

McIntosh®
C33

*"...for the Love
of Music..."*



Handcrafted with pride in the United States by dedicated, highly trained craftspeople.



C33

Why, since its beginning in 1949, has McIntosh been acknowledged as the worldwide leader for good sound, realistic music reproduction, the chief source for technological advancement, outstanding appearance, quality, and value? Why has the industry used "as good as a McIntosh" as its yardstick by which to compare. McIntosh has carefully and expertly merged the many contributing elements into a result that is universally envied and copied but never equaled! The C 33 Control Center is the latest illustration of some of the factors contributing to the McIntosh reputation.

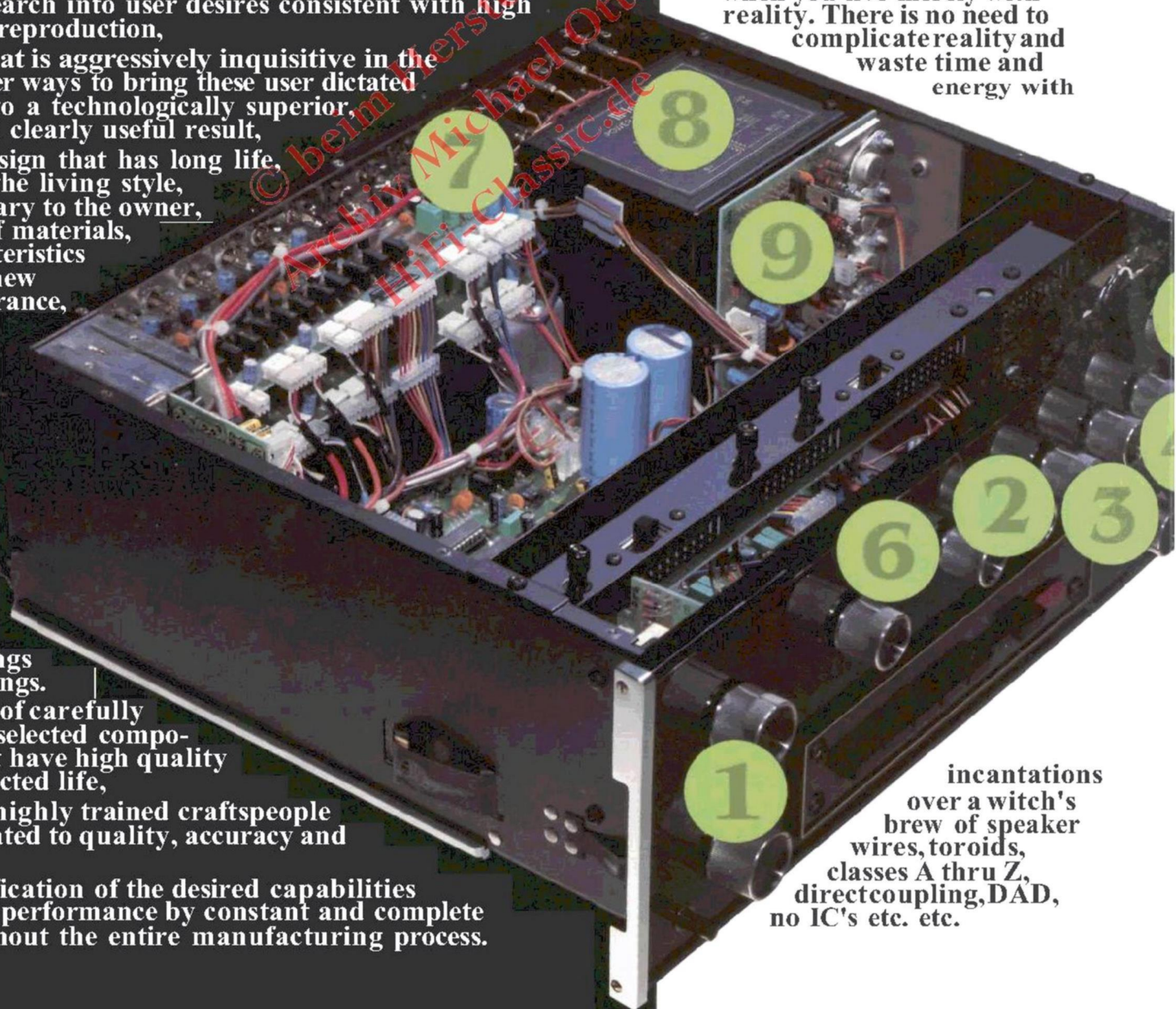
McIntosh unites:

