



“It took long enough,” as I said to Larry Fish and Roger Stockholm.

McIntosh Laboratory<sup>1</sup> has waited nearly 40 years to introduce its first totally new tube preamp since the C22, which was in production from 1963 to 1972. I was in college in 1963—more or less penniless, drooling over Mac gear in the windows of a shop in Providence, Rhode Island. Better graduate. Get a job. Make some dough. Buy some Mac tube gear.

Oops. Too late.

By the time I could afford new Mac tube gear, in the mid-70s, Mac was making only solid-state. I could have bought used. Probably should have. Everyone then, though, was saying halleluiah, good-bye tubes, good-bye trouble, hello solid-state. Len Feldman, Julian Hirsch—even our own guru, J. Gordon Holt. You don't argue with the experts, right?

I have long lusted after McIntosh tube gear, so I was delighted when, in the early 1990s, McIntosh revived their MC275 power amp—the very amp I wanted to own back in my college days—and then, several years later, the C22 preamp. These were reissues—close, if not exact, replicas of the originals. I never did try the C22 reissue, but the MC275 Commemorative remains a staple of my collection.

For the company's 50th anniversary, in 1999, McIntosh commissioned Sidney Corderman (who engineered the original and reissue of the MC275) to design the MC2000 Commemorative power amp. The amp was about a year late and went for \$15,000. The MC2102 power amp followed, for a mere \$6000—also designed by Mr. Corderman.

Now, of course, McIntosh dealers and customers wanted a tube preamp.



McIntosh C2200 tube preamplifier

### For the McIntosh C2200, Sidney Corderman engineered the tube circuits and Roger Stockholm worked on the rest.

Hence the \$4500 C2200, meant to be matched with the MC2102 or the MC2000. (For MC2000 owners, a special edition of the C2200, with gold-plated endcaps and knobs, is available.)

“The C2200 is currently our best-selling preamp,” Larry Fish told me. You've met Larry before. He's McIntosh's vice president of product planning.

“Selling more briskly than solid-state, eh?”

I had to rub it in. Larry is so solidly solid-state.

“We can't make them fast enough. We're back-ordered.”

I had a very hearty laugh.

“I knew you'd find that amusing,” Larry said.

“Almost as amusing as the fact that Roger Stockholm was project engineer for the C2200.” If anything, Roger is even more solidly solid-state than Larry. Or was.

Roger's official title is senior electronic design engineer. He joined McIntosh 31 years ago, just as the last of

the original C22s was going out of production. Naturally, he started designing solid-state products. Roger has been project engineer for almost every McIntosh preamp since the C32, in the late 1970s. Until the C2200, he'd never touched tubes.

The company teamed Roger up with the legendary Sidney

Corderman, Mac's Mr. Tube. For the C2200, Sidney engineered the tube circuits and Roger worked on the rest.

“It was a collaborative effort,” Roger told me, involving Larry Fish and Chris Bomba, McIntosh's senior software engineer.

“Has Sidney turned you into a tube believer?” I asked Roger.

“I've come around a bit,” he admitted. Hesitantly.

“If I had predicted five years ago that you, Jolly Roger, would be project engineer for a new McIntosh tube amp for the 21st century, what would you have said?”

“I'd have said you were crazy.”

I first met Roger three years ago, when he and Larry delivered a McIntosh C42 preamp for me to audition with the MC2000. Poor Roger. He was so proud of his preamp, which was quite nice and remains in production, but all I had eyes for was the tube amp. (By the way, Roger and Larry are new hires compared to Sidney, who has been with McIntosh Laboratory since its founding, in 1949.)

The C2200 retails for \$4500, and I find it hard to imagine that any McIntosh enthusiast wouldn't want to own one—even fans of Mac's solid-state amps.

Tubes aren't as troublesome as they're sometimes made out to be—especially the small ones typically used in preamps. (The C2200 uses four 12AX7 and four 12AT7 tubes.) Such tubes can last for a decade or more, and are easy and inexpensive to replace. They don't give off anywhere near the heat of, say, a KT88 or 6550 output tube.

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The C2200's front panel measures 17" wide by 7 $\frac{1}{8}$ " high, and the preamp is 14" deep and weighs 26.75 lbs. The high-level (or line-level) circuitry uses two 12AX7A tubes and two 12AT7A tubes. Ditto for the moving-magnet phono stage: two 12AX7As, two 12AT7As. The phono tubes come on only when you select the phono input. If you don't use the phono input, you won't be burning tubes for naught.

