

AN AFTERNOON WITH: BILL PUTNAM



Bill Putnam (center) in the studio at work with Stan Kenton (seated at piano).

Editor's Note: The *Journal* is pleased to publish the second in a series of interviews with major figures in audio conducted by the Los Angeles Section. On December 21, 1980 Peter Sutheim was moderator of "An Afternoon with Bill Putnam," one of the giants in sound recording. An edited transcript of the interview follows. We were saddened to learn of Mr. Putnam's death on April 13, 1989 (his obituary appears on p. 532 of the June issue).

Sutheim: As a brief introduction, let me begin with the year Bill founded Universal Recording in Evanston, Illinois. It was 1946, and in about a year he moved to Chicago where he founded the Universal label. By the early 50s almost half the hits on the charts were recorded by Bill. Skipping over some 25 years brings us to 1980 when Bill was chairman and chief operating officer of United Recording Corporation, which then included UREI, United Western Studios in Hollywood, and Coast Recorders in

Five years after Bing's last record, and ten years after Bill's last mixing session, Bing called and asked him to cut a new record. Bill quipped, "If you think you can still sing, I guess I can still mix!"



San Francisco. He was responsible for developing several products including the UREI 1176 limiter, various studio signal processing and equalizing devices, as well as the famous UREI monitor loudspeakers.

An abbreviated list of some of Bill's recorded artists include Duke Ellington, Frank Sinatra, Bing Crosby, Dean Martin, Pat Boone, Billy Vaughn, Stan Kenton, Guy Lombardo, Nat King Cole, Nelson Riddle, Gordon Jenkins and Andre Previn.

A fellow and honorary member of the AES, Bill received several awards for his contributions to sound recording and film.

Bill, would you tell us some of your early experiences in sound recording and film?

Putnam: There has been a lot of interest in "the way it was," particularly from younger mixers. They are curious about the hardware or the lack of it, the studio environment, and the early days which ushered in the era of trying to create new sounds.

I was personally involved in making the first records for the Chess Records label; and that's about as early as you can get. Before anybody ever heard of them, I was recording artists such as Muddy Waters, Bo Diddley, Chuck Berry, Little Walter, Fats Domino — I could go on and on. There was a very famous jazz singer named Joe Williams,

who started out as a Rhythm and Blues singer on Chess records. He later emerged via the Count Basie Band and became one of the top jazz singers.

The same was true of people like Dinah Washington, who I first recorded as a member of a spiritual quartet, and who later became a pop star. Another example was Ray Charles, who started out as a rhythm and blues singer, and became a musician's singer. His talent was unusual because of the broad spectrum of his performances.

The techniques improved, of course, as the hardware improved. With the advent of the feedback cutter, which probably contributed more in a short span of time to improving our ability than any other single innovation of the time, we were able to record not only wider bandwidth but higher levels with lower distortion.

In going back through the archives and playing some records made 20 or 25 years ago [55–60], I was amazed to find that there was a lot more quality there than I ever realized was on the record because we have much better reproducing equipment today.

Sutheim: How many microphones typically were used in a session at that time, which was before stereo?

Putnam: Well, typically, so few it would blow your mind. One of my first experiences of ever having anyone dictate to me how a session should be set up was in the



In session Nat King Cole (left) and Bill listen to a playback.

days when Decca records was surviving because of Bing Crosby and some other names like Guy Lombardo. There was one session when Lombardo not only brought in a diagram, but actually showed me where to place everything in the studio.

There was one 44BX, which is an excellent old RCA ribbon, on five saxes. They literally were seated in a semicircle. There was another 44BX on four brass. The brass were on risers and the saxes were on the floor in the conventional bandstand set-up. The drums were behind the brass. The drummer suffered from several things: bad time, which had nothing to do with the recording. He couldn't see through the brass; and he was so far away from the rest of the rhythm section because the Lombardo band recorded with two pianos. The piano duet was important. What we did was place a 44BX between the two pianos with the pianos facing each other.



Universal Audio assembly (1954) behind the echo chambers. Four original employees work on cascode mic-preamplifier, which put the company in business.

