JACK RENNER

American Jack Renner has been making a name for himself and Telarc with a specific approach to classical music recording

Founding director (with Robert Woods) of Telarc International Corporation, Jack Renner has had a distinguished career in the field of classical music recording. He has received seven Grammy nominations and the 1985 Grammy award for Best Classical Engineering (Robert Shaw/Atlanta Symphony Orchestra and Chorus, Berlioz Requiem).

His practice of simple microphone technique has brought worldwide acclaim initially establishing Telarc as an 'audiophile' label. His pioneering use of digital recording processes saw early digital classical recordings including the first US symphonic digital and the first US orchestral digital recordings in 1978. That year also saw the first digital recording in the world with a world class orchestra: The Cleveland, conducted by Lorin Maazel, playing *Pictures at an Exhibition.*

His recording career started 25 years ago when Jack Renner, music teacher, was taken over by a more ambitious creature altogether. A pressing plant in California advertised for people interested in setting up their own businesses to operate in a prescribed territory, recording school bands, church choirs and community groups. This kept Renner occupied for several years, providing him with valuable experience and time to develop his own recording technique.

As a self-taught engineer he could only go by what he heard on disc himself, and ended up with a preference for the type of sound provided by the Mercury Series.

"I wanted to model my approach after the Mercury Series because they sounded the most musical and real of any recordings on the market. I realised later it was because of the particular approach to engineering: the mono records were made with one microphone, the stereo records were made with three microphones. At that time most of the companies were using a small number of microphones, it was only in the late '60s/early '70s that this explosion of going to more and more microphones and more tracks to record symphony orchestras started to take place. Even then I wasn't aware of that; I was off in my own little world.

"When I started making recordings I started with two microphones and for a number of years I could not understand why anybody would want any more to record orchestra or a chorus or wind band, whatever."

Renner firmly believes that his training as a musician led to his approach to microphone technique and recording in general: "Classical recording is the business of recreating what has actually happened in that concert hall. Very early on I learned how to do this with a minimal number of microphones. It was only later on that I realised there were other techniques at work out there and that a lot of the major companies were using a lot of microphones and microphones with very tipped up high frequencies that tended to create a whole different sound.

"It never occurred to me that you do it any other way. And anyway, I quite literally couldn't afford more than two Sony *C37A* condenser microphones when I first started my business. These were supplemented with a pair of Telefunken *M251*s. So at one point I had four microphones and I could do a band or orchestra and chorus and put microphones on each of them."

His first tape recorder was an Ampex *PR10*, superseded by a *354*. From there he went on to a Scully *180*, to Studer *B62*, *B67* until finally ". . . digital caught up with me".

When the bottom fell out of the schools business Renner decided to go commercial and his lack of business acumen resulted in the loss of a lot of money and the accumulation of rather too many records in his basement. It was then that he met Bob Woods, now a partner in Telarc, and together they formed a vanity label (ie recording for artists who paid them, rather than paying artists for the privilege). Over the next few years a number of recordings with principals of the Cleveland Orchestra and singers from the Metropolitan Opera were received with critical acclaim—particularly regarding the sonic quality of the recordings. The company by this stage was called Advent Recording Corp. Renner was still recording with only two or three microphones, religiously following Bob Fine's technique at Mercury Records.

"Late '76 Bob Woods and I decided we had gone as far as we could as a vanity label and we were ready to do something really wild."

The 'in-audiophile-thing' at the time was recording direct-to-disc and Advent had the madcap idea of persuading conductor Lorin Maazel and the Cleveland Orchestra that they should have a go at doing this with an orchestra. The event took place in January '77 and turned out to be a case of too many chefs spoiling the broth: input came from the cutting engineer; the Disc Washer company, who were at the time importing Denon product; and then Teldec in Germany when the disc cutter suddenly became bankrupt a week after the recording.

In the midst of all this confusion the Advent speaker manufacturing company had demanded that Renner's Advent change its name, so they became Telarc.

"It was at best a mixed success. The people that liked it absolutely liked it and those that didn't thought it was the worst thing they had ever heard but it put Telarc's name on the map.

"This is going to be very contradictory to all I have said about minimal microphone technique but we sort of decided by committee how we would record it because there were three companies involved, and it wound up being a multimic project."