Because the C2200 is a Mac product, there's every user-friendly feature you could dream of, as well as features you couldn't dream of but might actually use. The MM phono stage is standard—you don't pay extra. There's a Mono switch. There are Bass and Treble tone controls.

I asked Roger and Larry who's buying the C2200.

Not just tube-amp customers, it turns out, but owners of Mac solid-state amps, too. Roger Stockholm, erstwhile solid-state stalwart, explained:

"You can get your tube sound in the preamp and then you can have bang for the buck with a solid-state power amp."

"Tube sound? So there is a tube sound?"

"Larry warned me I was in for a terrible ribbing."

Roger *has* come around... a little.

The C2200 has a busy rear panel. There are six pair of outputs—three balanced, three unbalanced. Mac knows many of its customers are into multiroom installations, so the C2200 can be configured to control a second power amp in a nearby room. The extra outputs might be useful for devices such as powered subwoofers, too. You won't go wanting.

There are four pairs of balanced (XLR) line-level inputs and six unbalanced (RCA) line-level inputs. And if you reconfigure the phono stage to be line-level, you've got *seven* available RCA line-level inputs.

The C2200 is not fully balanced from input to output. Not that this matters much, because the preamp is so quiet. Larry recommends using balanced connectors with long cable runs—say, from your preamp to power amp. Any noise the cables will pick up will be nixed by common-mode rejection.

The phono input can be reconfigured by the user to serve as an additional line-level input. There's a headphone jack, using an ICE buffer that lowers the high impedance of the line-stage tubes. There's full remote control. And you can trim the inputs so the line levels match in loudness.

At first glance, a visiting manufacturer of tube gear mistook the C2200 for a power amp. That's easy to do—there are twin McIntosh "blue-eye" power-level meters. The C2200 sports the familiar Mac glass faceplate. Labels for the various control functions are illuminated in white on black. A digital read-out displays the input selected. Few preamps look so sexy in the dark.

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But...power-level meters?

Customers want them, said Larry Fish. "We made them useful," he hastened to add. "The meters are calibrated so that '0' represents full output at 2.5V. If your power amp's input sensitivity is 2.5V, then a '0' reading on the preamp's meters will represent the amplifier's maximum rated power."

"But do you really *need* the meters?"

"Well, on some McIntosh amps you don't have meters. Your MC275, for instance."

I can see other uses for the meters—to check the channel separation and channel balance of your phono cartridge, for instance. You can dim the meter lights or turn them off completely, if you like. You can also dim the digital display.

I installed the C2200 in my main system, whose AR ES-1 turntable with SME309 tonearm and Shure Ultra 500 moving-magnet cartridge were perfect for the C2200's MM phono stage. For digital, I used a Rega Jupiter CD player as transport with the Musical Fidelity A3<sup>24</sup> upsampling DAC. Speakers throughout my listening were my reference Quad ESL-989 electrostatics.

I usually have trouble writing about preamps. Some designs—especially less expensive ones—have a tendency to intrude. If they're tube, they might be noisy. If they're transistor, they might impart a metallic haze. I've been big on passive preamps, especially for audiophiles on a tight budget.

Surprise, surprise—the C2200 was so quiet I thought I was listening to my Purest Sound Systems 500 dual-mono passive unit. I heard no noise at all through the line-level inputs, even with the volume cranked way up. (Of course,

I heard some noise when I selected the phono input, but not much.)

Larry explained the C2200's silence: It's the microprocessor-controlled post-attenuator stage. He believes that the C2200 is the only tube preamp that has one.

"Under normal listening levels, the C2200 is essentially a straight wire. The post-attenuator is working full blast and you're listening at 12dB down from full gain. If you need more gain to blast the house apart, then turn up the volume and the post-attenuator starts being gradually removed. This allows you to get high volume out of the preamplifier, if you need it, but low noise under normal listening conditions. By reducing gain, the post-attenuator reduces noise. That's what makes the C2200 so quiet."

Larry paused.

"You're an old-timer, Sam..."

"Gee, thanks."