- continued research into user desires consistent with high quality music reproduction,
- engineering that is aggressively inquisitive in the search for better ways to bring these user dictated requirements to a technologically superior, innovative and clearly useful result,
- appearance design that has long life, complements the living style, is complimentary to the owner, and is made of materials, whose characteristics permit 'a like new always' appearance,
- easy to operate; The unique McIntosh designed panels are always easily readable in your choice of home lighting. They are obviously designed by human beings for human beings.
- manufactured of carefully specified and selected component parts that have high quality and long predicted life,
- assembled by highly trained craftspeople who are dedicated to quality, accuracy and perfection,
- thorough verification of the desired capabilities and quality of performance by constant and complete testing throughout the entire manufacturing process.

These are some of the elements that are positive and readily verifiable. There are other elements in the McIntosh reputation that are less tangible, but no less important. McIntosh has never dissipated resources on opportunistic adventures into pure commercialism like quadraphonic sound. Today many people are mountain climbing on mole hills in their effort to find some point to extol their products. They would have you worry about:

- distortion in soldered joints,
- distortion in capacitors,
- speaker cones not made with Mt. Fuji water,
- conducting electrical sound frequencies in anything but litz wire,
- transient intermodulation distortion and
- many other scientifically indefensible allegations.

The reproduction of sound is a very complex undertaking when you live merely with reality. There is no need to complicate reality and waste time and energy with



incantations over a witch's brew of speaker wires, toroids, classes A thru Z, direct coupling, DAD, no IC's etc. etc.

The C 33 Control Center is the distillation of more than 30 years of technological progress. *High Fidelity** described it as mind boggling in its usefulness and flexibility.

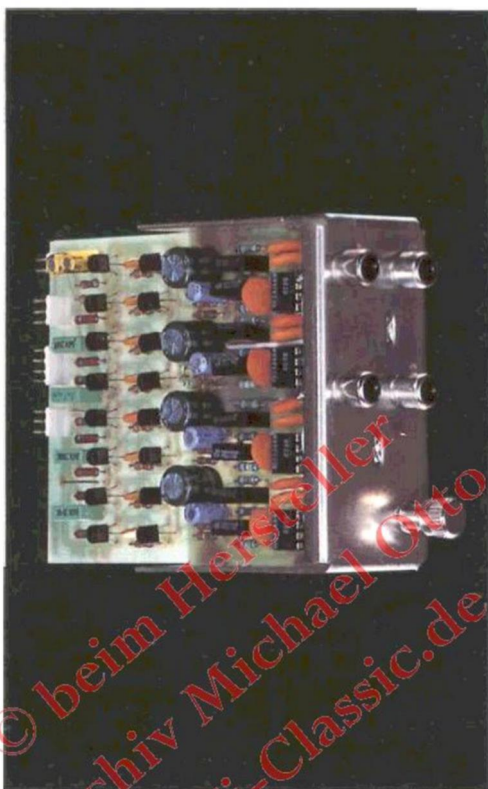
After all, it's really two preamplifiers; it includes:

- The most flexible, complete, stereo preamplifier
- The most flexible, complete, separate stereo recording preamplifier
- The most flexible, complete, program compressor and expander that can operate in either the listen or record preamplifier
- High quality, high performance distortion-free five band tone shaping controls that can be used in either the listen or record preamplifier
- High quality, high performance monitor power amplifier that protects your speakers and your music with the exclusive McIntosh Power Guard and Sentry Monitor Circuits.

1 Unique separate listen and record facilities, introduced and perfected by McIntosh, permit complete and independent operation. Separate input selectors, electrically isolated from each other, provide non-interference operation in both the listen and record preamplifier. Both listen and record input selectors control low DC voltages which in turn control, electronically, Field Effect Transistor Analog switches. Because the FET analog switches are located at the input, noise, switch clicks and pops are eliminated and the potential for induced hum pickup is close to zero.

You can record on 3 tape recorders from any source and you can copy from one tape recorder to another while listening to a completely different program. The program being recorded can be monitored easily with the monitor pushbutton. A fourth tape deck may be plugged into the front panel without disturbing your permanently wired system.

