

# **THE RECORDED SOUND SUCKS - WE'RE TRYING TO MAKE IT BETTER**

## **A Conversation about The Fundamentals of Audio with Walter Sear**

By Bren Davies

It was a wet, shitty late November afternoon as photographer Brian Silak and I made our way across Manhattan's West 48th Street to the legendary New York recording institution known as Sear Sound. Actually, it was my 31st birthday and I thought I would treat myself to an interview with Walter Sear, owner and operator, as well as a frequent email advisor of mine ever since I had inquired a year earlier about an assistant engineering position at his studio.

What followed was a fantastically protracted conversation (what was supposed to have been a one-hour long interview exploded into a three hour and forty minute tour not only of Walter's studio, but of his entire career in music and engineering). I have done my best to cull through the material in its entirety in order to bring you, dear reader, the very best of what this highly erudite, critical listener and thinker had to say regarding the state of the Music and Recording Industry today.

There is so much that I can only gloss over for lack of time and space - the 70s style wood and cork paneled vibe of the studio's waiting area, hallways and rooms. The signed Yoko Ono artwork on the wall. The original hand-drawn "art" posters from films which Walter and Roberta had done in the 80s: "Cathy's not scared. She should be. She's one of THEM! Lurkers." Walter's initial greeting, which actually segued into a lecture on a chemical engineer's approach to providing the client with the best possible coffee from a stainless steel industrial-size coffee maker. The oldest Apple McIntosh computer still in use in the Western Hemisphere (or so it seemed). Walter's patent for a desalinating system, to make fresh water from ocean water for Third World countries. The intimate details of his incredible collection of 235 microphones as well as the vintage, mainly vacuum tube gear, for which he is justifiably famous in our circle. His lengthy discussion of how in the old days, the EQ sections on a console were referred to as the "correctional devices" -- and were only used if someone, the engineer, had made a mistake via improper microphone choice or placement - rather than as a sculpting mechanism to make up for inconsistencies in the recording or mixing chain, as is commonplace today.

Still, I hope that what I have left in will facilitate a serious contemplation of where Walter feels the Industry has gone wrong in recent years - as well as point to possible solutions for a future shaped by an informed listening public and a younger generation of historically-informed engineers.

## **THE SAME GODDAMNED PUNCHLINE, or AMATEUR MEANS "LOVE OF..."**

WS: You want your lead? Your lead is: Digital technology has brought music back into the home; it should stay there.

**TO: Explain.**

Well, you know...Bad is bad. We always had home tape recorders. I bought my first home tape recorder when I was in the Air Force. I did recordings, but I never was conceited enough to think I was doing professional recordings. And that's the big difference. The Industry, to quote my friend and buddy Russ Hamm, is no longer an industry of professionals. We gave that up about 15 years ago. So, it's become an amateur thing. And it's very good as a music educator - you're always trying to get music back into the home. Well, we've done it. Now everybody has a nice home studio. The only trouble is, they've been told by the salesmen that sell them the equipment that they're doing "professional recording" - and this is the furthest thing from the truth. I would not go to an amateur brain surgeon who had read a book and a few of the medical advertisements and have brain surgery done.

**Yeah, that would be bad.**

The old system which no longer exists was, you'd come in as a runner/cleaner, and the assistants would talk to you occasionally and you'd begin to pick up little things. Then an assistant would get sick and they'd put you in a control room with a master engineer and you'd watch for two years. You'd watch what he did, and follow his instructions, and learn the microphones, and learn the setups - and learn maintenance, of course. We all came into the business [this way]. My first job was at Fine Recording. I remember when I was interviewed and [Bob Fine] said, "Where did you get your EE degree?" and I said, "Sorry - I'm a Chem E." And, you know, everybody's nose went up in the air. But they had seen me in the studio -

**Many of the newer engineers today don't come from technical or electrical engineering backgrounds.**

But we were. I was a Chem E - and they let it slide.

**There is a certain level of sophistication which goes along with that.**

Well, you're supposed to know physics. There's no question about knowing Ohm's Law and the math that goes with it, because we were building our own equipment - and I still am. It's back to my original theme: the Industry has become totally ignorant. Nobody knows anything anymore. And the question will come up: Who died and made me God? Why am I spouting?

**I think that you have a certain aesthetic to it all which people admire.**

Well, I have the training for it. If I'm putting down home studios, it's an amateur thing. It should be considered that. Amateur means "love of." If you have a love of it, that's fine. But don't kid yourself. It's not comparable to a good professional studio.

**There's a certain pride that you have from all of the time you've taken.**

First thing is, I worked as a professional musician for 45 years in New York and I supported my family.

**As a tuba player?**

As a tuba player. 4 years at Curtis Institute, a stay with the Philadelphia Orchestra -

**And you were in the pit at Radio City for a while.**

Six years. Four shows a day, six days a week. It's the discipline of engineering and of music - which are identical. The discipline is the same. If I resent what is happening in the Industry now, it's because it's instant gratification. Take it out of the box, don't read the manual, plug it in, and fiddle around.

**And you really can do that.**

It isn't the equipment that makes a recording engineer. It's the engineer. Of course. It's your skills. I've been in situations with a couple of SM57s - which is an excellent microphone - I was in a situation where I didn't have a world full of equipment to deal with. If you've got ears and a little bit of time,

and your microphone settings...But you have to know what you're going for. You have to have a vast amount of experience, so you can draw on that.

**Where do you think someone today can get that experience?**

You can't because the studio system died. And it died for economic reasons, because you can't compete with free.

**From reading your "What Have They Done to My Art?" series on your website, it would seem that the Industry today is being unduly influenced by salesmen, as you would refer to them, saying that CDs and 44.1 are an increase in sonic fidelity, an improvement in sound quality. Throw away your vinyl, throw away everything...**

It's silly.