Not only was all this totally unnecessary as far as Renner was concerned but unknown to anyone, the cutting engineer, in order to protect his cutter heads, was severely limiting the signal and rolling off the low end of the signal he was feeding to the cutter head.

"So it came out sounding very compressed with much less extended frequency response than any of us would have liked. But we got nice clean cuts and no problems."

Another direct-to-disc recording was made later that year with organist Michael Murray. Then an acquaintance introduced Telarc to the digital concept and the Soundstream system.

"Listening to the Denon digitals we were concerned with the lack of extended HF response (at that time the Denon system rolled off beyond 17 kHz). We had a much more favourable reaction to the Soundstream except the high end still wasn't there (it was rolling off beyond 17.5 kHz)."

A suggestion to Soundstream's Dr Tom Stockham that the HF response needed to be extended to beyond 21 kHz was duly taken up, and Telarc were obliged to come up with a project.

"This had all led to the great debate about why do you need anything beyond 16 or 17 kHz because you really can't hear things up there; most people can't, most microphones don't respond that high, but I am absolutely convinced that although you can't hear what's up there, there is information there. If you take away the information in your recording above 17 or 18 kHz that sound will change because there are overtones, and what we call in the business 'a sense of air' around the sound. It affects the total colour and characteristic timbre of any instrument that has a response that high."

So, this was to be the first commercial digital recording in the US of classical music. Should it be spectacular musically, sonically or both? They decided in the end on Holst suites for military band, Handel *Royal Fireworks* and Bach *Fantasia.* The event took place in April '78 with heavy press presence from all over the States.

"There was something about those two days that will never happen again. The Soundstream turned out ultimately to be the finest digital recording system in the world. It's a shame they couldn't compete with the combine of Sony and Philips in terms of standardisation and they ultimately went out of business."

October that year saw the completion, with Lorin Maazel, of the first digital recording of a world class orchestra, beating Decca by three months, although they didn't realise it then.

Very quickly Telarc became established as an 'audiophile'

label in the US, one which has expanded dramatically over the subsequent years to become a mainstream classical label with worldwide appeal for both its sonic quality and repertoire. They were also among the first to make CDs.

Their reputation has led to strong links with various manufacturers of recording hardware, particularly of microphones: "I had considerable influence in Schoeps' last two new models, the *MK2* and linear *MK2S*—both of which are phenomenal capsules and work wonderfully in different acoustics. I work very closely with Bruel & Kjaer in the US and field tested their studio mics first in classical recording. We recently became the first US company to use the excellent new Sennheiser model *MKH 20* omni microphones and now use them regularly."

When recording in the States, Telarc use a Sony *1610* system modified by recording engineer Tony Faulkner. Faulkner is also responsible for supplying the recording equipment for Telarc's European sessions. The console is a Neotek, specified by Telarc and used by them in all territories.

"Neotek because first of all it is transformerless. We started out with a Studer *169*, which is a very good little desk but it is loaded with transformers. We decided early on, if we were going to be really hi-tec, that our entire chain was going to be transformerless. The thing that really convinced me about Neotek was when Tom Stockham, who used to come on sessions with the Soundstream, hooked the entire recording chain up and with his distortion analyser, ran a check on every piece of gear. He would check the S/N, frequency response and distortion on whatever mixing desk was feeding the Soundstream (and he has done these measurements on every brand of mixing desk in existence). When Tom measured the Neotek he found the cleanest, lowest distortion he had ever come across. In addition to which it sounded great. So we got one.

"We have just taken delivery in the States of a Neotek which is wired with Monster cable, which is phenomenal."

Not so long ago Renner was a firm 'atheist' as far as high performance cable was concerned—all you needed was clean contacts and good quality cable. A meeting in the UK with A J van den Hul and his oxygen-free cable left him a changed man.

"We had two matched B&K studio mics which we put side by side, put on the best cable we had on one mic and the oxygen-free stuff on the other and opened the faders. I tell you it was unbelievable; it was like two different microphones. The one with van den Hul had much more open top, tighter bass, more detail and everything about it was better."

