

REVIEWS: TECHNICS A/V RECEIVER MCINTOSH AMP & PREAMP

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SOUND

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EXCLUSIVE INTERVIEW
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*'The McIntosh C40 and MC500 Swing to the beat
of a different drummer'*

-Anthony H. Cordesman

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McINTOSH MC500 AMP AND C40 PREAMP

Unpacking the McIntosh C40 preamp and MC500 amp was like opening the front door and greeting old friends. The first piece of "high-end" equipment I was able to afford was a used McIntosh preamp. I still rely on a slightly modified McIntosh MR71 tuner, a unit that was excellent not only during its heyday but long afterward.

The C40 and MC500 have the features and styling I am accustomed to expect from McIntosh. While Mac equipment may include the latest technology, its black chassis, feature-filled front panels of the preamps, and illuminated meters on the power amps are all familiar signs that McIntosh designs for the carriage trade rather than for high-end fanatics. McIntosh equipment puts the user in control, instead of imposing the designer's ideas on the buyer.

The McIntosh C40 Control Center is anything but an audio purist's product. For \$3,250 it offers virtually every feature you could want. For example, with the tone controls, you get the equivalent of a small equalizer with five controls centered at 30, 150, 500, 1,500, and 10,000 Hz.

You also get a phono input, eight high-level RCA inputs, one balanced input, and one balanced output. You can control up to three tape recorders. There is a variable loudness control, a switch to choose between various stereo and mono modes, and a compander to expand

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or compress the sound. The C40 can use remote relays to switch between two speakers, has a 20-watt stereo headphone and monitor amp, and lets you switch the equalizer and/or compander into the recording circuits. In fact, there are more features than I have space to describe.

Beautifully made, the C40 uses top-grade resistors and capacitors in its sophisticated circuitry, with up-

dated electronic switching of all signals. The phono preamp uses an IC op-amp with a differential input stage that has high open-loop gain; this allows the use of a large amount of negative feedback to reduce noise and distortion and provide precision RIAA equalization. Although the phono preamp does not have the gain and impedance settings to permit the use of low-output moving-

coil cartridges, it does work well with any cartridge of more than 2.5 mV output, is extremely quiet, and can accept up to 90 mV input without overload.

High-level signals go past the input and mode switching and are fed into the loudness-contour amp. An integrated-circuit op-amp is used with two active-feedback loops, one with flat frequency response and

one with loudness compensation. This circuit provides 20 dB of gain and allows you to choose between zero loudness compensation and whatever level of compensation you have dialed in to match your listening setup. Signals in the "listen" program path go directly to the compander, through the "listen" processor circuit, and then to the volume control, the balance control, and then the equalizer, which feeds the outputs.

The compander uses a voltage-controlled amplifier (VCA) as a variable gain block; control voltages for the VCA are taken from samples of both the left and right input signals. The electronic signal processing includes band-shaping, logarithmic conversion, full-wave rectification, level setting, expansion or compression ratio regulation, attack timing, and d.c. amplification. The resulting processed voltage controls the gain of the VCA to cause logarithmic gain expansion or compression.

You do pay a slight sonic price for all these control features. Although the C40 is rated as having less than 0.002% IM or harmonic distortion, some preamps offer cleaner and more detailed sound. The C40 is a very good unit, but it does not quite reach the level of transparency and natural dynamic life of its top high-end competi-

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tion. I also found the loudness control to be largely irrelevant. A modest use of the equalizer controls did a much better job of correcting frequency problems, and I don't like the kind of low-level listening to background music for which the loudness control seems intended. That said, the other features of the C40 offer very real alternatives to the purist approach to preamps.

I know many audiophiles feel that tone controls and equalizers are anathema, but the tone controls on the C40 are truly valuable. A light touch of the midrange controls or a careful adjustment of the low bass control can correct for some speaker or room problems. Like the somewhat similar

controls on Cello's Palette preamp/EQ, the controls on the C40 can be very valuable in many real-world systems. Further, they are flexible enough to correct timbre problems in a number of recordings—for example, in touching up the sound of old tapes or 33 $\frac{1}{2}$ - and 78-rpm records.

