



An Afternoon With **CARSON TAYLOR**

The *Journal* is pleased to publish another in this series of interviews conducted by the Los Angeles Section. On June 22, 1980 Dick Rosmini acted as moderator in a dialogue with Carson Taylor. During his career as a mixer, Mr. Taylor recorded major symphony orchestras as well as classical and popular artists. He began in the recording industry during World War II with C.P. McGregor Recording Studios in Los Angeles. In 1956 he went to work for Capitol Records and became chief engineer of the classical division of Capitol/Angel/EMI. A few of the famous artists he recorded include Frank Sinatra, Nat King Cole, Jackie Gleason and Stan Kenton. In 1976 Gleason presented him with a plaque inscribed "To Carson Taylor, the Michelangelo of the Mix." He retired from Capitol in 1977.

Moderator: We welcome Carson Taylor... a man of many places—all of them significant and important. Tell us what kind of recording you did in the more than 20 years you were at Capitol?

Taylor: First, I want to say how honored I am to have been invited here to visit with you. I've known many of you

for a long time and feel we're all part of an industry that has made history. And there isn't a person in this room who hasn't already made history. So, I feel doubly honored that you want to hear what I have to say.

To answer your question, I did everything. But as the years went by, I drifted into classical music, which I originally trained for as a young fellow. At

first I was on the Capitol payroll and recorded only Capitol product. Then I was transferred to the Angel staff where I did only classical records. I made several trips to Moscow, London, Paris, Tokyo, and other major cities to record various symphony orchestras, conductors, and artists. In my checked career, you discover that although most people consider me a classical en-

gineer, I made the record that made Buck Owens the number one country and western star in the world. I also did some recording with Merle Haggard and Sonny James. The most famous popular stars that I recorded were Stan Kenton, Tennessee Ernie Ford, Nat King Cole and Frank Sinatra.

Moderator: Where did you first start in the business?

Taylor: I actually started with C.P. McGregor Recording Studios, which was *the* place to work. I was fortunate to get hired and while there I learned most of the basics of commercial recording. At that time, we were recording Capitol records on wax — not on lacquer, at 78 r/min. One of my first jobs was learning how to shave the wax cake, which is a job I didn't care for. Those big chunks of wax revolved at a very high speed and had a way of fracturing and going right past your head. One day a big chunk just missed my head and went right through the wall, cutting a hole about 6 inches in diameter.

It was a very interesting time because the methods we were using in mastering gave Capitol its name in the pop field. We were recording with modified Western Electric cutting heads, flat to about 12 kHz, when nobody was getting much over 7 kHz onto the disk. And would you believe that we were driving these cutters with push-pull 2A3 tubes—about 15 W of power! The 2A3 was the most common triode tube used in high-fidelity amplifiers at that time.

Moderator: There are people in this day and age who do not know what a tube is unless there is a Fender (amplifier) on the front.

Taylor: This is rapidly becoming true. The 2A3 was, at that time, accepted as putting out the cleanest signal, the lowest distortion. The pentode tubes were very high in harmonic distortion and not really suitable for high fidelity.

But I feel the things I learned at McGregor were the basic facts of how a disk should be cut, which stood me in very good stead all the years I was a mixer at Capitol. I followed every project all the way through to the final cut-

Taylor skillfully adjusts microphone in Tokyo.



ting and I knew when there was a problem—if the disk was overcut, or had too much out-of-phase information.

I would like to interject something for the benefit of young and aspiring engineers. They need to learn these basic facts even though times have changed and the style of cutting has been modified. It still comes down to the fact that the engineer either knows his business or he does not. The mixer who knows what the cutting is all about, how it should be done, and when it's good and why it's not good, is going to make the life of the cutting engineer a great deal easier and give him a chance to do the job the way it should be done instead of producing a disk that sounds different from the tape. When the producer compares the tape and the disk, they should sound the same.

Moderator: Did you adopt multitrack techniques of recording when they became available?

Taylor: Most of the time, I mixed direct to 2 track, even in the days of multitrack recording. We were running multitrack as a safety many times—not only a safety back-up, but because a record company must keep these tapes in the archives for many years. Over time, musical styles change. You may want to go back and re-issue an album and change your entire concept. If so, you need to go back to the multitrack tape and remix for a different format.