**In your mind, it's a degradation. The gap has been widening, and in a very negative way -- between the fidelity which people used to be accustomed to hearing and recognizing as good music, and what is available today for people to listen to -- or to even approach thinking that "this is good music."**

It's high rents. You don't have as much room to store -

**And vinyl takes up more room, obviously. Tape takes up more room. Two inch tape boxes take up a lot of room.**

19 years ago at an Audio Engineering Society meeting, they were discussing digital standards. I got up and I ranted and raved. Afterwards a couple of engineers from Sony took me aside and said, "You're right. But hi-fi sales are flat, record sales are flat, and we have to do something to revitalize the Industry. So we'll change the technology." I have no argument about that. But as far as it's being better, unfortunately the advertisements came out and said "This is as close to the master tape as you can get." In 1911, there was a picture of Enrico Caruso standing next to a Morning Glory Horn, RCA. "I couldn't tell it from my own voice." How about that - 1911.

**Isn't it amazing how as the technology changes, the public's understanding of what is "real," or what is a close approximation thereof, changes as well.**

It's what they're told.

**And people are so willing to accept.**

RCA, 1911. It's the same Goddamned punchline.

## **MUSIC IS NOT AVERAGE or YOU CAN'T COMPETE WITH FREE...**

**I heard you were going to place an ad in Mix, which was really an essay on the shortcomings of digital recording.**

No. If they'd publish the article, I'd write it. I did the research. I can sum it up: cheap parts. You can do it digitally, but you can't do it with cheap parts. If your clock rate isn't rock solid, you're in trouble. The algorithm to fix the missing data also averages. Music is not average. In other words, if you have a piece of a sine wave here and another piece here and there is a speck of dust and you have a dropout, it might not be the mathematical average. Chances are in music it isn't. The bandpass, the frequency response - much, much too limited. It will improve as they go up to 192. The follow the dots becomes less follow the dots. There are more dots.

**Do you think that the move to 192 kHz will be closer to approaching "good" sound quality? At what point do you think it will approach enough so that the human ear will be incapable of telling the difference from a quality analog recording?**

When they put in good clocks. The clocking rate is the main problem now. And you can't have a good clock that's cheap yet. Someday, they'll work it out. Our studio clock rate is a crystal control in an oven that's kept at constant temperature and is never turned off. That gives us a fairly reliable clock rate. So, until you get that straightened out and until the dots get close enough so that the ear can't hear the difference. It's like the old dot matrix printers - you could tell it was an "O" with the little steps up and the little steps down - you could read it as an "O" - but it wasn't very elegant. And what we're lacking in digital is elegance. This isn't vacuum tubes. [Analog recording] is a 100 year-old technology. We've got it down pretty well by now. Digital, what - 20 years old? It's got a long way to go. It ain't right yet. Of course it's getting better. It's a scientific thing. Motivated by money. So it will get better. It has to. It still won't be cheap. Good is never cheap.

**Otherwise it would be free, which is what you can't compete against.**

You can't compete with free.

## **TUBAS and PICTURES GOING BY...**

I built tubas. I built 2000 tubas. I wrote an awful lot of brass music that's published. Brass quintets especially, because there was no literature at the time. I did a lot of things. I get bored easily.

**There is in fact a scholarship fund in your name for brass players.**

I get bored easily. What happened was I designed a whole series of instruments. I know a little bit about acoustics and instrument design. Well, I learned. It was a learn as you go experience.

**But the discipline from your previous education helped - and at that point you already had your chemical engineering degree?**

All of these degrees. I finished that by the time I was 21. I was married, I had finished most of my military obligation to the Air Force. We grew up a lot younger and faster. We had to. And then of course as a tuba player, you're always popular. There is always a shortage of tuba players. Got an athletic scholarship to play in the band on Saturdays for the football games. We lost every game. I hate football because of that. And in the summer I played every Italian feast on the East Coast. I was in one of the major feast bands. Every weekend, we were out playing in Baltimore, Boston - I made a nice living. And then I broke into the orchestra scene and was doing local orchestras around Philly. I didn't waste any time. I realized that nobody was going to support me. The government wasn't going to support me. My parents might have, but the last thing in the world when I left home was to ask them for money. I was also working as a copyist. On the cleanup runs, Broadway shows. When they would have previews, they would go to Philadelphia or Hartford and they'd do their cleanup runs - they'd clean up the scores and parts. I did Guys and Dolls in its cleanup run in Philadelphia.

**Tell me about your work in film and film sound. How did you get into that?**

I loved the technology. I was doing mostly commercial work. I had to work fast.

**For sound effects and things, or more musical projects?**

I did a lot of commercials. I don't know how many hundreds of

commercials. I was scoring and recording all the music for the Chevrolet sports cars for a bunch of years and they flew me out to California. I would compose all day and record - and then I'd meet with the film editor and he would cut the music in - and he would move it around to fit the action, and I would say, Whoa - Look at that! Pictures going by! And I got hooked.

## **MODULAR MOOG and BEACH BOY THEREMINS**

**So I'm curious how you transitioned your career from being a tuba designer, to a player/music copyist, to a film composer and then into the world of recording studios. When and how did that happen?**

When I was 12, I built my first crystal radio. I was always building hi fi amplifiers, from the time I was 12 on. I had a background in electronics. And, of course the physics and math from chemical engineering. It's all the same. The Laws of Physics, thank God, don't change. They're not political. So I fell into it. [Bob] Moog and I got together. He was a graduate student at Columbia taking his Masters and I was working on my PhD at Columbia -- which I never finished - in musicology. I began building a theremin. I needed some parts that he had, so that was the first time that I contacted him. He was working on his PhD in crystallography at that point at Cornell. He was a frustrated pianist. We got along very well.