2 Five separate tone shaping controls provide musical spectra tone shaping. Each control adjusts two octave band segments to satisfy your personal preference or the demands of the program material. At the detent in the center of the rotation of each control the equalizer circuits are disconnected, completely removed from the operating circuits.

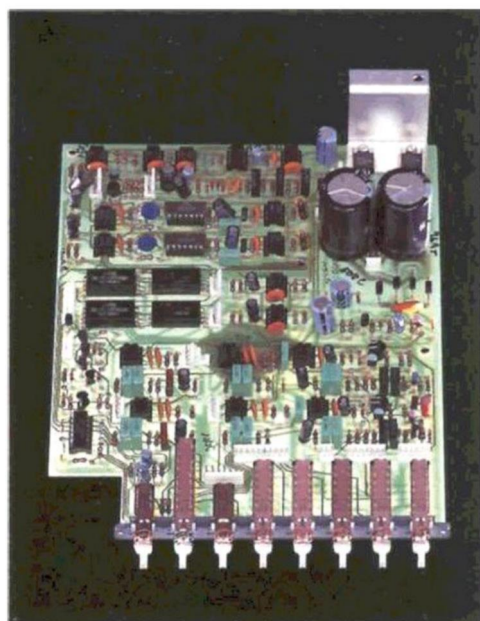


McIntosh has pushed the barriers of low noise performance with this new totally shielded, direct input connected phono preamplifier section. Superior performance, even in the presence of strong interference fields, is assured by the use of the steel exterior chassis plus an inner shield enclosure of plated steel, (shield removed here to show circuits)

3 The McIntosh compandor permits expansion or compression of the dynamic range of program material. Compressed recordings and broadcasts can be expanded on playback to restore dynamic range. Tapes can be recorded using compression and replayed using expansion to increase signal-to-noise ratio. The operating ranges of the compandor are so versatile that commercially encoded program material can be reproduced without the added investment in other outboard equipment.

4 Loudness controls in ordinary equipment are usually simple, passive circuits connected to a portion of the rotation range of the volume control. As a consequence, loudness compensation accuracy is dependent on many variables such as speaker efficiency, amplifier gain and differences in input level. The C 33 loudness control is continuously variable, operates independently of the volume control, and its contour is accurately modeled after the family of "Equal Loudness" curves developed by Drs. Fletcher and Munson.

5 The precision tracking volume control, a step attenuator, has channel to channel accuracy within 1 dB throughout its entire rotation. Such extremely accurate matching is achieved through electronically controlled trimming of the resistance material deposited on pairs of printed circuits. The accuracy of the channel to channel balance and the completely noise free performance are permanently maintained. Use does not affect performance as in ordinary volume controls.



The main circuit board in the C 33, as with the other boards, is constructed of military grade epoxy fibreglass resin. The photo processed circuit foils are protected from excessive solder, potential short circuits, and destructive circuit bridging by an extra process, screened solder resist. This is another McIntosh practice to protect your musical pleasure and the unit's performance.

6 The appearance of a McIntosh speaks eloquently of precision, quality, premier performance and long, trouble-free life. Consider the construction and materials used in the front panel and knobs. Each constituent part is selected for long, wear-resistant life and stable attractive styling. The panel itself is select white flint glass, free from bubbles, flow marks and other faults. It is silk screened on the reverse side with thermal setting epoxy screen inks which practically become a part of the glass. Then it is built into a brightly polished and anodized frame. The knobs used are meticulously machined of solid aluminum then anodized and thermally isolated.

7 Convenience and ease of operation support the concept of human engineering when the AC power switching versatility is considered. The AC power to the entire stereo system may be controlled from either the turntable's power switch or the power switch on this exceptional preamplifier. Connected to a special power outlet is a current sensing relay that will be energized when the turntable is turned on or when the red power switch is pushed on the C 33. The relay, in turn, controls the AC power to the rest of the stereo system. Sensitivity of the circuit is adjustable to match the current consumption of your turntable.