The C40's compander is equally useful. It is unnecessary with many recordings, but a touch of expansion does a surprisingly good job of opening up the sound of many mediocre recordings and giving new life to what may be an old but great performance. It can add life, dynamics, and openness to the soundstage. Similarly, a little compression can add a merciful touch of musical realism to hard-sounding or close-miked recordings. The result may not be exactly what is on the recording, but it does improve the illusion of listening to live music.

In short, the C40 offers excellent features and very good overall sound—with no trace of hardness and just a slight touch of warmth. It is one of the few control centers on the market that can actually play a useful role in improving the sound of music. In a world where far too many high-end products compete to provide exactly the same features, the C40 stands out as one of the few real alternatives.

The McIntosh MC500 stereo amplifier sells for \$6,250. It is anything but cheap, although it is a powerhouse that delivers 500 watts per channel into 8 or 4 ohms and offers many of the features of McIntosh's top solid-state mono amplifier, the MC1000, for about half the price.

There isn't sufficient space to go into all of the relevant design details and features, but the MC500 is capable of peak currents of 112 amperes, and its harmonic and intermodulation distortion specifications are excellent—less than 0.005% each. It has very sophisticated protection circuitry along with thermal control that eliminates the need for fans and leads to more silent in-room operation. Power Guard circuitry prevents any risk of clipping (and destroying a speaker driver in the process).

The MC500 is also one of the few solid-state amplifiers to use autoformers as output transformers. This ensures that the optimum load is presented to the output transistors, so that extra current doesn't flow and cause extra heating of the power transistors. You also get an optimum

match with any normal-impedance speaker. There is protection circuitry to prevent any output transistor's failure from putting d.c. into the autoformer, conducting it instead directly to ground.

The MC500 has balanced and unbalanced inputs, and can be bridged to become a 1,000-watt mono amplifier. Its power on/off switching can be remotely controlled by the C40, and the styling is as good as that of any component I have seen.

The feature I find irresistible, however, is the set of two illuminated 5 $\frac{1}{2}$ -inch meters on the MC500's front panel. Admittedly, I have no idea what use you put these meters to, since your ear is just as useful. Everyone

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IN THE PURIST CAMP,
THE C40 AND MC500
SHOWED ME THERE'S A
GOOD CASE FOR LUXURY.**

is a sucker for something, however, and I have loved watching needles dance since the days I used to do sound engineering.

This amp has the authoritative power to drive virtually any speaker around and to do so with great dynamic life. It can produce the deep, extended bass you expect from the best power amp, and its midrange is smooth—without upper midrange dryness. This is one amp that has no suckout in the lower midrange or upper bass, and the upper midrange and treble are detailed, without emphasis or overemphasis.

As with the C40 preamp, you can find electronics that are a bit cleaner sounding, have a slightly better subjective signal-to-noise ratio, and get just a bit more apparent detail out of recordings. There are also amplifiers with larger soundstages and a bit more transient energy. At the same time, the MC500 does an excellent job of striking a golden mean between various sound characteristics. It has the kind of neutral overall balance that makes recordings sound like music. Further, not only was the MC500 compatible with every speaker I tried, but it also had an unusual ability to control speakers in ways that got the best out of their bass performance.

Most of the high-end amplifiers and

preamps I review reflect the designer's view of how best to remove every vestigial sonic coloration from the signal path. Like a Ferrari, the result can be extraordinarily exciting, but it is not always the kind of excitement you want to live with on a daily basis. In contrast, the McIntosh C40 and MC500 swing to the beat of a different drummer. They really are "Rolls-Royce" products,

substituting luxury for excitement, and are designed to make listening easier.

As an audiophile whose tastes normally lie in the purist camp, I admit that the C40 and MC500 prove there is a great deal to be said for luxury. The purist approach inevitably means inconvenience in terms of room placement, the inability to use controls to correct for minor irregularities in

frequency response, and the need to listen to superior recordings to the potential exclusion of less well-recorded but better performances. The McIntosh C40 and MC500 are reminders that audio equipment exists to aid in reproducing music, not vice versa. And then there is the allure of those meters.

Anthony H. Cordesman