### **Why theremins?**

I was curious about the theremin because it is the oldest electronic instrument. 1919. Leon Theremin -- whom I had the pleasure of meeting, by the way. Fascinating old man. Anyway, it was all because of Radio City Music Hall. I played 4 shows a day, and a movie went on in between. That gave me 2 hours to kill. You could either eat, play poker (there was a perpetual poker game), you could chase the 16, 17 year-old Rockettes -

### **Which I would have done.**

It was either that or you could do something productive with yourself. I wanted to do something productive. So I built a theremin. That's how I met Moog. Then I decided I'd better practice and learn how to really play it. It's a very difficult instrument. I began jobbing around [with it]. I was doing studio work and recording. I became the only thereminist in New York who owned a theremin and could read music. So I had the whole thing to myself. Anyway. Moog and I maintained the friendship and we went through some terrible adventures together. We had common interests in

music, and in electronic music. I was at a New York State School Music Association Convention somewhere up in the Catskills and I was showing my tubas. I said to Bob, Why don't you come up and put a theremin and some literature on my table? We got into a discussion about what ever happened to the synthesizer that was built by RCA in 1958 [the Mark II, housed at Columbia-Princeton's Electronic Music Center]. We began discussing it and of course, with modern technology, with transistors, it wouldn't have to take up half a room. Also I said to Bob the main disadvantage of that synthesizer, the RCA, was that you had to take it to a programmer who would punch paper tape - you had to program everything into that, like a piano roll. I said, Musicians will never accept this. Gotta have a keyboard. And the synthesizer was born.

### **The Modular Moog Synthesizer.**

If you look, by the way - I checked under Moog. He has his original shipping lists. I'm Number One.

### **For Modular Moog. So you actually got the first commercially produced Moog synthesizer.**

I helped build the first one.

### **It's amazing to have been on the cusp of that technology.**

Well, I wasn't always an old fart.

### **So this was the first ever Moog Modular Synthesizer?**

Still up, still running, still used.

### **It's amazing, the condition of the keyboard. This is all original, right?**

His father was a cabinet maker. That's why there's such nice woodwork on all of his stuff.

### **You've kept it in such pristine condition.**

Why wouldn't it be? It was used about 3 weeks ago. One of the groups came in and they wanted a whip-snap [Walter makes a noise here].

### **1967. Amazing. Now this is not a pitch bend, but a ribbon controller.**

Ribbon controller. There's an interesting story about where that came from.

In the early 60s, when we were selling theremins, the Beach Boys came around to my studio. They said they wanted to buy a theremin. I said ok. I got up and I played it. I was in practice back then. They said great, now we're going to try it. They got out there and of course nothing came out. You have to practice 3 or 4 years. They said, we're guitarists. We can't use this thing. So I wrote to Moog. In those days you didn't telephone; it was too expensive. I wrote to Moog and I said, hey - here's their problem. They want something like a fretboard. So he came back and he had this board with a variable resistor ribbon on it. The Beach boys came in. I plugged it into the theremin. I showed them. I remember taking a yellow grease pencil and [writing in the notes, dividing them with lines up and down the ribbon controller]. A, line. A#, line. B. And sure enough, they were doing fine. And Bob called it "The Stringer." And sure enough -

### **It showed up on "Good Vibrations."**

Well, they used it extensively on the road. But it was not a true theremin. They cheated a bit. So when we [Walter and Bob Moog] began building these guys [Moog Modular Synthesizers], we began incorporating it as a linear controller. And I use it in conjunction with the keyboard to give myself a variable vibrato.

### **Kind of like the modulation wheel on a MiniMoog?**

Well, I'd modulate the filter, or I'd modulate the amplifier to get an amplitude vibrato rather than a pitch vibrato, which is closer to real life.

### **I still listen to Switched on Bach.**

The music comes through.

### **There's a certain musicality of this instrument.**

No - of the artist. It's an instrument. You either make music on it or you don't. It has nothing to do with the tools.

### **Kind of like someone can sing in tune, but they are not necessarily making music? They can play piano, but they're not necessarily making music?**

Or you can record at home and not be an engineer. It's fine to play for your relatives, but it lacks. Occasionally, if you really intuitively work very well at home ---

**What do you think of someone like Tom Scholz, the guy from Boston, who recorded everything on the first album as well as later projects at home? Do you know that story?**

No, but I'm sure that if you have the talent, you can do it. You can make it come off. Absolutely. As a location soundman, you make it come off on films all the time. You get an impossible situation and you've gotta make it work - so you do. But, the training and skill and everything makes it much easier.

**Let's talk for a minute about The Copper Plated Integrated Circuit, your album. What was that all about?**

Command wanted me to do a series for them with Dick Hyman, Richard Hayman - and they wanted an album from me too. I liked working with Dick Hyman - there's a consummate professional. A guy who really was prepared. Then there was Richard Hayman, who was a great arranger and did some nice work - and Marty Gold. Good professional musicians and arrangers, who knew their stuff. It was a joy to work with these people because it made me work. It made me think. It made me work at my best. Those are the things I like most about being in the music business. The things I liked least were sitting in the pit at Sound of Music, doing eight "services" a week. It's a factory job. I didn't like doing commercials. I did them very well, but it was a totally unmusical...experience.

**So this album was basically a compendium of electronic music?**

Electronic music was very new at the time. This was a new sound.

**1969.**

Oh yeah. It was all done on the Modular Moog. It had a few live tracks here and there.

**HOW DO WE TEACH A NEW GENERATION OF ENGINEERS? or CLEANING A GOOD TOILET...**

**Let's switch gears for a moment. You're the oldest independently operated studio in New York.**

I think we're the oldest studio in New York. RCA and Columbia don't have studios anymore. They're the only ones that were older than I am.

**There seems to be a mantra that you keep going back to -- and it**

**does translate into all aspects of recording and mixing: You can't compete with free. And by "free," of course, we are referring to the unique situation of not having to pay for studio time when you are recording or mixing on a digital audio workstation in your own home studio...**

You can't compete with free.