8 You can install your C 33 anywhere. A solid copper band, a silicon steel band and a mild steel outer casing confines the magnetic field of the power transformer to reduce the potential for hum pickup in either the C 33 or associated equipment. This time proven yet expensive construction bypasses the destructive heat and other associated problems found in alternate, less satisfactory methods of transformer construction. The McIntosh transformer design and construction gives you a very worthwhile benefit by removing any limitations on how or where you may install your equipment.

9 A wide band, very low distortion 20 watts per channel power amplifier feeds power to headphones. The power amplifier is a complete, fully designed amplifier. Music listening is protected by the patented* * POWER GUARD circuit and circuit components are protected by the patented* * Sentry Monitor circuit.



The listen and record selector switches are mounted on the front panel sub chassis. Input selection for each preamplifier originates here by switching dc on these contacts.

The Power Guard waveform comparison circuit detects waveform differences between the input and the output signal. A sampling of the program material at the output of the amplifier is constantly compared with the program material at the amplifier input. Should the differences reach 1%, Power Guard goes to work. In only a fraction of a millisecond Power Guard dynamically reduces input level to prevent amplifier overload yet permits the amplifier to deliver its absolute maximum power output without extra distortion. The operation of the Power Guard circuit is absolutely silent. There is not even "soft" clipping. There is simply no clipping!

The Sentry Monitoring circuit constantly monitors the output signal. At signal levels up to rated output this circuit has no effect. If the power output exceeds design maximum, or in the event of a short circuit or severe mismatch, the Sentry Monitoring circuit will protect the output transistors from failure.

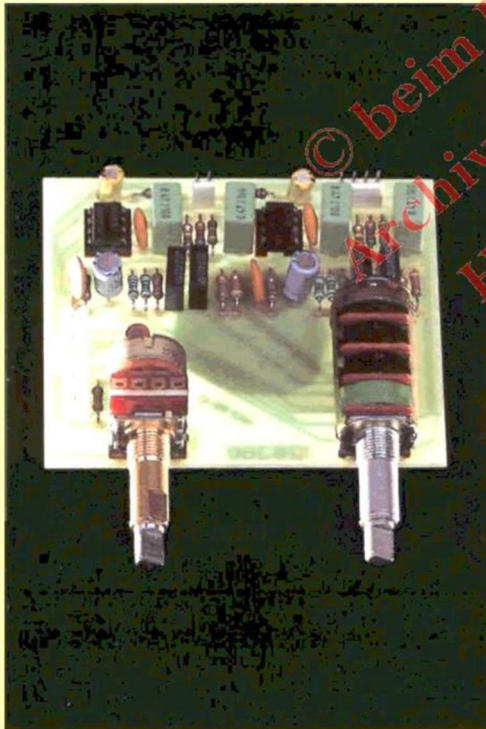
* **High Fidelity** July 1982

**** McIntosh research, engineering and design for the McIntosh C 33 Control Center has developed circuits covered by these U.S. Patents: 4,065,682; 4,048,573; 3,526,847; and 3,526,846.**

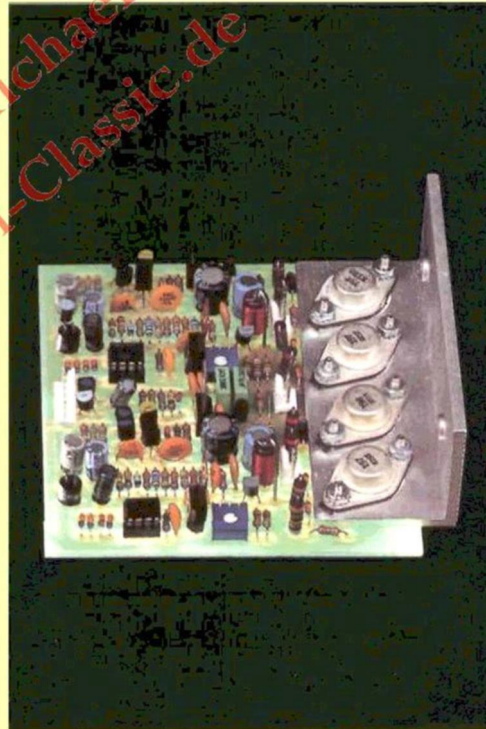
MCINTOSH PEOPLE MAKE THE DIFFERENCE

In a world of mass produced merchandise McIntosh is a welcome relief. Since 1949, all McIntosh instruments have been and still are hand made, one by one, with as much care and dedication as if each were the only one. There is no production rush at McIntosh for handcrafting takes time. The personal pride of the crafts-person is built into each McIntosh. Handcrafting gives you longer life, more performance and more value.