Lombardo would have the band play chords, and he would listen, pick out each part in the band, and then they would play a cascading chord or a pyramid chord. Once the balance was established, I was instructed not to do anything—and I mean it was hand-slapping time if you did.

Sutheim: Did you mic the drums at all?

Putnam: No. Everything we got (most of the drum pick-up) would be on the brass mike. All you have to do is listen to the record. Probably more than anything, my personal efforts in the field were trying to introduce reverberation as another signal processing tool in order to enhance the enjoyment of records. We took a giant step forward in 47 when we used the mens' room in the Chicago Civic Opera building as an echo chamber. We obviously had some interesting stories.

We had a very successful record that used reverberation as an important part of the whole sound in the Harmonicats record of "Peg O' My Heart." Suddenly everyone got on the bandwagon. The addition of reverberation became very important because it was a way of making three harmonica players sound really big. That stimulated a knee-jerk reaction in the industry — even Decca started using reverberation and echo.

Sutheim: Can you tell us how you began manufacturing consoles?

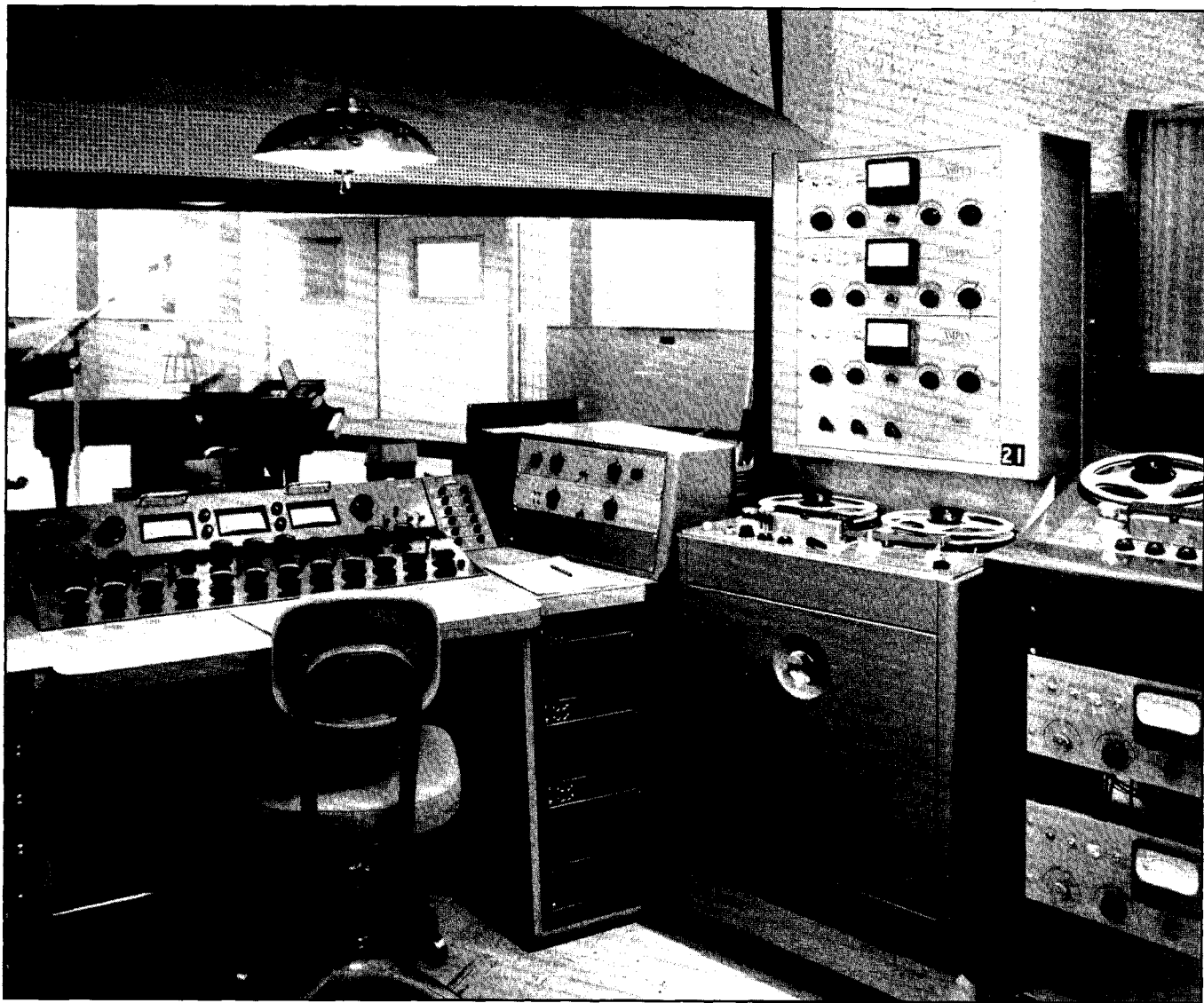
Putnam: We gradually started making modifications to the broadcast consoles everybody was using. I started in the manufacturing business about 1949 in Skokie, Illinois, while I was still located in Chicago. Out of those early days came the remotely-equalized preamplifier, the cascade front-end design, and the first plug-in module.