**So you have to offer something so much better that the people who truly appreciate it will not even consider free as an option anymore.**

The limiting factor is people who appreciate it. That's the hard part, because by now you've been fed so much garbage that there's just no comparison anymore. You've had one whole generation whose ears have been polluted by bad digital.

**What's a remedy for that? How do people start over? How do people recognize what good sound is?**

It's too late.

**How do we teach a new generation of engineers?**

With the new technologies now, digital is improving. It's at a point now where it's almost tolerable. I think SACD has a great future. But at the moment it still sounds like - I hate to say it, but which shade of brown do you prefer? Well, it's true. It's bad. It's bad sounding. And that's why MP3 is so acceptable. Which shade of brown do you want?

**Before we can even have people appreciate a difference in the fidelity of different technologies, they have to recognize that it's bad in the first place, but they don't have a comparison post to know what's good.**

No, they've recognized it. That's why people have stopped buying records. CDs. Because the musical impact, the subtlety of the music is really in the extreme high harmonics that we can't hear - except they're there. 20K is a joke. We ride the subways. 14K. If you've been riding the subways for 5 years, your hearing is down to 14K. So why am I ranting and raving about 50 kilohertz? Because the overtones, the subtlety when a violinist goes from one note to another - it's a change in those overtones. They beat against each other. They produce subharmonics. Maybe 60dB below signal, but they're there.

**Didn't you say in one of your essays that there are many people who can recognize the difference between a sine wave and a triangular or square wave in the upper parts of the frequency spectrum, which means that they would have to be hearing the overtones, which are above 20K?**

This is Rupert Neve's favorite game. He'll play a tone at, say 12K. A sine wave and then switch it to a square wave. Well, the first harmonic is the third partial above that - an octave and a half above that. That's above what we can "hear." Everybody can hear the difference, though. Well, what are you hearing? You have to be hearing the harmonics.

**So somebody at some point took Nyquist's Theorem -**

His math was wrong. Double the highest frequency and you're ok. But it's not. That's what the Japanese promoters [of CDs early on wanted the public to believe.

**Or is it that people's hearing has become so damaged in a mechanical age that they just don't recognize subtlety?**

No. They don't recognize subtlety because they haven't heard it. Haven't been exposed to subtlety. They're no longer listening to live music. You've got your guitar amplifiers and house PA systems and God knows how the signal is being mangled. 5.1 is the same thing. In the theaters, if you don't sit where the mixer sat, if you sit in the upper right rear, all you get is the sound effects. You can't hear the dialogue. It was a way of Dolby to promote their system and to get the theater owners to buy new equipment and to reoutfit their theatres, but if you think about 5.1 and the demonstrations -- I go to any demonstration I can possibly go to, of any new technology. I'm not saying I close the door. I'm not a luddite. I went to a demonstration of a new manufacturer's console, and the guy was telling us how in the computer you can move the tracks around, you can type it in and boy, everything is moving. Great. Terrific. At the end, I said, could you play something that was done on this. So he played something, and I was rolling around on the floor clutching my pearls. I went up to him and asked him, didn't you guys listen to this? He said, "I'm a computer engineer - what do you want from me? I don't know music." So it's for selling stuff. It has nothing to do with what it sounds like. Because the people who are designing it are no longer people who know what it should sound like.

There are people out there who know the difference. A good engineer is curious. You start out with the assumption: I don't know shit - and I'm going to ask everybody I can. It's a good sign of intelligence [that] you

check your ego at the door. In a recording studio, that's essential. I tell all of my employees, leave your ego at the door. This is a service industry. We're giving service to a client. We do it the best we can. We antagonize the client as little as possible. We don't try and teach them. Speak when spoken to. Don't give advice unless you're asked for it - and nobody cares what your musical opinion is. Never get between the engineer and the producer - EVER! Fortunately, we have a ton of engineers and producers who come in, and they will ask questions. A good engineer knows how to cover his ass. But a better engineer knows how to cover his ass and protect the studio. It isn't "the studio's fault." Many engineers will say, "It was a bad mic cable and that's why the track sounds lousy." Well, why didn't you hear it when you started out? A poor workman blames his tools. It's nice to have very good tools. Which brings us into: What is "major studio quality?" The problem is not that the home studios have gotten so good - it's that the major studios have gotten so bad. It's economics. We've lost the structure.

**The calibre of professional equipment has gone down, and home and professional studios have begun to match each other in quality - achieving a sort of equilibrium, then, in some cases?**

No - bad is bad. Good technology, experienced engineers, good ears, musicality - the tools are unimportant.

**But how do you find these things in an Industry today that is focused on recording as a commodity?**

Well, unfortunately, the Industry doesn't look at it enough as a commodity. Because the economics of the Industry suck. And because of the home studio competing with the professional studio, prices have come down. The house engineer went away. Once the house engineer was lost, it was the beginning of the end.

**And there is no more structure to train future engineers with the sort of discipline to which you refer?**

You don't have engineers who know the rooms intimately anymore. People tend to run under time [at Sear Sound]. My people know the rooms, know the microphones. They get things set up before anybody shows up - and it sounds appreciably ok. Because they know the rooms.

**I would imagine there is a certain quality control here based on your own personal philosophy and credo.**

We train our people. They are forced to read volumes and volumes of technical papers.

**I learned how to clean a toilet very well during my internship at Quad [Recording Studios in Times Square].**

That's one of the first things I ask. A very good engineer who has since graduated, got his [first] job here. He was going to school at Berklee and for the summer he wanted an internship. We don't have interns. I pay everybody. I can't scream at them unless I am paying them. He said, I know how to clean a bathroom. He was one of the first assistants trained here. I have a little book on housekeeping that I ask my people to read - about the toilet, how to put the food away at the end of the night, how to wash dishes properly, how to make coffee properly. That was part of the training. We are in the service industry. You want to keep your clients very happy. First thing any assistant learns here is documentation. You get fired here if you don't mark down everything. Documentation begins before the session. I've got worksheets for every single module. You can write down whatever you want.