At McIntosh, each of us knows that McIntosh is the world leader in technology performance, reliability, long life and consumer protection. Each of us is responsible for product quality. Each of us knows that a price of leadership is the *constant struggle for excellence*. Each of us is dedicated to giving you the *excellence* in performance you expect and the *excellence* in value you deserve.



The compandor circuit and control, the loudness circuit and control, and the balance control are incorporated on this one compact epoxy fibreglas board. As with all circuit boards. It is interconnected with plug-together cables to prevent soldering malfunction.



The power amplifier along with the speaker and music protecting POWER GUARD and SENTRY MONITOR circuits are mounted on this circuit board. Notice the heat sink which is intimately engaged with the entire chassis to rapidly dissipate any heat generated.

PERFORMANCE LIMITS

Performance limits are the maximum deviation from perfection permitted for a McIntosh instrument. We promise you that when you purchase a new C 33 from a McIntosh franchised dealer, it will be capable of or can be made capable of performance at or exceeding these limits or you can return the unit and get your money back. McIntosh is the only manufacturer that makes this statement.

PREAMPLIFIER SECTION

FREQUENCY RESPONSE

+ 0, - 0.5dB from 20Hz to 20,000 Hz

MAXIMUM VOLTAGE OUTPUT

10 volts from 20Hz to 20,000Hz

TOTAL HARMONIC DISTORTION

0.01% maximum from 20Hz to 20,000Hz at rated output

SENSITIVITY

Phono- 2mV for 2.5V rated output
(0.4mV IMF)

High Level- 250mV for 2.5V rated output
(50mV IMF)

SIGNAL TO NOISE RATIO, A-WEIGHTED

Phono- 90dB below 10mV input
(84dB IMF)

High Level- 100dB below rated output
(86dB IMF)

MAXIMUM INPUT SIGNAL

Phono- 100mV
High Level- 10 volts

INPUT IMPEDANCE

Phono- 47k ohms and 65pF capacitance
High Level- 50k ohms

EQUALIZATION CONTROLS

Variable 12dB boost to 12dB cut at center frequencies of 30, 150, 500, 1500, 10k Hz

COMPANDOR RATIOS

From 1:2 compression to 2:1 expansion

LF FILTER

Flat or roll-off at 12dB per octave below 50 Hz.

HF FILTER

Flat or roll-off at 12dB per octave above 7,000 Hz.

MONITOR AMPLIFIER SECTION

CONTINUOUS AVERAGE POWER OUTPUT

20 watts per channel into 8 ohms, from 20Hz to 20kHz, at 0.01% maximum harmonic distortion

FREQUENCY RESPONSE

+ 0 - 0.2dB from 20Hz to 20,000Hz

SENSITIVITY

750mV for rated output (170mV IHF),
input impedance is 27k ohms

SIGNAL TO NOISE RATIO, A-WEIGHTED

100dB below rated output (87dB IHF)

SEMICONDUCTOR COMPLEMENT

31 Bipolar Transistors

76 Field Effect Transistors

35 Integrated Circuits

107 Diodes

1 Silicon Controlled Rectifier (SCR)

AC POWER OUTLETS

2 current-sensing, 100 watts, green

4 switched, 1200 watts total, black

POWER REQUIREMENTS

120 volts, 50/60 Hz, 25 to 85 watts

MECHANICAL INFORMATION

SIZE:

16 inches wide (40.6 cm) by 5-7/16 inches high
(13.8 cm) by 13 inches deep (33.0 cm), including

PANLOC shelf and back panel connectors. Knob clearance required is 1-1/2 inches (3.81 cm) in front of the mounting panel.

FINISH:

Front panel is anodized gold and black on white flint glass with special gold/teal nomenclature illumination. Chassis is black.

MOUNTING:

Exclusive McIntosh developed professional PANLOC

WEIGHT:

26 pounds (11.8 kg) net, 38 pounds (17.2 kg) in shipping carton.

Franchised Dealer:



MCINTOSH LABORATORY INC.
2 CHAMBERS ST., BINGHAMTON, N.Y. 13903-2699
607-723-3512