

The Development Of The LP

By Edward Wallerstein (1891-1970)

What follows is a recollection of one of the developers of the lp originally published in High Fidelity magazine, April 1976, Volume 26, Number 4.

IN 1938 I HAD persuaded William S. Paley, president of the Columbia Broadcasting System, to purchase the old American Record Corporation, which controlled Columbia Records, for the sum of \$700,000. On January 1, 1939, this purchase became final, and I found myself president of the newly acquired company. As soon as we had moved from the small place American Records had at Broadway and Fifty-seventh Street to 799 Seventh Avenue, there was discussion of a joint research project with CBS for the purpose of making a longer-playing record. Nine years later this was to culminate in the LP.

Such records were not new to the record business, of course. RCA had made them in 1932 and, as a matter of fact, when I became general manager of the Victor Division of RCA on July 1, 1933, my first act was to take them off the market. The idea was good and they might have sold, but there were technical problems. Most of the records were made from Victrolac, a vinyl compound developed by Jim Hunter; the pickups available at that time were so heavy they just cut through the material after several plays. The complaints from customers all over the U.S. were so terrific that we were forced to withdraw the LPs. If you could get a new pressing of one of these records today and play it with a modern lightweight 2-mil pickup, it probably would sound pretty good.

In 1933 records had fallen into disuse to such an extent that the problem was to find some way to get people to listen to them again. RCA developed at Camden the Duo Jr. player, which could be attached to your radio. There were by this time 20 million radios in the U.S., and it seemed to me that this was our big hope in trying for a comeback of the business that had shrunk nationally to probably only \$10 million. It worked beautifully, and the little attachment, which was sold at our cost, \$9.95, was instrumental in revitalizing the industry. Years later I was able to use this idea again with the LP.

When we were getting ready to move to Seventh Avenue, we were pondering the type of recording equipment to use. Thinking ahead to the longer record, I insisted that our setup be built so that everything that was recorded at 78 rpm was also done at 33 rpm on 16-inch blanks. This gave Columbia a tremendous advantage over its competitors, who, when LP finally appeared, were forced to make copies from their old, noisy shellac records for any material predating tape. RCA issued many of these old records with words of apology for their poor quality printed on the jackets. Columbia had masters of good quality going back almost ten years, and this made a great deal of difference in our early technical superiority.

We were able to work on the longer record for only about a year until the outbreak of World War II. Despite the interruption, the staff that was working on the project in 1939 was pretty much the same as the one that finally finished it in 1948.

From Columbia Records there were Ike Rodman, Jim Hunter, Vin Liebler, and Bill Savory. I had persuaded Bill Bachman to leave General Electric and come to Columbia just before the work had to be stopped. Bill's contribution was tremendous. CBS was represented by Rene Snepvangers, who concentrated on the problem of developing the lightweight pickup

that was a key factor in the success of our plans. Peter Goldmark was more or less the supervisor, although he didn't actually do any of the work.

I want to emphasize that the project was all a team effort. No one man can be said to have "invented" the LP, which in any case was not, strictly speaking, an invention, but a development. The team of Liebler, Bachman, Savory, Hunter, and Kodman was responsible for it. If one man is to be singled out, it would have to be Bachman, whose work on the heated stylus, automatic variable pitch control, and most especially the variable reluctance pickup was a starting point for a great deal of what was to come.

Very quickly they went to work on what eventually was the final approach: the 1-mil groove and more lines per inch. Even a 1-mil groove was not unique. When I was at RCA, engineer Fred Barton asked me if he could cut some 1-mil records. That was in 1935 or '36. He did a number of sessions, mostly with Stokowski and the Philadelphia Orchestra, which we used to record in the old Church studio in Camden. But the records wouldn't stand up after he made them, because he didn't have the proper equipment to play them on.

When the war was over and the project began again, the health of the record business was excellent. Columbia Records' sales had increased from about \$1 million when CBS purchased it to \$10 million or \$12 million by 1945. Columbia's artist list had grown greatly as well. I managed to get the New York Philharmonic-Symphony, the Philadelphia Orchestra, the Pittsburgh Orchestra, the Chicago Symphony, and the Cleveland Orchestra, and on our pops list were Benny Goodman, Mary Martin, Frank Sinatra, and Eddie Duchin. The time was ripe for the introduction of something new into the industry.