**That kind of an organization, that kind of an attention to detail, slips some people's attention -**

It's professional. It's how we always did it.

**WHO'S UP FOR SALE? and THE PROFESSIONAL WORK ETHIC...**

**In a February 2003 Mix article, you spoke of how you were ready to put your studio up for sale after 38 years of continuous operation. What turned it around?**

No customers. Nobody was interested.

**I mean what turned it around that you didn't give up?**

We had a client who booked the studio for a year because he like the vibe. He came to buy it and said, Why buy a cow when milk is so cheap? So he rented it for a year.

**Are you at liberty to say who that is yet, or are you still keeping quiet?**

No, he wanted confidentiality. His contract was up, and immediately

Roberta booked that room.

**So that was like a gift from the Universe.**

I still get discouraged every once in a while.

**Over the years you've been in 3 different locations -- 16 or 17 years each in 2 of the cases. What motivated the moves and how did the studio evolve?**

They tore down a hotel. New buyers bought the Paramount Hotel and they threw all the commercial tenants out. I was always being dispossessed by landlords.

**What's your outlook? What motivates you to survive the changes in today's industry, given the whole digital thing and the rise of home studios? What keeps you going?**

The idea that we can make it better, but that the rest of the world is fighting me and trying to make it worse. And it is. The music delivery system for the last 19 years [CD technology] has been far worse than the old vinyl discs. I ran a seminar at AES a few years ago. They asked me to do a seminar and so I found an LP and a CD - same material, same master tape, same mastering engineer. I put them on simultaneously and we crossfaded back and forth. At the end, I said, How many like this? 150 engineers' hands went up. How many like this? And zero hands went up. It's shooting fish in a barrel. Anytime you A/B even the worst recorded, worst pressed LP and compare it to any CD, there is instantly [a difference], just like with vacuum tube mic pres.

**Is it the actual physical process of vinyl? The physical construction of the grooves and the different playback mechanism?**

[CDs and digital recordings are] wrong. It's wrong. My ears are still analog. In physics, you learn that any resistive device adds noise. Noise being distortion or any unwanted thing. The more conversions, the more devices, the more times it goes from analog to digital and digital to analog, you're making horrendous mistakes. There are clocking errors. There are thousands of resistive devices. It sounds terrible. And there is no question it sounds terrible. Except a whole generation has been told that it sounds great. And unfortunately, that's what the problem is.

**Over the years, looking at your website, obviously some pretty incredible artists have come through here. What are some of the**

**memories that stand out in your mind -- some of the ones that you've appreciated the most, or that you feel really made a contribution to good sound?**

Difficult question. My memory is not that good. It's hard to say. Each group sort of adds its own log to the fire. I listen all the time as the groups are playing. I try to learn things from what they are doing. It's a constant learning experience -- of listening, evaluating, judging. And if you don't do that all the time, you're not an audio engineer. It's like a good architect, I'm sure, looks at every building he passes -- figures out what the architect had in mind. I try to do the same thing.

**What's going on here now? I know we were discussing Steely Dan and Nora Jones and Wilco earlier. Who else has been here recently?**

Patti Smith, Sean Lennon, the bass player from the Beatles. You know the people who impressed me the most were -

**Paul McCartney?**

Paul McCartney. Yeah. He came in. He did his work. He went home. Very, very professional. Those are the people I like. Wilco too. They know what they are going to do before they come in. They set up and everything goes very smoothly. They get their work done. Everybody's smiling. It's the professional ones who are great. It's the ones who we occasionally let in who are not label people - not professionals. Don't know how to behave in the studio. Don't come in prepared. The worst thing is when people don't come in prepared. They're not ready to record. It's too expensive to go into a studio to rehearse. I tell them that. Rent a rehearsal studio somewhere. Go rehearse and don't bother me. My staff gets demoralized when we have bad sessions in. They're used to a certain calibre.

**A DIFFERENT STUDIO VIBE and THE FUNDAMENTALS...**

**This place really does have a different vibe from every major recording studio I've been in. I've visited about 6 or 7 of them in Manhattan so far. Here you've created a vibe. I feel like this is a home, not like this is a studio. You've done something here.**

It's because I don't know any better. I do it the way I feel it should be done. If I'm wrong, I pay for my own mistakes.

**Even the choice of enclosure for your console - it feels old. It doesn't feel new and shiny and "SSL'ly."**

No - it's not new and shiny. It's lumberyard molding.

**What sort of working environment did you set out to achieve, or is it simply more of a reflection of who you are and what you believe in, and it just happens to be this way?**

I didn't do anything intentionally.

**When you describe the vibe of the studio to people, what do you say?**

I don't. I say, Go to many studios and you'll know when it's the right one. We may not necessarily be the right one for the kind of work that you want to do.

**You've always been very involved in every aspect of your studios. We've talked a bit about studio design and the integrity of the room itself.**

There is no acoustic treatment in this room [Studio C]. Put a drum kit or a piano anywhere in this room and it sounds fine. Plaster walls, windows, curtains, and that's it.

**So you didn't set out to build a beautiful room, you set out to build a room that would have a character?**

No acoustic treatment. Without plywood, without rubber -

**But you must have taken into consideration what you thought it might sound like. Or what you hoped it would sound like?**

I hoped it would sound natural. And that's why it's so popular. It's a natural-sounding room. It's a natural room, it's the room that we live in. Plaster walls, no acoustic treatment.

**In most studios, particularly since the 70s, there has been a move to deader spaces -**

Dead end, live end -

**Before that, it was all live, and you got what the room was. Like Columbia 30th Street. It was a Greek Orthodox Church. You got a**

**sound. It was the sound that you got. You had no choice.**

Great sounding room, great to play in. Musicians like this room because they can all hear themselves. We do a lot of jazz recordings [in this room].