Back home in the States he met Monster Cable and the conversion was complete: "I have absolutely become convinced that the cable is a valuable additional component in that signal chain. We are Monster Cable from the microphones to the video recorder. I don't know whether in a video signal high performance cable is going to make a difference but it's now available and I'm going to use it: microphone cables, interconnects in the control room. You could have talked to me for years and if I hadn't made the comparison I would still be saying it was just somebody's gimmick to make a lot of money. I'm hooked so much now that I can tell the difference between Monster, van den Hul and Hitachi; it's gotten real bad! I'm just terrible. I know it doesn't sound like it but I don't think I could ever actually be an 'audiophile', too much tinkering around goes on."

Monitoring is currently under review; discussions are in progress with Boston speaker manufacturer ADS who are developing a new speaker for them. "In the States we use an older model of theirs. In the UK we use B&Ws and have had several meetings with John Bowers about his speaker line. He knows what I'd like to see and I think they're headed in that direction with the *Matrix* models, although they don't have a wide enough range speaker available in that line yet. I dare say the *801* that we are using is a bit loaded for what we do because we use microphones that have very extended frequency response, especially on the low end, and the *801*s roll-off pretty drastically below 40. There's stuff going on down there, especially outside noise, that we'd like to hear, so we need a speaker system with a wide frequency response which is accurate musically, and which doesn't screech at you constantly while you listen to it.

"It is hard to get something that is detailed enough in the mid range and high end that you can hear noise problems, and you hear enough detail and yet you have a nice sense of musical balance as well: low enough, deep enough, tight enough, great power handling capability.

"I learnt early on that when we started making recordings with extremely wide dynamic range and LF response, I absolutely had to have a monitor system that told me everything about what was on that tape. You can't get halfway through a session and have the orchestra playing full out with percussion and everything and start hearing distortion and overload and wonder whether it's your monitor system that's breaking up or your tape recorder, or microphone. I had to eliminate the monitor system and just started working toward the system we use in the States, which has a very, very wide range. The *801* is OK but you can turn it off; you can push it too hard and it's automatic shutoff. It comes close and I think the *Matrix* line may ultimately make it but there just isn't a big enough monitor there at the moment. For amps, we have been sold for years on the Thresholds. I think they are the most musically accurate solid state amps made."

Renner overcomes some of the problems of having to set up control room environments in odd rooms at the various church and concert halls by carting acoustical materials around with him. These include *Sonex* foam, *Soundex* panels and *Tube Traps*—tall cylinders that kill standing waves.

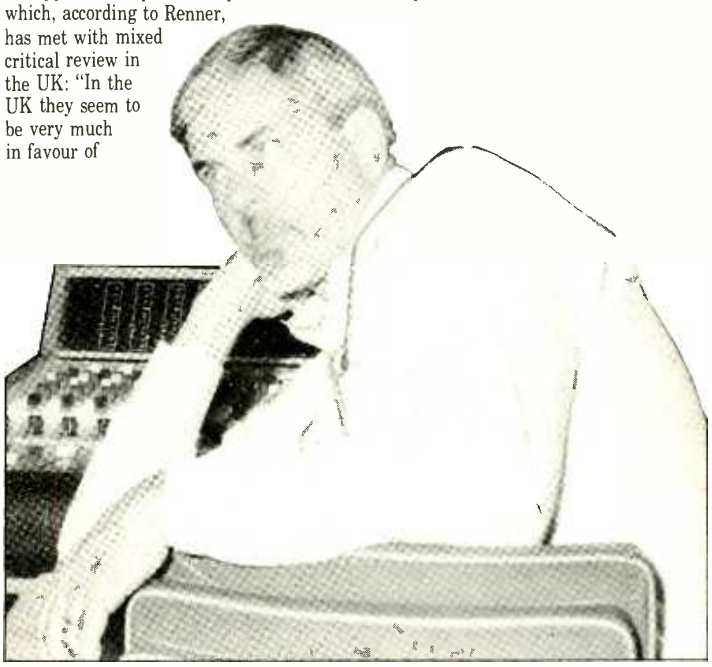
"Everywhere I go, even if I have worked there before, I measure and record exactly what I use, where it was placed and how, so that I at least have a basis and you begin to see a common thread through all this. Even if something has changed in the room or the hall when you come back you can start where you left off and save a lot of time.