Every two months there were meetings of the Columbia Records people and Bill Paley at CBS. Hunter, Columbia's production director, and I were always there, and the engineering team would present anything that might have developed. Toward the end of 1946, the engineers let Adrian Murphy, who was their technical contact man at CBS, know that they had something to demonstrate. It was a long-playing record that lasted seven or eight minutes, and I immediately said, "Well, that's not a long-playing record." They then got it to ten or twelve minutes, and that didn't make it either. This went on for at least two years.

Mr. Paley, I think, got a little sore at me, because I kept saying, "That's not a long-playing record," and he asked, "Well, Ted, what in hell is a long-playing record?" I said, "Give me a week, and I'll tell you."

I timed I don't know how many works in the classical repertory and came up with a figure of seventeen minutes to a side. This would enable about 90% of all classical music to be put on two sides of a record. The engineers went back to their laboratories.

When we met in the fall of 1947 the team brought in the seventeen-minute record. There was a long discussion as to whether we should move right in or first do some development work on better equipment for playing these records or, most important, do some development work on a popular record to match these 12-inch classical discs. Up to now our thinking had been geared completely to the classical market rather than to the two- or three-minute pop disc market.

I was in favor of waiting a year or so to solve these problems and to improve the original product. We could have developed a 6- or 7-inch record and equipment to handle the various sizes for pops. But Paley felt that, since we had put \$250,000 into the LP, it should be launched as it was. So we didn't wait and in consequence lost the pops market to the RCA 45s.

It was decided to have the record ready for the fall of 1948. We made a rapid investigation to see whether we could manufacture our own players and very quickly discovered that we had neither the skills nor the time to develop them. Consequently we talked to other manufacturers about making a player. Although several were willing, Philco was chosen to

make the first models. I was a little unhappy about this, because I felt that all of the manufacturers should be making a player of some sort -- the more players that got on the market, the more records could be sold. Philco did a good job, and it really took some very fancy tricks to develop the player and have it ready to go on the market in such a short space of time. Our engineering group showed them how; in fact all of the basic technology came from Columbia Records.

In the field of plastic engineering we had the advantage of having with us Jim Hunter, who had developed Victorlac. Actually, for a short time RCA had an exclusive on the use of vinyl from Union Carbon and Carbide. Vinyl also had been used in the transcription business by all manufacturers since about 1932. Its quiet surfaces made it an ideal material for the purpose, and its short life, because of the heavy pickups, was not important because transcriptions were played only once.

Nothing much had to be changed at our Bridgeport, Connecticut, plant. The same plating facilities and the same record presses were used. Scully lathes were used, as they are today. The cutting heads were, of course, ours too. To Hunter must go a great deal of praise, because it is one thing to build a prototype and quite another thing to make a product in quantity, and this he managed to do within an extremely brief period.

Apparently nobody in the record industry had any faint idea of what we were doing. The only people who knew about it were those directly connected with the project, and they had instructions to tell no one. When we were pretty well ready to go I showed the plan to an official of EMI and to Ted Lewis of English Decca. Both were impressed, but EMI was in a spot because in most of the world, except the U.S., it was tied up with both RCA and Columbia. So it tried to stall. For that reason I was perfectly willing to help Lewis as much as I could, because we felt that if he brought these records on the market in Europe, it would force EMI's hand. This turned out to be necessary, because, while English Decca was the first major firm to accept LP, EMI was one of the last. Sir Louis Sterling, the onetime head of EMI, told me in 1950 that the company had lost almost \$4 million and were almost out of the classical record business at the time they finally introduced LPs.

Columbia also had an advantage in that we were the first people in the U.S. to use tape for master recording. Murphy was one of the first to see a German Magnetophon tape recorder in newly liberated Luxemburg after the war. He quickly packed it up and shipped it back to CBS. Not long thereafter both EMI and Ampex came out with machines, and we immediately placed an order for both. By mid-1947, we were using them and had discontinued direct disc cutting. The Ampex proved to be the better machine, so we sent the EMI machines back. Of the originally issued LPs about 40% were from tape originals.

In April 1948, two months before the LP's first public showing, Paley called David Sarnoff of RCA and told him that we had a new development in the record field that we would like very much for him to see. A meeting was arranged in the board room of CBS, and I demonstrated the LP.

Not much was said, but I did have the impression that General Sarnoff was pretty upset. In the silence that followed, Paley said he'd be glad to discuss an arrangement for licensing.

Probably, when they left, Sarnoff's men told him that there was nothing patentable about the device. In fact there are no basic patents on the LP, so RCA was forced to do its own research.

They came back to us in a few days and said they weren't interested and I think it was a bit of a blow to Paley that he wasn't going to make a lot of money in licensing.