**I find it very interesting that Studio C has no acoustic treatment - it's just a nicely designed room and you had hoped that it would sound good, and it does.**

Luck. [If it hadn't been acoustically ideal,] I would have put in something to compensate - plywood, absorbent materials, whatever was necessary.

**But the hope was to go back to -**

The fundamentals. There are no parallel walls. It drives carpenters crazy.

**The fundamentals really work, don't they?**

Of course. They are based on the laws of physics. If you know the laws of physics, then you know how a sound reflects and you know where it goes when it does reflect. You know how many dB loss you have. You learn these things. This is not intuitive; you get a book and you learn. And there are many good textbooks out there. I was building this new studio and the 2 biggest questions I had in mind were: Can I find a decent piano and what kind of console will I put in? So I went around and I listened to a lot of consoles and I said, No, no, no - so I said, Oh I'll build my own. I built 36 inputs and everybody liked it so much, I added another 24.

**Built from parts from -**

Oh, everything - Avalon [for the] "correctional devices." If you notice, the EQs go up to 30 kHz. Why do they go up to 30 kHz? Because there's information up there! This board is down one dB at 48 k. I missed; I was going for 50k, but I got up to 48 k before it dropped off more than 1 dB. So it's a very clean, clean board. Doesn't have the character of a Neve, but it has its own sound. It just sounds very clean. The high frequencies are there, and that's the key to it. Gotta have high frequency.

**IF IT WORKS AND IT'S MUSICAL, or DIGITAL IS ALMOST THERE...**

**So I gather, then, after our discussions so far that it's not so much an aesthetic for vintage analog, or an historical ethos - it's really just whatever sounds the best?**

Yes.

**So if something were to be produced at some point that were digital, that sounded good, then you would listen to it and say, They've got it...**

Of course. I don't care what it is. I don't care what's in the box. It's an aural art.

**Otherwise you get stuck on brand names, you get stuck on who is famous, whatever. When really it's simply a matter of doing good recordings, isn't it?**

It's an aural art. If it's good, hey: I've got my checkbook out. If it works and it's musical - it works. So I have a very pragmatic approach to it. I just want to be able to give the engineers enough choices so that they can find something that's suitable for whatever they have to record.

**I think 235 microphone choices is more than I've ever seen.**

Growing every day.

**And the intimate knowledge of each one -- that takes time. Do you have your engineers sit with the microphones at different times and play with them?**

We have a 4 drawer file cabinet in the shop with technical data on every piece of equipment in the studio, down to the water cooler. Whatever the manufacturers put out, we have the original spec sheets. All you have to do is look at [them] - [they] give you the polar patterns...That's good engineering.

**How can engineers coming up today expose themselves to better fidelity so that they can begin to understand what you go for in your personal quest for good sound? How can they gain this knowledge that is not being taught through the traditional studio system of old, where someone would advance from gofer, to tape op, to 2nd, to assistant, to engineer? Where can people maximize what knowledge might be available for them today in the context of the current industry climate?**

I don't know. You have to find one of the few remaining studios that has this approach. But it's obsolete, if you're never going to need it -- if you're never going to find an application. It will continue cycling down, spiraling

down.

**But knowledge is never obsolete if the philosophy is still important. Don't we need people to stop this "cycling down," as you put it - people who will help bring the Industry back up? Could there be somebody, or a school of engineering -- kind of like the French New Wave in cinema: a bunch of critics who turned into filmmakers and created meaningful films - could there be a bunch of people who are educated and aware of the history of the recording industry who might turn it around and help the buying public to recognize good recordings again?**

It'll come back around. You have to be patient. As long as some little germ is left to reignite it. For years I fought and wrote technical articles on transistors, and what was wrong with them. They sounded bad. About 10 years ago, the transistor technology finally got to the point where they were making some very good sounding stuff. And everybody thought I was obsolete and a dinosaur, talking about vacuum tubes. Fortunately, digital recording sounded so shitty that they began going back to vacuum tube equipment to warm it up. So everybody was running back into the burning building -- and I was running out. I seem to always be running in the wrong direction -- because I'm now a great proponent of transistor equipment, when it's properly made. The technology has finally gotten to the point, just as digital technology eventually will get to the point where it is absolutely acceptable. And it's getting there. I think we've got another 5 years to go. It will eventually be good. But right now it sucks, just like the early transistor consoles - my God, were they horrendously bad.

**If something sounds good, if the goal is to create full frequency, balanced and lively recordings that communicate the music, and if the older technology still does it better in some ways, then --**

If it's built well, and it sounded good 30 years go, 40 years ago, then it still sounds good. "Sounds good" hasn't changed. The commercial aspects have nothing to do with the reality as engineers, as musicians. We should be in a position to judge for ourselves.

**THE RECORDED SOUND SUCKS; WE'RE TRYING TO MAKE IT BETTER or YOU CAN'T TELL ME THAT A VIBRATING PIECE OF CARDBOARD IS GOING TO SOUND LIKE THE PHILADELPHIA ORCHESTRA...**

**So the goal first and foremost during tracking is to choose the**

**microphones with as little "correction" as possible, to position them based on an educated knowledge of the workings of the mics and of the acoustics of the studio room itself, to achieve in the recording exactly what it would sound like if you were in that room with that sonic character -- of that room.**

That's what you strive for. It will never happen. The motto of this studio is "The Recorded Sound Sucks; We're Trying to Make It Better."

**That's your official motto?**

Yep. It does. You can't tell me that a vibrating piece of cardboard [in a speaker] is going to sound like the Philadelphia Orchestra. I'm sorry. I sat in the middle of the Philadelphia Orchestra. I know what it sounds like. So, it's a compromise but you want to make it as good as you possibly can.