I also made it a practice to have an oscilloscope on the output of the console. I wanted to know whether I was in

phase or not. I wanted to know exactly what the pattern looked like so I could be sure I'd have a good tape both in mono and stereo. It is very important to have the facility on your console to be able to monitor from stereo into mono. You will discover some very strange things when you do.

I strongly believe that if you have to put a great deal of equalization on at any frequency, or do anything extreme, there is something wrong with your microphone technique. You better stop and find out what's wrong. In a good system that is reasonably flat throughout, you should not have to put any major amount of equalization on at any frequency. The problem lies in what you're doing, not in what's going to happen later.

Comment: Would you say this is somewhat different in multitrack?

Taylor: I've seen many things happen with multitrack recording during the years. I started with wax. I watched it go through the short period of wire, and then into tape—the consoles developing from mono-bus-out to 2-buses out, then 3, 4, 8, up to 64. You cannot stop multitrack. I don't believe that it's always necessary; and I never use more tracks than absolutely necessary. If you can do the job with one coincident stereo microphone, do it. If you *need* other microphones, add the tracks as you need them. This has become a major problem in the studios today. The engineers tend to use as many tracks as they have. There also seems to be

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Session in Capitol Records' Studio A (circa 1965). From the left: Carson Taylor, mixer at 3-channel console with rotary pots; Richard Jones, producer; and Jackie Gleason.



some kind of prestige locked into this: that if you aren't using all the tracks, you're just not in. I think this is wrong.

Question: I'm interested in hearing more about the classical portion of your career. Could you start from when you began classical recording with Capitol and Angel and trace the history in terms of the specific techniques you used?

Taylor: When I first joined Capitol, they did not have Angel records. But they were putting out what they called Capitol Classics. This mainly consisted of the L.A. Philharmonic and the Hollywood Bowl Symphony. As you probably know, the records put out under the name Hollywood Bowl Symphony are actually the L.A. Philharmonic. They were not recorded in the Hollywood Bowl; they were recorded on Sound Stage 7 at Goldwyn Studios, on Formosa Street, which is now gone. This was a venerable old studio with quite a tremendous sound. But it looked terrible. They were afraid to change it because it had such a good, clean sound.

Moderator: Could you give an estimate of the room's dimensions?

Taylor: It was very large, maybe 200 feet long by about 100 feet wide. The ceiling height was at least 30 feet, maybe 40. They had catwalks up where the lights were.

We started recording there when stereo first came in. They were using three microphones in a triangular array, which was roughly about 3 feet on each side. The idea was that the two side mikes, of course, would be the stereo pair and the one in the middle would be split and cover what used to be termed the "hole in the middle," which caused a lot of people needless worry. When I took over the recording of the orchestras, I tried a few sessions that way, but I did not like the sound. So I went to spaced-apart microphones. Usually these were placed about 15 to 20 feet high, depending on the type of music we were doing. Looking at the orchestra, the left one was just about at the line of the concert master, and the right one was just about opposite the first cello. Another microphone was over the woodwinds, which were quite a distance toward the rear. The front to back distance was at least 30 feet. I used that as an incidental mike feeding the center channel, if I needed it, for woodwinds solo. It was very rarely put into the mixes. Most of the time we were recording on 3-channel tape machines.

Question: Why would you need the center-channel microphone?

Taylor: The idea was to have control over the solo instrument. Suppose you had an oboe solo; the oboe should not sound too distant. It should be loud

enough to be well heard. According to my philosophy, any extra microphones should always be kept subordinate to the main mikes. They should be well heard within the section, but the perspective of the sound should stay within the section. If it does not, in my opinion, it sounds contrived and unnatural.

The only other microphones used were incidental percussion ones as needed. Usually I would put one over the timpani with most of the bottom end cut out, and the top end sharpened. This was to give a little more impact to the stroke of the timpani rather than having it sound mushy.

In the early days of stereo recording (about 1956) we had received what we termed the two-headed monster from EMI in England. It was a rather large microphone built on the ideas of Alan Blumlein going back to 1931. It had a cardioid microphone at one end and a figure-eight microphone at the other end, 90 degrees to each other. This was the first M-S (middle-side) coincident stereo microphone we had seen.

Question: And there were no stereo disks yet?