Within a few weeks RCA in turn invited us to view what their developments were. They laid particular emphasis on tape on a consumer level.

Well, we had been working with tape longer than they had, and we saw no prospects for revolutionizing the record industry with tape, This was just a bluff as they had nothing to show. As a matter of fact they didn't even demonstrate a tape recorder to us -- only talked about it. The 45 wasn't even mentioned and probably wasn't on their minds at the time. Apparently it wasn't idea they had come up with earlier, discarded, and then resurrected as some sort of answer to Columbia.

I was glad it went the way it did. Actually, I think that Paley was badly advised on the possibility of a licensing arrangement which was the only reason he showed it to RCA. The only protection that Columbia had for its new development was the term "LP" itself, which I had originated and which we had then copyrighted. As a consequence, although many other firms could make long-playing records only Columbia could make an LP. However, because of its constant usage the term has since passed into the vocabulary along with nylon and aspirin.

On June 20, 1948, the first public demonstration was held at the Waldorf-Astoria Hotel. By this time, Bachman and the rest of the team had managed to lengthen the LP to about twenty-two minutes. As I stopped up to the podium to address the fifty-odd representatives of the process, on one side of me was a stack of conventional 78-rpm records measuring about eight feet in height and another stack about fifteen inches high of the same recordings on LP. After a short speech I played one of the 78 rpm records for its full length of about four minutes, when it broke, as usual, right in the middle of a movement.

Then I took the corresponding LP and played it on the little Philco attachment right past that break. The reception was terrific. The critics were struck not only by the length of the record, but by the quietness of its surfaces and its greatly increased fidelity. They were convinced that a new era had come to the record business.

At our annual sales convention a little later in Atlantic City, Paul Southard, our sales manager, had a rather clever idea: He designed his speech so that it ran exactly the length of *The Nutcracker Suite*, which was on one side of an LP. When Paul began to speak the stylus was placed on the record, which continued playing very softly in the background. When the speech ended and Paul removed the stylus, the distributors went wild.

And the reception in the stores was overwhelming. Columbia had a large stock of good will with dealers, thanks to the fact that we had been responsible for the renaissance of sales in both pops and classics. Columbia made its technical know-how available to any who wished it, and it was not long until other companies began issuing LPs. I believe that the first three to do so were Vox, Cetra-Soria, and Concert Hall, with Columbia doing the pressing. But soon Capitol, Mercury, Decca and indeed all of the other companies, large and small, were issuing them.

Columbia had to remain in the attachment business for less than a year. We quickly reduced the price of the attachments from \$29.95 to \$9.95, which was our cost. As it had been in 1933 so it was now: What we wanted were record sales. We were not in the equipment business and were delighted to see other manufacturers almost immediately begin to include LP-playing equipment as a standard part of their lines. Before long the "Tombstone," as the first jacket design that was used on most of our LPs was called, became a regular display at record stores.

The records sold right from the start. During the first two years of sales, our profits were down, but we did always make a profit. Up until February of 1949, nothing was heard from RCA. Then it announced the 45-rpm record, which of course was fine for short pops numbers but no good at all for classics. With both companies firmly committed, the battle of the speeds was waged. RCA especially spent huge sums of advertising money trying unsuccessfully to convince the public that the 45 was really a good thing for classics. Our policy for advertising was not to compare the products. We were pushing LPs, and there was no comparison.

Other things, too, conspired against RCA. I was lucky enough to get the recording rights to South Pacific with Ezio Pinza and Mary Martin, and the record was released just about the time of the introduction of the 45. It is still the third largest selling album of all time and was a huge hit in 1949 on LP. Then there were little things like a meeting of dealers and distributors at the New Yorker Hotel, with Joe Elliot of RCA and I answering questions. It must have been embarrassing for poor Elliot, who had no answers.

Actually the introduction of 45s didn't touch the sales of LPs at all. Columbia quickly began to issue single pops records on 45s, which were and indeed still are, the accepted medium for singles.

I was amazed when I learned that during the period in which RCA held out against the LP -- that is, from June 1948 to January 1950 -- it lost \$4.5 million.

It had lost practically all of its classical sales and was beginning to lose its artists. Pinza, whose records had been released by Victor since the beginning of his career, signed an exclusive contract with Columbia. And there were others. Rubinstein, Heifetz, and other big-name RCA artists were threatening to leave. During the same time, Columbia had cleared over \$3 million.

I don't remember having any particular interest in RCA's announcement on January 4, 1950, that it was making available its "great artists and unsurpassed classical library on new and improved Long Play (33 rpm) records." By that time the whole thing was academic.