
Output Impedance	4, 8, 16 and 600 ohms (600 ohm is balanced to ground)
Phase Shift	20 cycles 3° 20,000 cycles 9°
Tube Complement	Rectifier: 5U4-GA Pre-Amp: 12AX7 Phase Inverter: 12AU7 Voltage Amp: 12BH7 Driver: 12AX7 Output: 2-1614
Auxiliary Equipment connection	Designed to power C-8 and other McIntosh Preamplifiers
Size	13" x 8" x 8" high, chassis type construction
Weight	30.5 pounds net
Finish	Chrome and Black

LOW DISTORTION MEASUREMENTS, guaranteed by thorough laboratory tests on each unit shipped.



TYPICAL MEASUREMENTS

Power Output	Harmonic Distortion
30 watts	.22%
15 watts	.12%
1.5 watts	.11%
157 milliwatts	.11%
15 milliwatts	.11%
1.5 milliwatts	.25% (Noise Level)

Now

**LABORATORY STANDARD
PERFORMANCE**
in your home!



Model Illustrated
McIntosh C-8M
with Mahogany cabinet \$96.50
Without wooden cabinet
Order C-8 \$88.50

THE McIntosh Professional Audio Compensator



Play the masters as they themselves would play. The abundant flexibility of the beautiful new McIntosh C-8 assures you of the maximum listening pleasure from any sound source. It is a complete control center for professional and home entertainment systems, with the low distortion and stability you can always expect from a McIntosh.

Operation is surprisingly easy, yet it is the most flexible and advanced audio compensator available today. The control settings enable you to bring precision tonal balance to *any* program material—AM or FM radio, TV, tape or records, exactly as your keenest listening taste may dictate. The McIntosh record labeling system permits you to indicate accurately, right on your recordings for immediate reference, your personal preference of playback settings.

For your *complete* listening pleasure, you'll want the McIntosh C-8, the result of patient laboratory research, built with superb craftsmanship . . . an engineering masterpiece in the field of high fidelity sound.

FLEXIBILITY NEVER BEFORE ACHIEVED . . .

The back panel view illustrates the extreme versatility of the McIntosh C-8. For instance, three auxiliary 110 v. outlets are provided, so that record player, tuner, power amplifier, and compensator can all be controlled from the master on-off switch. There is one tape output, and one auxiliary output in addition to the regular amplifier output. A variable load resistor, calibrated from 1000 ohms to 100,000 ohms, to terminate any magnetic cartridge, produces optimum performance for any prevailing condition. A switch provides equalization for amplitude cartridges, such as Phanstiel, Weathers, or ceramic. There are five input channels, three with level controls, for proper connection with any possible signal source.