Taylor: No. The first stereo releases that Capitol put out were all on 7½ IPS tape. I remember recording at Goldwyn one day when some of the engineers who had time to go over to Westrex came by the studio and told me

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Under the grandstand at the Indiana State Fair in 1962 (from the right): Taylor with mono Ampex portable tube equipment; Tennessee Ernie Ford; Lee Gillette, producer; and George Bennett, technician from Capitol, New York. Ford recording was called "Come to the Fair."

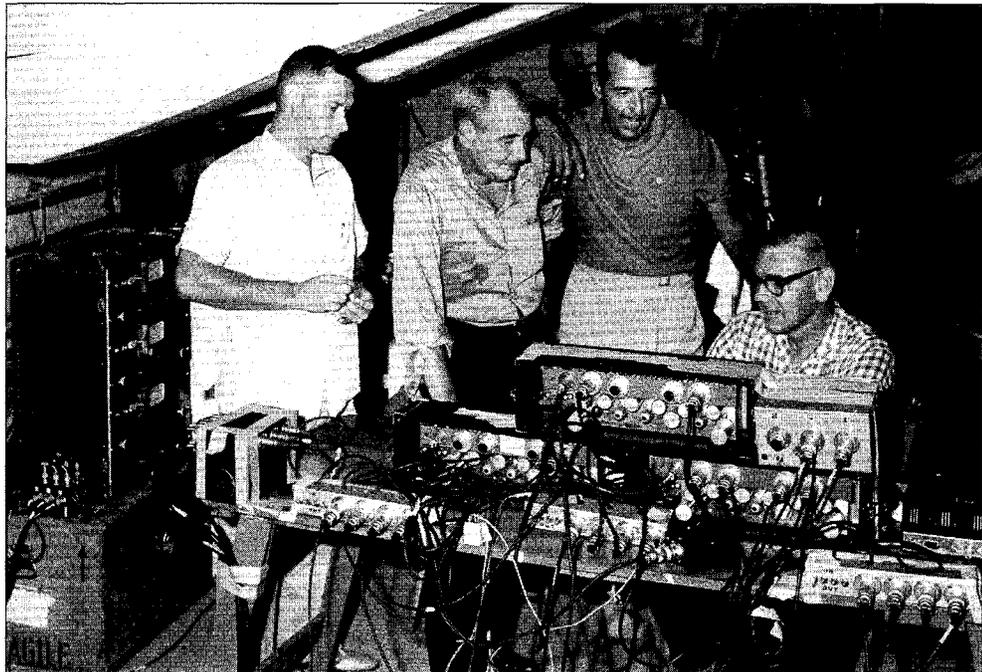


photo courtesy of Capitol Records, Inc.

about what they saw: the first stereo disk cut and played back.

I had done a cello group that involved Felix Slatkin with 26 celli, in a Bach suite, in Studio B at Capitol, using this Blumlein microphone. And I tried it on several other things and found there were a number of things I didn't like about it. But I also thought it was a very good system because you were in a coincident vertical microphone arrangement, although you still were separated too far—the heads were too far apart.

Question: About how far apart?

Taylor: If I remember correctly, about 2 feet. When I went to our affiliate in Paris, Pathé Marconi, I saw a session that was in progress. They were making what they called Compatible Disks—stereo disks that could also be played in mono. They had an unusual set-up: they placed all the basses in a straight line down the middle of the orchestra. They did this to make sure there were no extreme phase differentials so the low frequencies would cut laterally. That didn't interest me as much as the miking that I saw. They were using the first Neumann SM-69s that I'd seen. I had tried SM-2s but I did not like the sound.

Question: Too much brightness?

Taylor: Yes, and it didn't have a warm, rich enough sound. I managed

to talk Capitol into acquiring two SM-69s. I had these two microphones which I started using on the Chicago Symphony. I had one right in the center in the X-Y situation with no matrix, because we were recording in Medina Temple, which had rather live acoustics. It was about 20 feet back from the front of the orchestra. I also had the incidental microphones on the stage which worked much the same way as I explained when recording the Cleveland Orchestra, the Chicago Orchestra, the Tokyo or Japan Philharmonic, and the L.A. Philharmonic. I felt this worked out very well so I started on my crusade of using coincident stereo pairs for just about everything. I've used them on solo pianos and on solo guitars.