"I spend quite a lot of time setting up the control room. I take to every location a CD of the *Firebird* recording we did in Atlanta. It has everything I need to know that'll tell me how a room is reacting to a system. The *Firebird* has certain passages where I can tell immediately if I've got LF boost because there are bassoon solos, horn solos, and if they take on a big plummy spread I know immediately that I've got to start moving speakers around.

"Even if you can't get that system placed in the room so that it's totally ideal, I have at least listened to enough music in there of recordings I am familiar with to know whether there are still problems."

Renner emphasises the fact that Telarc sessions produce a 2-track stereo master: "There's no mixing, balancing, equalising or anything. The only thing that'll happen to that tape once it goes back to Cleveland is that it will go through the editor. It's the time and the care that we take in getting ready and preparing for sessions that really makes the difference."

A typical microphone setup will consist of three spaced omnis which, according to Renner, has met with mixed critical review in the UK: "In the UK they seem to be very much in favour of



a Blumlein or crossed fig-of-eight coincident approach for classical recording. I don't happen to like that. I like three spaced omnis—small diaphragm, single diaphragm omnidirectionals—because they have much wider frequency response, much better dynamic range and they tend to be quieter for some reason. Those microphones will take a lot of signal level before they collapse and there is no way, with a coincident system, that you get the sense of space and bigness of the listening experience that you do with spaced omnis.

"There is no way that you get the extended low frequency response without actually putting it in artificially; you have to EQ that bottom in if you use a coincident system, expecially fig-eights, or some people like these hypercardioids.

"To me a coincident recording, whereas it is perfectly in phase, has everything right from a purely technical standpoint but everything is too pinpointed and located in the sound picture. With spaced omnis the way I use them I feel I've worked out a technique whereby the imaging of what we're recording is pretty well locked in."

Microphone placement is basically in front of the orchestra: "It's very important to have that centre microphone. In the vinyl LP days it was extremely important to control the LF phase situation, because one thing you get with spaced omnis is a hole in the middle. Most of the percussion is placed pretty much dead centre, especially the bass drum—right dead centre facing toward the front rather than side to side where you get wave fronts going in both directions and having a lot of cancellation and problems like that. The centre mic allows you to control that phase and, especially when we were cutting LPs, it allowed you to keep that bass drum absolutely locked in the centre so you had little or no chance of head lift when you were cutting.

"It's important to pull that wide, what would be an exaggerated sense of stereo together. The centre mic would run 4 to 6 dB down below the other two and the others, depending on the width of the group, are spaced accordingly, depending on the acoustic: anything from 6 to 10 ft back, 3 to 3.5 m in the air.

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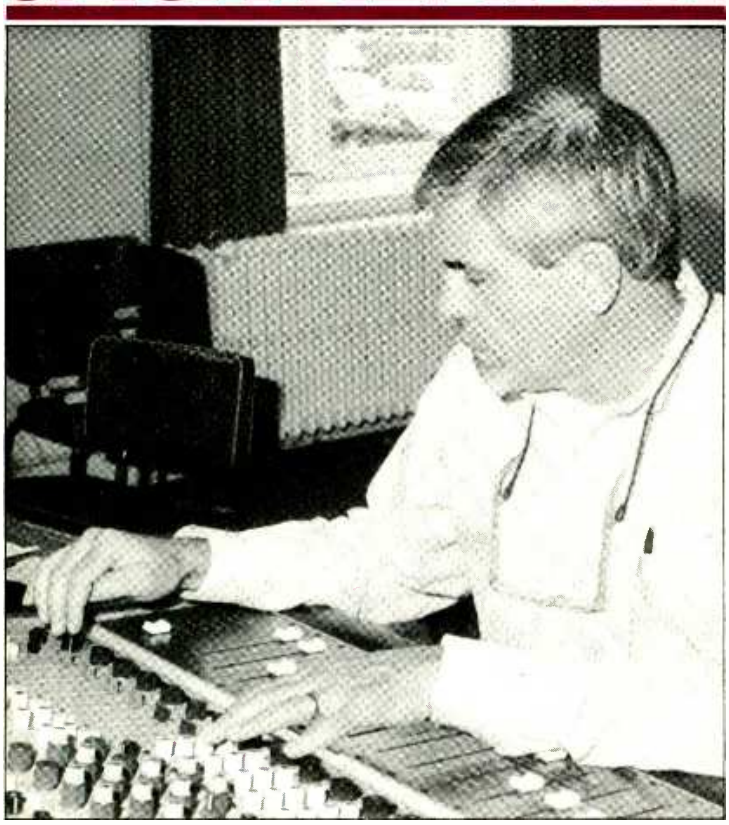