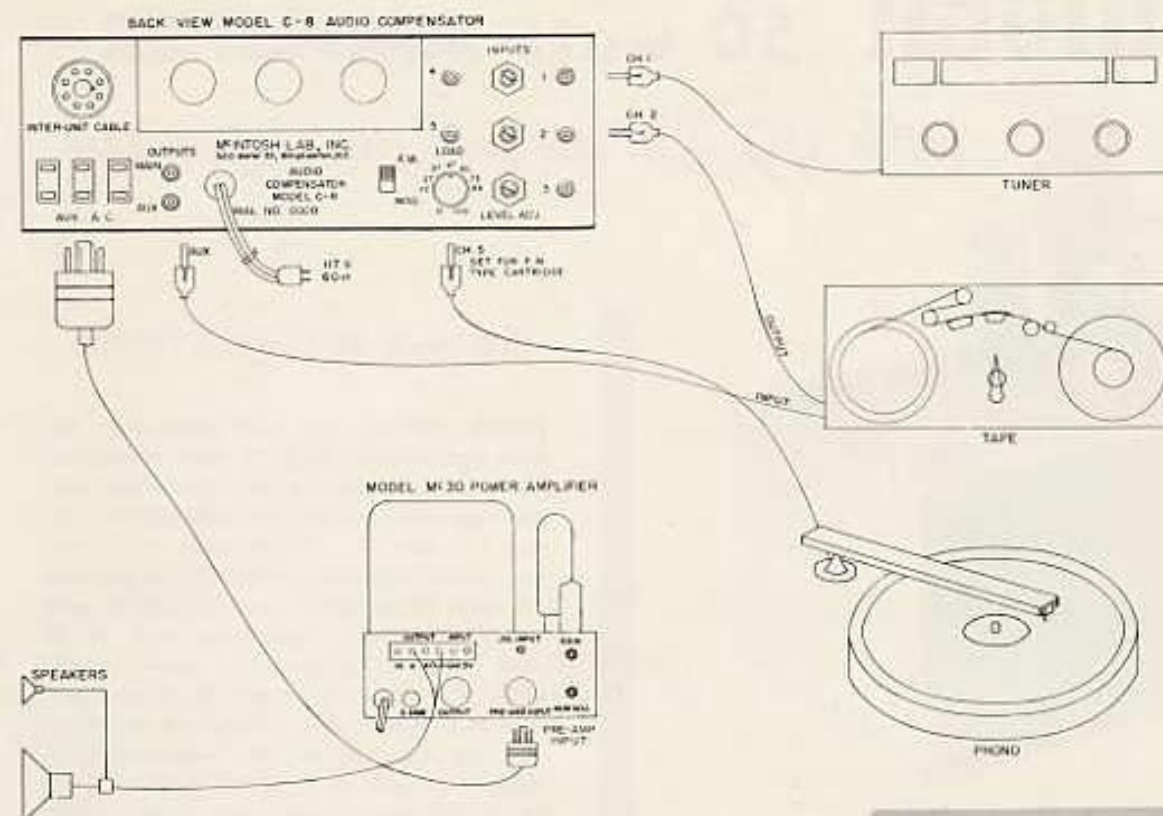
Model Illustrated

Self-powered McIntosh C-8P \$99.50

Self-powered unit in Mahogany

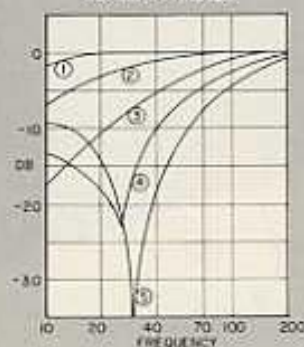
cabinet McIntosh C-8 PM \$107.50

TYPICAL HOOK-UP OF C-8



Any of these curves can be selected in many combinations of Bass and Treble to compensate for any record.

RUMBLE FILTER

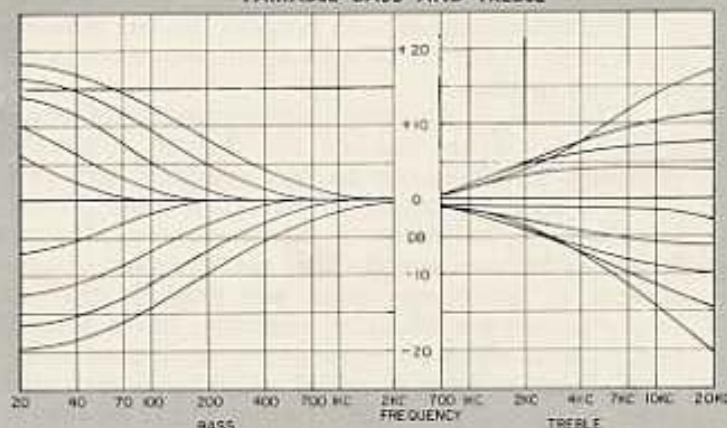


OUTSTANDING FEATURES OF THE C-8

- Five Bass (turnover) and five Treble (roll-off) compensation switches, to obtain accurately any reverse recording curve or combination of curves, for the ultimate in playback results.
- Separate continuously-variable bass and treble controls for additional FINE compensation control, with five accentuate and five attenuate positions indicated.
- Aural compensator with five positions to reduce volume level, yet maintain proper balance between treble and bass. (Doubles as a loudness volume control.)
- Rumble filter to minimize very low frequency noise from turntables or acoustic coupling effects from loudspeaker to turntable.
- Selector for five program circuits, from tape, TV, tuner, microphone, or any type cartridge.

Separate cathode follower drive to Tape Recorder. No switch clicks or pops in any controls. Master on-off switch, can be used to turn entire system on or off. Delivers 4 volts at less than 0.3% distortion over the audio range, 20 to 20,000 cycles, for any setting of the equalizer. Attractive hardwood enclosure, or oversize panel for face mounting. Supplied with connector to obtain power from main amplifier and connect equalizer to power amplifier. Designed to be powered by McIntosh amplifiers. (Self-powered model available.) Allows up to 30 feet separation between C-8 and power amplifier, for 20 to 20,000 cycle operation. Size: $11\frac{9}{16}$ " wide, $7\frac{3}{4}$ " deep, and $4\frac{3}{4}$ " high—wood enclosure dimensions. Size without enclosure: $10\frac{1}{2}$ "x $7\frac{1}{2}$ "x $3\frac{1}{2}$ ". Hum level: —110 db, referred to input.