One of the other products that we built at the time was a limiter. Most of the limiters on the market were broadcast limiters (RCA, which was slower than molasses, and the Western Electric, Collins and GE). There was nothing actually designed for the needs of a recording studio. The Universal Audio (which is now UREI) model 175 limiter became the 176 with variable compression ratio, which then became the solid-state 1176. It was designed to satisfy the need for supplying the ability to optimize attack and release time as a function of program material and to change the compression ratio to accommodate each specific type of use.

On the hardware scene, I guess that was the genesis of UREI back in Chicago. Of course, there are many things that you can not fix in a microphone with equalization. We went through a period when we literally equalized ourselves out of business, since we couldn't put on a disk what we produced in the studio.

Sutheim: You mentioned 1/2 speed mastering. Tell us about that.

Putnam: There was an ad by JVC that claimed they had innovated half-speed mastering. I documented a record which we released in 1956 on Mercury with a record number and the liner notes. The reason I half speed mastered it was a matter of circumstance. It was the only way I could get it on the record. I happened to have a Scully lathe that I bought from Larry Scully that had 16 2/3 rpm pulleys. It was built for the Institute of the Blind. I woke up about



One of the recording studios at United (circa early 60s) showing 2-track, 3-track tape machines, and "bass-reinforcing" soffit above console.

three o'clock one morning and thought about our fighting the battle between the AES, AES modified, RIAA, and 16 other pre-emphasis characteristics. The final modified AES curve did not deviate much from RCA Orthophonic, which really became RIAA.

Then you lay on top of that the 13.7 dB, or whatever it is, pre-emphasis at 15 kHz. It seemed logical that if I could move everything down an octave, the problems of 50 cycles becoming 25 cycles at the low end might be less severe than the extant high-frequency problems. In 1953, we had built slip-over capstan sleeves for a number of tape machines so as to double the speed to 30 ips in order to improve the S/N.

I literally got up at 3 one morning and went to the studio, played the 30 ips tape back at 15, changed the Scully lathe over to 16 2/3 rpm without even equalizing at the low end, just to get a feel for what was happening. I learned enough between that time and breakfast to move everything down an octave, which really gave us some headroom.

These first Mercury records which were released in 56 were half-speed masters. That's why I get such a kick out

of hearing that half-speed mastering was invented in Austria. I can tell you that it happened in 1953 at 46 East Walton in Chicago, Illinois, at 3 a.m.

Sutheim: What was your first encounter with a tape recorder?

Putnam: My first encounter with a tape recorder was the PT6 Magnacord. Magnacord in Chicago had secured a license from Magnetophon in Germany and was building a 30-inch wire machine.

Incidentally, in 1947, the only way you could splice was with a square knot, which was a little untidy and not too reliable. By the way, you couldn't hear the knot go over the head. It is a very delicate operation to get a square knot on a downbeat. It's like doing it with a band-aid.

Early in 47 there was a hot record artist by the name of Patti Page. Jack Rail, her manager, conceived the idea of a multiple voice recording. Now this precedes Les Paul and Mary Ford by a year. Les and I were good friends, and we were comparing notes at that time. What I commend Les on is that he did it all on disk.