Before I used the coincident stereo pairs—the SM-69s and later an AKG C-24—the problem came up of recording Stan Kenton in Studio A. Standing in front of the orchestra, at the conductor's podium, we measured 137 dB sound pressure level coming from the Kenton band. The problem he'd been having was that he couldn't get a big enough sound (his brass section didn't sound as big as it was). This was before I had any SM-69s. I had the idea of using a Neumann U-67 in front of the brass. Then in a direct line about 15 feet behind, I put another U-67. The first one, the close-in one, was being fed to the right side because that's

where I wanted the brass to appear in the stereo image. The second U-67 with a little of the top rolled off, running about 4 dB below the other one, was panned to left and center. We did the same thing with the saxes. The Kenton piano was picked up in stereo. When he heard it played back, he was extremely happy because he had about twice the sound power he ever heard before.

Moderator: You were recording on how many tracks during this time?

Taylor: Two tracks. What we were doing was totally different, and not many people know about it any more. We were using the Dynatrack noise reduction system that Jack Mullin devised for the 3M tape recorder. There was a high level and a low level tape track assigned to each output track. For a 2-track machine, when using Dynatrack, you had to purchase the 4 track ½ inch tape transport. Switching between tracks would occur in playback only—low level audio was recorded on the high level track and was boosted by about 15 dB, thus in effect increasing the signal-to-noise ratio of the machine by about 15 dB. This was quite an accomplishment in those days, before the advent of other noise reduction systems. The switch over between high level/low level tracks was absolutely inaudible. The system worked beauti-

fully for me because I was not concerned about multitrack recording. There are many masters in the Capitol library that were made that way. They have one machine that will still play them.

Comment: How much "gain riding" would you do on your classical recording?

Taylor: Usually 10-15 dB in the performance because there is some symphonic music that you won't be able to get onto the disk if you start up too high and let the level go the full gamut. On the other hand, if you go too low, nothing will be audible. You have to try to ride the gain to the point where you're going to be able to start it at a certain level and, as it builds, you keep dropping it back, but very carefully, so that it isn't really audible. You shouldn't be aware of the fact that the mixer is dropping it back. There's no reason for hearing big swings of the mix pots going up and down. To do it properly, there are two requirements: knowledge of the music and anticipation of what's coming. You must have quick reactions to any situation to maintain a moving level that is not apparent.

Comment: Could you comment on orchestra and chorus miking techniques, as well as placement of the groups in fairly large choruses and orchestras?

Taylor: One instance when we did that sort of thing was with a production for Firestone. It was done on our special markets label. There were about 75 musicians in the orchestra. We recorded it on the stage at Warner Brothers on 24 tracks because it was needed. I used 16 tracks for the orchestra. Then we did the choir in an overdub afterwards, for economic reasons.

This recording was in contrast to a direct 2-track recording that I did in Mexico of *Carmina Burana* by Carl Orff. In *Carmina Burana*, I put the chorus behind the orchestra because I needed some isolation. We had 80 in the chorus—and I used three mikes on the chorus alone. The rest was done in my usual way.

Comment: You pushed the chorus further back from the orchestra to get isolation?

Taylor: I had to because I didn't have any room on the stage. It was done as a live performance and we had to squeeze the orchestra and the choir in and still get it in one shot. It worked beautifully.

Comment: What kind of mikes did you put on the chorus?

Taylor: I had Neumann U-67s.

Comment: What did you do about the timpani trying to get into the chorus mikes?

Moderator: I would think you'd have good luck with filters, so you could do something to keep out the timpani.

Taylor: If you can, try to filter your choral mikes because you don't ➡



Meeting of the minds while listening to the music. From the left: Richard Jones; producer; Carlo Maria Giulini, conductor and music director of Chicago Symphony, looks at score with Carson Taylor; and Peter André, executive producer from EMI, England, at recording session for Angel Records in 1970.

need the very low frequencies. Filter them around 100 or 150 Hz. It won't hurt the chorus. I tried to keep the timpani as far over along the right edge as possible, and pleaded with the musician not to beat the thing to death. It gets to be a very difficult thing; you have to ride the gain. You have to hold the chorus up above the orchestra.

Moderator: The problem always seems to be getting the chorus without the back instruments of the orchestra coming up along with it.

Taylor: Well, if you have good placement of your mikes, you can get enough isolation.

Moderator: How close to the chorus did you place the mikes?

Taylor: They were directly in front of the first line of the chorus about 15 feet up and pointed down over the heads of the chorus. I wouldn't normally go that close, but there was no room left on the stage. We used cardioid microphones to try to keep the orchestra out of the chorus mikes as much as possible.