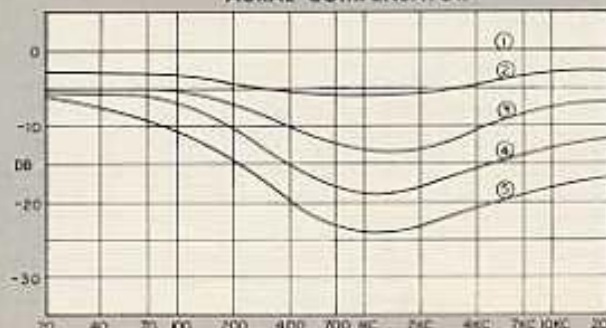
VARIABLE BASS AND TREBLE



BASS COMPENSATOR



AURAL COMPENSATOR



THE

McIntosh

50 watt AMPLIFIER

with $99\frac{60}{100}\%$ perfect amplification

50W-2 \$249.50

For those satisfied with nothing but the ultimate in high fidelity, it's the McIntosh 50 watt amplifier—unsurpassed for performance and quality.

This unique instrument sets a standard of excellence in amplification, for it has reached the theoretical limit of quality and efficiency. The McIntosh 50 W-2 amplifier, with patented circuit, is the only power amplifier which will produce 50 watts of power at less than 1% harmonic or intermodulation distortion from 20 to 20,000 cycles per second. This measurement insures the complete absence of discordant tones, and provides the purest and most nearly perfect amplification available. There is no increase in distortion even when its extra power is demanded by program material. Since nothing is added to or taken from the input signal, clean, unparalleled reproduction of sound results, bringing out an exquisite realism at low, as well as high, volume levels . . . clear lucid highs, with no peaking; natural, full bass with no booming; thrilling middle range, all there with the McIntosh.

In reproducing music or speech with complete realism, the exceptional reserve power capacity of the 50 W-2 is called upon, for many short intervals per second, even at moderate volume, to re-create faithfully and accurately all the fundamentals, harmonics and overtones present in natural sounds.

Professional users, whose standards of sound are critical, such as leading musicians, record manufacturers, as well as many distinguished installations in homes demanding the finest, acclaim the superiority of the McIntosh 50 W-2. The performance graph shown below, to which every unit is tested, is your guarantee of freedom from listening fatigue—of more listening pleasure, of full dynamic range and of complete realism in reproduced music.

50 W-2 SPECIFICATIONS

POWER OUTPUT: 50 watts continuous; 100 watts instantaneous peak; 90 watts intermittent; 180 watts instantaneous peak; intermittent middle frequencies. **HARMONIC DISTORTION:** less than 1% from 20 to 20,000 cycles for full output. **INTERMODULATION DISTORTION:** less than 1% from 20 to 20,000 cycles for full 50 watts output. **EFFICIENCY:** final stage 60% at 50 watts, 76% at 90 watts (see curves). **NOISE LEVEL:** 90 db below full output, 70 db when pre-amp used. **GAIN:** Basic amplifier 40 db, 70 db with pre-amp, 90 db with transformer. **FREQUENCY RANGE:** 20 to 20,000 cycles ± 1 db; 10 to 100,000 ± 3 db (see curves). **INPUT IMPEDANCE:** 100,000 ohms; with transformer 50, 250, 600 or 20,000 ohms. **OUTPUT IMPEDANCE:** 4, 8, 16, 32 and 600 ohms. **DAMPING FACTOR:** 10 or better. **TUBE COMPLEMENT:** Rectifier 2-5U4G, Amplifier 1-12AX7, 2-6J5, 2-6L6G or 5881. **DIMENSIONS:** Two units, power supply and amplifier, each $8\frac{1}{8} \times 6\frac{1}{4} \times 5\frac{1}{4}$ ". **WEIGHT:** 55 lbs. Also available are portable covers and wall mounting brackets. **POWER CONSUMPTION:** 185 watts at 50 watts; 120 watts zero signal. Uses grain oriented cores to minimize low level distortion and save weight. Transformers are potted for long life.