"Well, you're probably old enough to remember preamps that had output attenuators. There were individual volume controls for left and right channels and then a master volume control. The master control set the overall gain of the preamp, and it was used to add gain only if necessary. In the C2200, a microprocessor does this automatically and you don't have to think about it. As you turn down the volume control, the microprocessor reduces gain."

The digital display reads from 0 to 100, but there are actually 214 volume-control steps. "You can set the volume in half-dB steps." From your easy chair, of course. If you turn the volume up or down very slightly, it might not show on the display.

"A lot of thought went into the volume control," said Roger. "We used to have a certain taper that we used for our mechanical volume controls. As we introduced electronic volume controls, we made the action linear through a long range. But there wasn't much action at the lower end. Linear all the way through wasn't really desirable, so we changed the way it works. That's the beauty of software: we build in the taper, or curve. The C2200 basically duplicates the old mechanical volume control."

"That's right," added Larry. "The volume-control curve was developed over the years to come on very quickly. What we did was replicate the mechanical action with software so that the same rotation gives you the same result. For instance, if you go to the three o'clock position on the C2200's front panel, the volume will be as loud as it would with a mechanical control."

“The advantage of the software is we are able to maintain the half-dB resolution,” Roger pointed out. “This would be impossible with a mechanical control.”

As I said, the C2200 sounded quiet—almost as if it weren’t there. Compared to my Purest 500 passive preamp, the C2200 imparted more *oomph*, more body to the sound. Yet at no time did the Mac seem to color the sound—to roll off the highs, for instance, or fatten the bass. It did not add extra warmth. The C2200 seemed neutral without

## If LPs are a secondary, occasional source, then the C2200’s phono stage might be all you need.

being clinical. Another thing: the C2200 did not impart any tube glare, a problem with some tube preamps I’ve heard over the years. It did not overly brighten the sound.

I went back to the Purest 500, using the Rega Jupiter CD player into the Musical Fidelity A3<sup>24</sup> DAC. I felt that the C2200 enhanced the presentation, giving the sound more body, as I said, and taking off some of the otherwise transistery edge. In a well-designed preamp, tubes tend to be harmonically restorative.

Roger had said that I could get my tube sound from the C2200 and bang for my buck from solid-state. That’s true to some extent, and maybe more so with McIntosh gear than with other brands. Mac solid-state power amps, after all, have transformer-coupled output stages: they’re built like tube amps.

There was certainly no penalty in terms of noise.

“Our goal was to make a tube preamp and have it be as good as solid-state,” Roger told me. What’s actually happened, I think, is that McIntosh has made a tube preamp that exceeds what, for \$4500, would have been possible in a solid-state design. But I couldn’t get Roger or Larry to admit that.

“In the past,” said Roger, “there have been problems with a tube preamp hooked up to a transistor power amp. You had to turn on your preamp, wait for it to warm up, and then turn on your transistor amplifier. Your amplifier was ready to go before your preamp was.”

In the C2200, a delay circuit mutes the preamp for about 30 seconds, during which “TUBE WARMUP” appears reassuringly in the digital display.

Larry Fish: “Electromagnetic switching has a good deal to do with the fact there are no clicks and pops. All switching capabilities of the preamplifier are electromagnetic. This is far more reliable than the usual mechanical switching because the switches themselves are in an inert atmosphere.”

“Almost like a vacuum tube?”

“Not quite. The switches are in a glass chamber filled with nitrogen. Wires are suspended in the chamber, and the electromagnetic field brings the two wires together for contact.”

“Electromagnetic switching is super-reliable,” Roger added, noting that if a switch is going to fail, it usually does so right away—on the bench, at the factory, before it gets out into the field. McIntosh pioneered the use of electromagnetic switching nearly 20 years ago, Larry told me.

The C2200’s line-stage performance was superb. I couldn’t ask for more. But what of the phono stage?

Less than stellar.

Though it’s nice to know it’s there, many C2200 owners will have no need of a phono stage; it probably made no sense for McIntosh to pull out all the stops and provide exceptional phono performance. As it was, I thought the C2200’s phono performance was very good—quite acceptable, in fact. Just not stellar.

I’ll put things in perspective: You could pay \$4500 for a line-level preamp, not get any phono stage at all, and have nowhere near the convenience features offered by the McIntosh C2200. You could pay \$4500 or more for a phono stage alone. What the C2200 offers for “free” is not at all bad.