**Being that speakers are a compromise - obviously a paper cone or a plastic cone like your Genelecs is not going to exactly replicate the Philadelphia Orchestra - what are your favorite nearfield or farfield monitors?**

Life is too short. You either know one transducer or another. I learned microphones. At the other end, I don't know anything about speakers. They all sound bad to me. Well, you learn to compensate. What's wrong with the room and what's wrong with the speakers.

**And that just takes time?**

Yes. Learn the speakers. Learn the room. Learn the microphones. It takes time. You have to live with them for a long time, work with them. You find out what their capabilities are.

**If it were up to you and you had the Walter Sear School of Good Engineers With Good Ears, what kind of a curriculum would you foresee, or how many years of study would it take?**

Nothing that you've seen here is not what was happening 40 years ago in every studio.

**I get that. That's what's truly remarkable about this place.**

I'm just passing the tradition on. I didn't invent any of this stuff. I really didn't.

**But because very few people are passing this tradition on, it's almost like this approach to recording is a breath of fresh air - at least to audiophiles and people who appreciate your philosophy.**

I hope there are other people passing it on. I'm sure I'm not alone. I'm losing the fight, though. I'm a dying breed.

**I hope that it's maybe evolving into a small, close-knit group of people who will continue to appreciate this approach.**

It will come back. These things are cyclical.

## **THE EQUIPMENT BECOMES AS PASSIVE AS POSSIBLE or IT'S A LISTENING ART, AFTERALL...**

**We're spending all this time talking about the technical aspects of recording in some ways, but on your website, you refer to sound recording as "A Listening Art." There's always a wonderful combination of art and technique. Throughout our conversation today, you have been speaking to this in many ways. There is an instrument, but it is the performer who makes the music. Within the recording world, then, you would say that there is equipment, and it can be the best equipment ever, but it is the engineer who makes the recording --**

Who doesn't use the equipment. You don't use the equipment. You minimize it.

**The equipment becomes as passive as possible.**

Well, it runs up the studio bill...

**We've spoken about the decline of teaching and mentoring engineers skilled in recording acoustic instruments in acoustic environments.**

It's recording. It's an art. It takes good skills to know how to listen, to know what you're hearing. And that's really the key to it.

**Why do you think there has been such a decline in or near disappearance of advanced knowledge of microphone placement and recording techniques?**

Money. It's too expensive to train people anymore. And studio rates haven't

really gone up in 20 years. But the rent has -- and everything else has.

**Are there any recordings that you would recommend, from your general appreciation as an audiophile, for readers of this magazine to broaden their listening horizons, and to appreciate certain timbres which might help them to become better listeners?**

Well, first, you have to listen to vinyl, which was a poor way of recording sound, but it was still the best one we've come up with - besides tape. But reel to reel tape, which was a hi fi way of listening, died because it was too much trouble. Nobody wanted to go to the trouble [of aligning a deck], of cleaning it. Nobody wants to do that anymore. Everything must be instant gratification. Well, it makes a lot of money for some people, but it doesn't improve the art.

**Are there any albums on vinyl that you would recommend for people to seek out, that you think are particularly well-recorded?**

Too many to single out any particular ones. The Guarneri String Quartet did all of the Beethoven String Quartets for RCA [RCA Victor, 1990], and I thought the fidelity was very good. It was obviously mic'ed with almost no microphones, and it went right to tape. How can you go wrong? The clarity of the instruments and the musicality comes through. And that's what we're really after.

**And there are still audiophile manufacturers, like Sheffield Labs, who do direct to tape, no console. Would seeking out these types of recordings increase the chances of someone to recognize the sort of sound quality that recordings are ultimately capable of having?**

I think so. You capture more of the music that way. And what we're talking about here is not recording "the sound." It's recording the intent, the musicality -- the music.

**The feeling that it creates.**

I think that CDs have been so bad at [capturing] that. It's why people have stopped buying them and will download them. It isn't that the notes aren't all the same, or that you can't [make out] the lyrics. It's that the musicality, the intensity has gotten lost. Overcompression. Why they use compressors is beyond my - well, it isn't beyond my knowledge. I can tell you why.

**It's because of radio -- people wanting their music to sound "radio-**

**ready."**

It's a myth. Radio has always had compressors. So -- what happened when the Beatles or other groups didn't end together? [The engineer at the radio station] did a board fade. But if you put it on the air, the compressor, the transmitter saw the level going down so its level came up, along with all the noise. So the engineers said we'd better do this in the studio. We never used compressors. The only compressor you ever used was in the cutting room - you used the [Fairchild] 670 to make sure you didn't blow out the cutter head windings. It was a safety valve.

**But not during tracking?**

Never. Never. We had no compressors.

**Because singers and musicians were trained to back away from the microphone during crescendos and loud passages?**

Partially that. And the engineers were trained musicians. So you kept your fingers on those faders. That's why we got away from rotary faders and went to linear faders. You put the score across the [EQ section of the console] and you followed the score. And you knew the human voice -- you knew the singer was going to run out of support at the end of a phrase, and you ran up the fader a little bit. And you saw that she had a high F to come in on and you pulled the fader down, knowing she was going to blast it. We were musicians. We were as much a part of the performance as the musicians. Even better, we were the conductors. We were doing the balancing. I'd do the balancing. I'd go out and tell the musicians: I've got too much flute here. I need more viola here. Play louder. And the musicians would balance.

**That doesn't happen today.**

Of course not.

**Some producers are lawyers or business-types. They don't have any musical training.**

That's what I mean. We've lost the professionalism. Good engineers and good musicians.

**I see so many engineers coming out of schools today who don't play an instrument and don't even know what half of them look like.**

Yeah, but their eyes are very good. They can read the screen on their [digital recording] box.