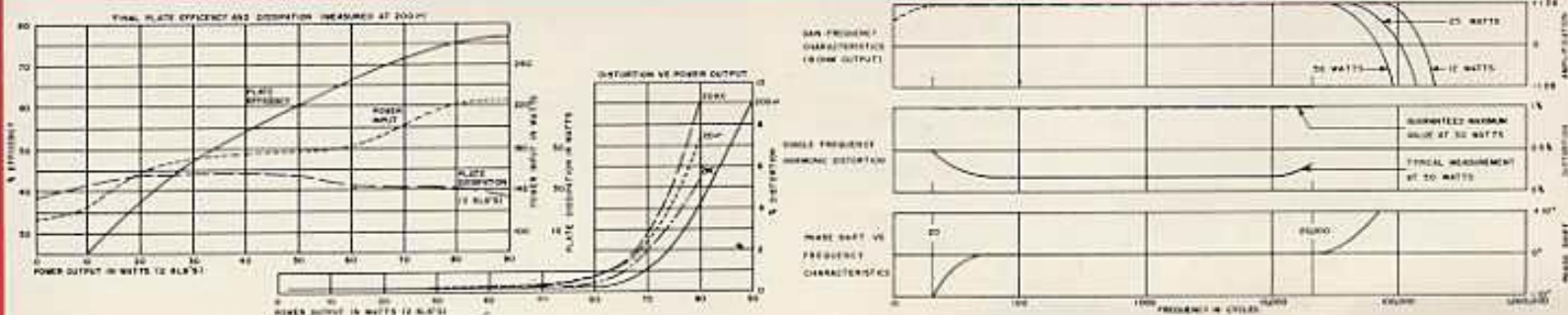


PLUG-IN PRE-AMP: Provides additional amplifier gain



PLUG-IN INPUT TRANSFORMER: To match or bridge low impedance input lines. Used with pre-amp above.

(above units are available as accessories).



MODEL C-104

EQUALIZER PRE-AMPLIFIER

*a low distortion
control center
for your home
music system*



An equalizer Pre-Amplifier is the control center of the sound reproducing system. *Low distortion, stability, and adequate frequency response* are as important in the Equalizer Pre-Amplifier as in the power amplifier. The McIntosh C-104 provides these vital features. Circuit arrangement and techniques bring complete freedom from impulse types of distortion. (Turning the unit on and off or changing the level suddenly will not cause amplifier flutter.) There are five input channels, two of which are equalized for use with magnetic cartridges. Stable feedback amplification permits full adjustment of either the treble or bass controls without any amplifier instability whatsoever.

MORE PLUS VALUES with the McIntosh

GREATEST POWER with **LOWEST DISTORTION**, from the exclusive, patented McIntosh Circuit. When used with associated equipment of equal quality, it puts virtually nothing between the artist and the listener.

NO OBSCURITY: The distortion and full power frequency response of the McIntosh amplifier is at the point where further improvement is not only unlikely, but if obtained, will produce no increase in listening pleasure.

LONGER LIFE: The high efficiency of McIntosh amplifiers means less wear on every component part.

McINTOSH ACCESSORIES: Complete and of quality equal to the power amplifier.

GUARANTEED: McIntosh amplifiers are sold with a written guarantee to perform as advertised, with standard guarantee on materials and workmanship.

High Fidelity music in the home is rapidly becoming a part of good American living. The audio amplifier is the heart of any sound system. As a pioneering manufacturer of high fidelity power amplifiers, we sincerely invite careful comparison of actual performance and quality of our products against those of any other manufacturer. We urge you to make the McIntosh listening test.

McIntosh

Model illustrated

C-104a with Mahogany cabinet \$67.50

C-104h without wood cabinet 61.50

- Bass Accentuate and Attenuate
- Treble Accentuate and Attenuate
- Magnetic Cartridge Bass Compensation with three positions
- Master on-off Switch and Volume Control

Delivers 4 volts at less than 0.3% distortion, 20-20,000 cycles, at any setting. Bass accentuate 20 db; Bass attenuate 20 db; Treble accentuate 15 db; Treble attenuate 20 db. Separate adjustable level controls (potentiometers) for FM-AM tuner and TV Audio. Amplifier connectors supplied. Can be connected so that on-off switch will control both power amplifier and C-104. Size: 11 $\frac{1}{16}$ " x 7 $\frac{3}{4}$ " x 4 $\frac{3}{4}$ " with hardwood enclosure. Control unit only: 10" x 7 $\frac{1}{2}$ " x 3 $\frac{1}{2}$ ". Allows up to 30 feet separation between C-104 and amplifier for 20-20,000 cycle operation. Five input channels: TV audio, FM-AM tuner, Low level microphone, High level magnetic cartridge, Low level magnetic cartridge.

MUSIC AGE, INC.
HIGH FIDELITY SYSTEMS

171 ROUTE #4, PARAMUS, N.Y.
TELEPHONE - DIAMOND 3-8200

Laboratory, Inc.

320 WATER STREET

BINGHAMTON, N. Y.

EXPORT DIVISION: 25 WARREN ST., NEW YORK 7, N. Y. CABLE: SIMONTRICE NEW YORK