

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

# McIntosh

LABORATORY  
STANDARD

## AMPLIFIERS

- 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"*

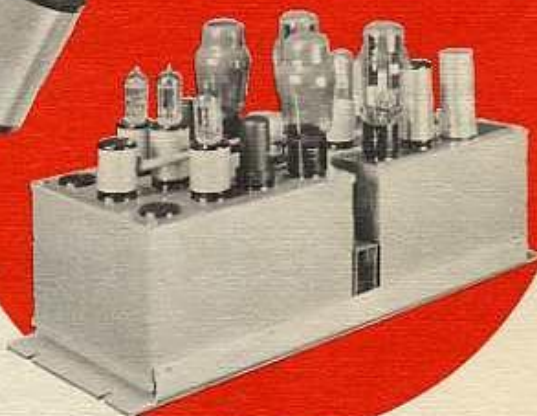
The McIntosh Circuit for amplifier design, for which patents are pending, gives inherent advantage over conventional circuits of over 16 to 1 and permits the phenomenal performance characteristics, described in detail on the following pages, to be fully met with a margin to spare.

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

<b>TUBES</b>	Output: 2—6L6G or 1614 Driver: 2—6J5 Rectifier: 2—5U4G Inverter Amplifier: 1—12AX7 Preamplifier: 1—12AX7 (as required)
<b>SIZE</b>	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).
<b>MOUNTING</b>	One amplifier and one power supply unit will mount on a standard rack panel 7" x 19".
<b>WEIGHT</b>	Power supply and amplifier units each 25 pounds, approximately.
<b>FINISH</b>	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.

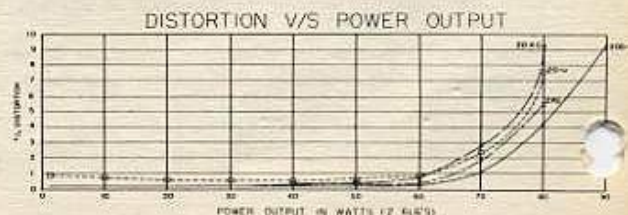
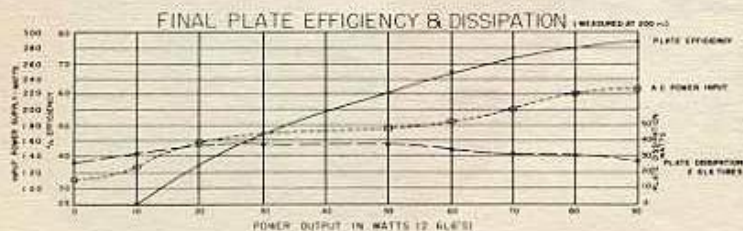
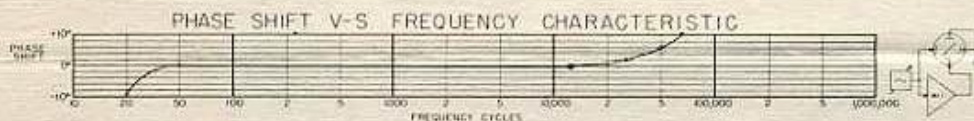
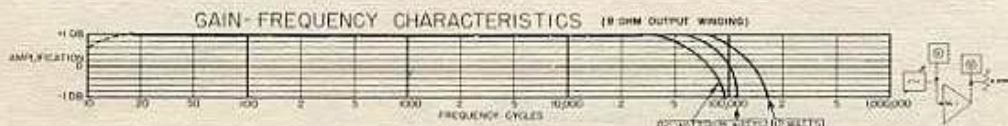
**Impulse Distortion**—A square wave with a 10 micro-second rise time reproduced through the amplifier without measurable distortion of wave shape. Sudden changes in level do not cause instability.

## 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

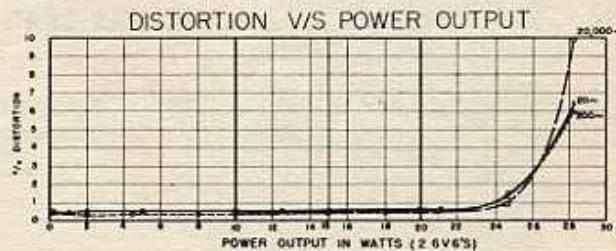
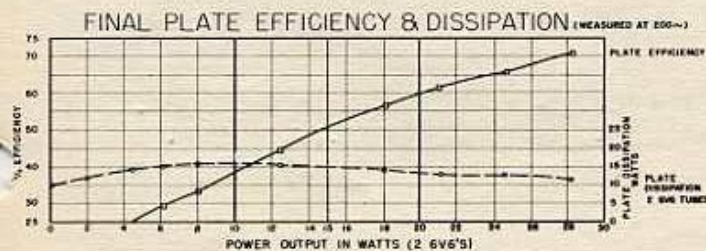
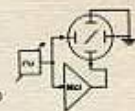
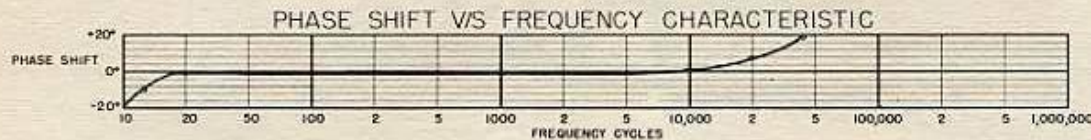
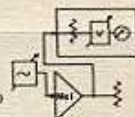
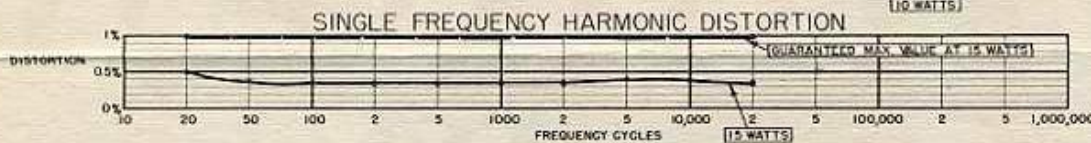
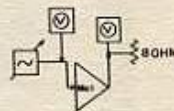
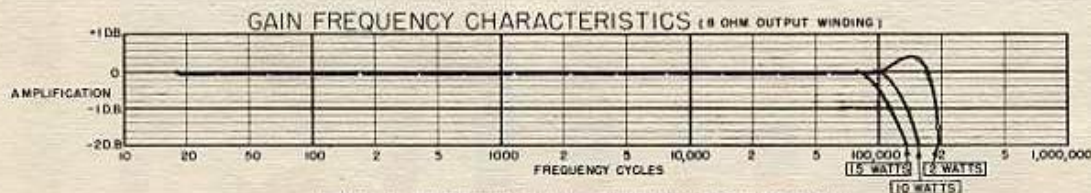
### GENERAL SPECIFICATIONS

<b>TUBES</b>	Output: 2—6V6-G Driver: 2—6J5 Rectifier: 1—5Z4 Inverter Amplifier: 1—12AX7
<b>SIZE</b>	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).
<b>MOUNTING</b>	Two amplifiers containing power supplies will mount on a standard rack panel 7" x 19".
<b>WEIGHT</b>	Units weigh 25 pounds approximately.
<b>FINISH</b>	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



910 KING ST., SILVER SPRING, MARYLAND — JUNiper 7-9200



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 12-la will do a wonderful job. The dealer nearest you is Harvard Radio Co., 103 West 43d St., New York.