But, using my Shure Ultra 500 in the SME 309 arm on an ARES-1 turntable, I preferred the sound of my long-term reference, the AcousTech PH-1 phono stage, available for \$1200 directly from Acoustic Sounds. I heard tighter, better-defined bass. The C2200’s phono stage sounded slightly muddy by comparison. I heard better definition and detail overall, a more natural, more spacious presentation of, er, space. More “there” there, in other words.

A lot might depend on your phono needs. If LPs are a secondary, occasional source, then the C2200’s phono stage might be all you need. The sound was full-bodied and dynamic. But compared with the AcousTech, the C2200’s

onboard phono stage seemed to accentuate surface noise. The grooves seemed quieter with the AcousTech.

Remember, if you don’t use the C2200’s phono stage, the four tubes in the phono section won’t turn on. And if you reconfigure the phono section as an additional line-level input, they’ll *never* turn on. You could easily add an onboard phono preamp and let the onboard phono section lie dormant.

The C2200’s phono stage provides 40dB of gain. The phono sensitivity is given as 4.4mV for 2.5V output at 1kHz. In addition to moving-magnet cartridges, you can probably use most medium- to high-output moving-coils. Using the additional gain available from the line stage, you might even get by with a low-output (maybe below 1mV) MC. But you’d probably have to put up with some noise. Of course, you could always use a step-up transformer.

Meanwhile, I’m not sure I ever heard the outboard AcousTech phono stage sound better, which is a tribute to the C2200’s line-stage quality.

I found using this preamplifier a pure pleasure. I welcomed the Bass and Treble controls, which offer 12dB of boost or cut at 30Hz and 10kHz, respectively. The tone controls are effectively out of the circuit at the center detente position. There’s also a Tone Bypass button. There’s a practical reason for this switch, says Larry. “You can put in some bass boost, for instance, and A/B back and forth between Tone Bypass to see if the boost is what you want.”

There’s also a feature that, as far as I know, is unique to McIntosh: A programmable feature called Autotone can memorize whether you want the tone controls on or off for each output. Autotone even remembers the bass and treble settings for the particular input. Need some treble cut with CDs or DVDs? Some bass cut with LPs? No problem. I’m not sure I’d ever use Autotone, but who knows?

I probably wouldn’t use Pass Through, either, but I can imagine some audiophiles doing so—especially those who want to enjoy their audiophile two-channel purity and their surround-sound home theater, too. You engage Pass Through by programming this mode as one of your inputs. The C2200 then passes the left and right channels to your left and right front speakers. In other words, your surround-sound processor will control volume, source selection, etc.

Other features include the ability to drive multiple power amplifiers. You can have the C2200 control the main

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line-stage preamps  
I have ever used and  
the most user-friendly  
in terms of features.**

power amp in your listening room, for instance, and a separate amp in a room nearby, as explained in the owner's manual (downloadable as a pdf file from [www.mcintoshlabs.com](http://www.mcintoshlabs.com)). Better yet, have your dealer demonstrate.

I loved many of the C2200's convenience features. When you run a power-

control cable from the C2200 to your Mac power amp, you can have the pre-amp turn the power amp on and off. Nice for lazy folks like me. You can also have your preamp turn on your Mac CD player and/or tuner. The same remote control that controls your C2200 can control your Mac CD player and tuner. McIntosh customers do like their comforts.

Don't let this panoply of features put you off. I found that they never intruded — they were there if I needed them, but weren't in my way if I didn't. A preamp, especially, should be about convenience, no? It's a control center, after all. Once I had everything hooked up, I found the C2200 easy and intuitive to use.

The McIntosh C2200 was one of the finest line-stage preamps I have

ever used, and far and away the most user-friendly in terms of features. I don't think you'll find a better tubed line-stage for \$4500 — the C2200 merits a Class A recommendation for this reason alone. As for LPs, the C2200's onboard phono section may be all you need. It wouldn't be fair to deny the unit as a whole a Class A rating because McIntosh has included this more-than-acceptable phono stage for "free."

"I'd put this preamp in my own system," said Roger Stockholm with pride.

So would I. In fact, I plan on keeping the review sample to use with my MC2102 tube amp. This new McIntosh tube preamp was well worth the wait of nearly 40 years.

And yes, I *had* been waiting all that time. ☒



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