The soloists in *Carmina Burana* are within the chorus. They were close enough to the mikes and were placed in the chorus so they were in proper perspective.

Question: When you look at an auditorium or recording area, how do you know what has to be put where?

Taylor: Experience over many years. The engineers who make it are the ones who can acquire a lot of knowledge in a short time. In addition to technical knowledge and a lot of musical knowledge, you also have to be able to put the facts together into a usable format. To come up with an answer to a problem, you must visualize everything and combine all the things you've been told and seen. The successful engineers can do it, most of the time.

Question: Do you know how hard it is to find engineers who know classical music?

Taylor: One of the problems is the fact that most classical music recording has moved to Europe. When I was at Capitol, and Angel was developing, I was the *only* one out of thirty-eight engineers at Capitol who was interested in classical music. For what I was doing, I was at Capitol at the right time; it was the golden age. I had the opportunity to do everything from solo guitar, solo piano, to massive symphonies. I was able to plan it out—it was a great thing.

Comment: From your point of view, did the recording industry progress with all the technology?

Taylor: Technologically, it is stupendous. But I don't think the recording industry, *per se*, has made progress. I

think they have gone backwards. The problem is that they allowed technology to take over instead of using technology. No matter what I did when I used multitrack, I always mixed everything 2 track. I recorded two channels of stereo, which is, as far as I'm concerned, the final mix. And that's what I play back for the conductor. The rest of the multitrack is being fed as a peripheral thing if we need it to do other things. But I want to record everything directly to 2 tracks. You have to mix it on the spot.

When I was recording a large orchestra on the stage at Burbank, I was recording in multitrack, but I was, of course, mixing and playing back in 2 track. At the end of the playback, the musicians all started to applaud. They said, "It's the first time we ever heard an orchestra sound like an orchestra on this stage," they said.

I don't take that as a great compliment to me. I think it's a very sad commentary on what has been going on. It means that too much time has been spent on technological byroads and not on music. What are we making? Why are we recording? Supposedly we got into this recording business to record music. I have no objection to going back and remixing the multitrack because they would like a certain section a bit louder or softer. But the overall performance of that 2 track should be so close to being right that you could actually release the 2 track and not worry about remixing it. If you're not

that close, you missed the boat. And if you've missed the boat that much, you're never going to fix it in the mix.

Comment: In my experience I see conflicts between the engineer and the conductor.

Taylor: That is why it's so important, if possible, for the recording engineer to get together with the conductor and

have a meeting of the minds— each one should understand what the other is trying to do.

Certainly a mixer has to be a combination of things: he must be a reasonably good engineer, from the standpoint of knowing electronics. He should also be knowledgeable about the music he's recording. And he must be a good psychologist and diplomat. If he isn't, he's in trouble from the start.

You run into different situations in the studio. Musicians may be a little nervous. It may be the first time they have recorded with you. They're not really sure what you're going to do. They are only sure of one thing: because you're an engineer, you're going to destroy everything they do.

You set up a microphone and a balance that you feel is a reasonable starting point, both from listening in the

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photo courtesy of Capitol Records, Inc.



The Chicago Symphony at the Medina Temple, Chicago, was one of Taylor's many on-location recordings.

studio and listening to your monitors. It sounds pretty good. You record a take and make a test tape. They start listening to it. If they don't like it, they want to change the microphone and so on. You may spend hours with them. Almost inevitably, they finally come to like what you have set up for them: "there, that's the way it should have been in the beginning." The only thing that you can't tell them is that's the way it *was* in the beginning, exactly.

Artists are afraid what they're creating is not going to get on the tape.

They're totally unknowledgeable about the medium. You have to give them time to settle in. Some are more perceptive than others, and some are quicker to adjust to the situation. But, the one thing that goes through their minds—and this is something that we shouldn't forget—is that this time when they play, it's never going to be forgotten. It will be on that record forever. If they don't perform exactly the way it should be done, they will be criticized. They sometimes say "you should have heard the way I played last night."

Question: Do you ever tell them this is just a practice, and use it as a take later?

Taylor: It usually doesn't work because, if they think they're just rehearsing, they may fumble or talk.

To conclude, I'd like to say that the recording business is actually a small one in the hands of a few people. To me it was gratifying and a bit frightening and awe-inspiring. All of you have a great responsibility because what happens in the industry is now in your hands.