**Sure, but they can't read music.**

Yeah - well, isn't that a bit of an impediment? I think so. Plus the discipline of becoming a musician. Of learning what a phrase is. Of learning the intensity of a phrase. And people who are going to put pitch correctors on the music -- this drives me totally insane. The human voice and most instruments except the piano and the organ don't use tempered tuning. Tempered tuning was a poor compromise when composers decided to modulate too much. But to do this with a pitch corrector is insane.

**Very unmusical.**

Of course. And it sounds that way. Also, things go wrong in music, and it's part of the performance - sometimes you should leave it alone. Like as a playing musician, one of my biggest problems was that on recordings, French horns never crack. Why? You go back, you overdub. But in real life, we used to crack. It's a brass instrument. Once in a while, you're going to bust one open. I busted enough open. But you can't do that anymore. Everybody is used to note-perfect performances. So I've stopped playing triple fortes. I got it down to a mezzo-forte. Much safer. Same with your pianississimo entrance. Ah, make it mezzo-piano. Play it safe. Play it unmusically, but play it safe. And that's what we've done. What recording has done to the musicians. And we've lost the music.

**You would say, then, that the best engineering would be transparent and, regardless of the equipment involved, would allow the music to come through, to communicate everything it is capable of communicating.**

You get the musicians to play music by the environment, by how they feel. The room acoustics - it's all very important. If it don't happen out on the other side of the glass, it ain't gonna happen on my side.

**Was that traditionally something that the engineers were in charge of, or -**

Absolutely. Producers and engineers. You buttered, massaged -- did whatever you had to do for the artists, to make them feel comfortable. To [get them to] perform. It's difficult - you put a microphone in front of anybody and they'll freeze up. Put a mirror in front of you and you'll freeze up. Your actions will change.

**There's a self-awareness -**

Of course. That's happening in the studio. The studio's job is to get around that.

**To make it so comfortable that [the artists] forget they're recording.**

Hopefully.

## **A NEW CLASSICAL LABEL and SOME FINAL THOUGHTS ON KNOW-NOTHINGISM...**

**Any new and exciting developments in the works that we haven't yet discussed?**

I have my own record label I'm starting. It will be a young classical label, of course. It will be them playing classical literature in the room downstairs, 2 microphones, 2 mic preamps, machine. Period. No console, no cables, nothing. And it will sound glorious. I have no doubt in my mind that it will be the best thing you've heard since the last good analog recording.

**What are your plans with that?**

I imagine I'll take a risk and put out 200 discs. How about that for a commercial enterprise? If I sell 200 it will be remarkable.

**Would you say that you set out to achieve any one thing in particular when you first opened Sear Sound - as well as over the years as your business has grown and changed? Did you have a dream when you set out, and have you accomplished it?**

No - I've always been able to do pretty much what I was interested in. I just get bored very easily. Whenever I get bored, I get into trouble, so I try to keep myself occupied. I'm always doing research and reading and reading and reading. I never go to bed at night until I've spent at least an hour reading. Learn what you don't know yet, and pursue what you don't know. Knowing what you don't know is very important. You've got to know that you're ignorant. And I keep saying that I'm ignorant. I'm still reading. I'm still learning.

**You seem to be interested in no shortage of things. And always learning.**

Go for the best.

**It seems to translate into all aspects of your life, your career. It's an uncompromising way to approach things.**

Life -- all things.

**I can see why your studio is successful. You have a certain way about you, very gregarious and very endearing. It makes people want to like you.**

Thank you. I have this messianic feeling, like I've got to teach things to people on any level. I'm trying to pass on the information. So I wrote those articles ["What Have They Done to My Art?," available at [www.searsound.com](http://www.searsound.com)]. It's a shame to let it all get lost.

**I hope you keep passing it on. I'm learning. Do you have any parting words of wisdom?**

This Know-Nothingism, where ignorance is fine -- Instant gratification. "It's good enough." These are all the phrases that will be the destruction of American culture. It will not be the Taliban. It will not be Al Qaeda. It will be ourselves. Every major civilization has fallen of its own weight. It was never conquered from outside. And we're playing the same game historically that advanced societies have done. We're destroying ourselves by sloppy attitudes, by a lack of dedication. The same thing happens in my profession, which is engineering. Recording. Unless you have that dedication -- a love of what you're doing -- you shouldn't be in it. You're just mucking up the water for the other people. At my advanced age, I still feel very much this way. Maybe that's why the studio is successful. I put my heart and soul into it. And I never expected quick results. I cracked whatever books I had to crack, I brain-picked from innumerable people. And I learned the craft. I guess that's the most I can say. If you ain't rewired up, sell your equipment and become a plumber.

**It all goes back to cleaning a good toilet, then.**

The fundamentals...

## **WALTER'S ADVICE ON INCREASING FIDELITY IN THE HOME STUDIO RECORDING CHAIN...**

Here's an item for a home studio: the [Avalon] 737. [I have] a pair of them. It's a vacuum tube mic pre, which sounds excellent. The compressor is a regular opto-compressor and it's got a little EQ on the end of it. You can reroute the signal anyway you want.

**So for somebody in a home studio to have something like this would bump their stuff up -**

Oh, the quality - immediately. A pair of good mic pres.

## **WALTER'S ADVICE ON SPRING REVERBS...**

There's a trick that nobody knows and I should pass on: If you want to make any spring reverb sound better and less "wongy," it wongs because the whole spring is set into oscillation. Take a pair of needlenosed pliers, crimp in two or three places. You can crimp randomly.

### **To create nodes?**

Yeah. Sound gets reflected back and it dissipates the total energy from giving a "wong." [Crimping] the spring, makes it sound better right away. I love spring reverbs.

### **And that'll work for your typical cheap guitar amp?**

Sure. You put a little crimp in it to give you back reflection from that point. If you know acoustics, you sort of figure that out. And it gets away from that springy sound. Spring reverbs are definitely not used enough. Or properly. I use spring reverbs on most brass sections that I record. It adds life to the echo.