Sutheim: You preceded Les Paul?

Putnam: Yes. The first multiple voice recording that we did in 1947 was with Patti Page. It was a subject of her award on the country and western show where she received the Pioneer Award. I was fortunate to be on the show only as it related to having done the first multiple voice recording. I did the original tracks, the rhythm tracks on disk at 78 rpm on the outside diameter of a 17 1/4 inch disk.

Then we did the second generation and the rhythm track with one vocal part, usually the lead. I did the second generation to wire, playing the disk back using either the Western Electric 9A or the Pickering pickup. I found another trick: the distortion characteristics of the 9A were different than they were with the Pickering.

I found that the distortion was not as noticeably additive if I alternated the pickups. In other words, I played back one generation with a Pickering and the next generation with a 9A. The record was "With My Eyes Wide Open I'm Dreaming."

Sutheim: You said your first encounter with a tape recorder was a disaster. In what way?

Putnam: You know, tapes spilling over because of transport problems and so on. The fact that we were working in an area that was new to us resulted in various problems. It was more our fault at the operational level. Let's face it, there is nothing worse than a thousand little pieces, all less than an inch long — particularly when it's been a long day. The material was breaking and stretching, and we were unable to adjust the tape. But, as far as sound techniques, the exciting things were the things we did on the staggered head — Magnacord.

The other interesting thing was the demonstration we did for the Chicago acoustical group in which we did eight tracks in 1953 on a staggered head machine using Brush heads.

We simultaneously recorded eight channels with a S/N of less than 30 dB and channel separation at 10 dB. Eight loudspeakers were placed around the room in the original position of the performers. I mean you guys can laugh about the S/N, but when you get a standing ovation for a 30 dB S/N, you don't fight it. *Audio* did a big write-up about it.

I know these things sound ludicrous, but there is a certain thrill that I hope all of you have a chance to enjoy at some time in your life: it is the thrill of doing something first, and being a pioneer, as poor as the result may be. If you miss that, you are missing a lot in life. I can only encourage each and everyone of you to try to find the circumstances under which you can achieve that, because it is more rewarding than interesting. It doesn't have to be good — that's the point. And the opportunities are there.

Many of our products at UREI started out on the basis of what happened in the studio. I would say to myself, 'can RCA

be absolutely that right, that correct, and isn't there a better way to do it.' The first time I was ever involved in a film scoring session with David Rose in Hollywood and saw how they did click tracks — I couldn't believe it. I felt we were antiquated in the recording business but that blew my mind. Even though it wasn't a big market, a click-track metronome was obviously a product that was needed — so we made one [model 968].

Sutheim: Can you tell us any anecdotes about record reviewers?

Putnam: There was a record reviewer in one of the high fidelity publications about five years ago who had an 8-track cartridge of a record that I had made 18 years ago. He raved about how remarkable it was that this combination of jazz and classical music could be accomplished in a single room with Dolby noise suppression and multiple track recording.

The record they were talking about originally came out on 101 Strings Label and involved the Los Angeles Symphony string section and the woodwind section, and Stan Kenton alumni. It was a jazz takeoff with 60 musicians live in studio A at United back in 1959 or 60.

This particular reviewer went on about how amazing it was now that this could be achieved. Well, it so happens that I did that simultaneously in mono and in 2 track, and what you heard is what you got. I was thrilled to death to get that kind of a review, particularly using an 8-track cartridge; but it was all done live.

Sutheim: In 1962 you wrote a description of the most important qualities a sound mixer should possess. What would you say about that today?

Putnam: In fact, I think it summarized my feelings better than I could say it today. If you'll allow me (The moderator reads):

The qualifications of a successful sound mixer represent a unique and rare combination of skills. He must be adequately, technically oriented, understand and evaluate the performance of the various electronic and acoustical devices with which he works. He must have sufficient musical aptitude to interpret the wishes of the arranger/conductor. He must be creatively artistic, imaginative, have a flair for showmanship, be willing to try the impossible, and have the ambidexterity of an octopus. He must have the unique talent of being able to communicate with artists and directors at any artistic level and to perform his functions deftly under extreme pressure. Above all, he must have the patience of Job.

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