"For our first seven years of digital recordings we used the older Schoeps *MK2*s. Then I bought some *MK3* capsules, which have an extremely rising high end; I tended to use that in a diffused soundfield. But I still hadn't found my ideal mic and started a dialogue with the designer at Schoeps."

Out of these conversations came the new *MK2* and *MK2S*. "The B&K mics have been very useful but they are a totally different microphone than Schoeps, being almost a pure omni. The last two Beethoven concertos that we did in Boston I did with just two B&K microphones—people mostly put up more mics for a piano and full orchestra than that but it worked phenomenally.

"But as with any mic, these mics don't work beautifully in every hall. It seems the more reverberant and bright sounding the hall the less successful they are. It's probably because they are the closest to being a true omni and you can put them in any position. They are slightly directional, that's another reason I insist on a small diaphragm omni. Most of them become directional above 3 kHz so they're not a pure omni. B&Ks have a specially tiny capsule with very little directionality at all. There is some but it starts around 10 k.

"I did *Messiah* with just two B&K microphones placed slightly into the string section rather than out of the group so that I could reach the chorus that was behind the orchestra as well. It turned out beautifully and you would never know that some of the string players were behind the microphone because of the polar pattern of the mics.

"What happens in a very bright reverberant hall, because they are so omni, you will tend to get a lot of the room coming back into the microphone, which you wouldn't get even with the Schoeps or the Sennheisers.

"Now the new Sennheisers have come along, a sort of cross between the Schoeps and B&Ks. Pretty much the polar pattern characteristics of the Schoeps but tending to have slightly more detail like the B&Ks. But even they aren't perfect in every situation. There is no ideal mic. If I had to go to a desert island with only one kind of mic it would probably be the Schoeps linear capsule. You can do an awful lot with those and they will never let you down, You'll always come out with a recording that is perfectly acceptable."

On the topic of digital recording systems, although using the Sony *1610/30* systems, Renner is still in search of his ultimate dream and in this respect has recently taken delivery of the new *Colossus* system from By The Numbers. Brad Miller of that company contracted Lou Dorren, a designer in Silicon Valley, to design a 4-channel digital processor that could be battery powered to facilitate his hobby of recording steam railway engines! Telarc field tested it for live music rather than babbling brooks and crashing oceans, steam engines and aeroplanes.

"We were absolutely stunned by the quality. Dorren hasn't done anything radically different; he's got some proprietary circuits and approaches to encoding the information, and yet it mates up with a VCR or a professional video machine—anything you want to plug into, it will be happy with. It is slightly larger than an *F1* and its deck together, but the quality is phenomenal. It has such amazing resolution to the sound. The tone centre of the instruments is unlike anything I have ever heard—very much like the Soundstream, except better.

"In order for us to accept it, it absolutely had to have a standards converter that would allow it to be converted to the *1610/30* format because we have to deliver CD masters in that format; if we had had to copy it to analogue to the Sony system why bother? He discovered that Harmonia Mundi's converter for *F1*s, etc, to talk to the *1610*s and *30*s and back, had everything he needed, just had to change one chip."

Experience with Soundstream had shown that even though a recording is transferred to the Sony format for mastering it retains the basic character of the sound of the system on which it was originally recorded.

"The whole secret is first of all what the A/D sounds like; this is where your sound is being tailored initially, that's the first circuit the signal goes through; if that's not right, what comes out the other side is going to be bad."

What next? Whether the *Colossus* is here to stay or not, whether R-DAT takes over from CD or not, Telarc intends to stay at the forefront of our advancing digital technology and its application.□