

Edison's Baby: From Tinfoil to Tape

by Irving Kolodin

IN A daily log he maintained of his activities and investigations, Thomas A. Edison marked the date of July 18, 1877, with the notation: "Just tried experiment with a diaphragm having an embossing point and held against paraffin paper moving rapidly. The speaking vibrations are indented nicely and there is no doubt that I shall be able to store up and reproduce automatically at any future time the human voice perfectly."

In those two terse sentences are contained the first signs of life anticipating a birth for which several dates during the year 1877 have been assigned (thus making difficult the choice of any single day among them for an official celebration in this hundredth jubilee year). Edison's notation may be read as the verbal equivalent of the proud gleam in the eye of a parent who has been informed that conception has taken place and that in due course parturition will occur.

There is, at the least, no doubt after July 18, 1877, of Edison's ability "to store up and reproduce automatically" the sound of the human voice—and, inferentially, any other sound. He had thus accomplished for the ear what Gutenberg had achieved for the eye with the printing of the first Bible from movable type more than 400 years before.

When Edison's infant was exposed to the scrutiny of the world on December 7, 1877, its physical features were, understandably, more fully formed than they had been in the skeletal fetus described five months earlier. The "paraffin paper" that moved "rapidly" had given way to a sheet of tinfoil wrapped around a cylinder on a 12-inch shaft that was turned by a hand-held crank. This was the device that caused the workman who had built it (at Edison's instructions) literally to pale when it repeated, in the treble tones

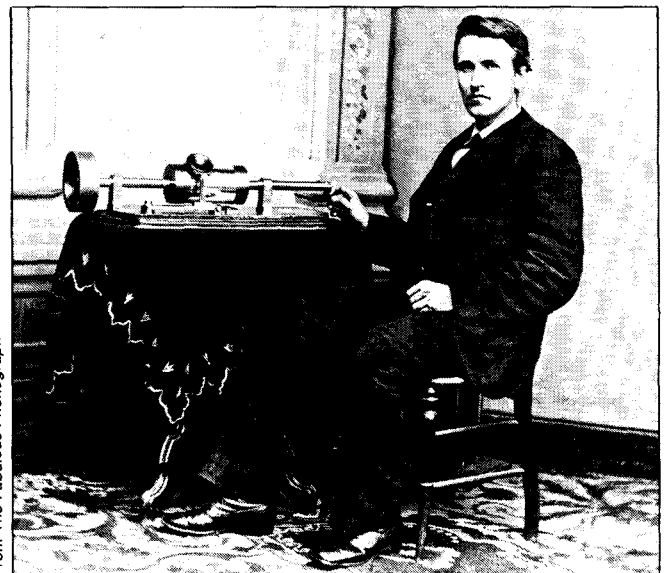
of the inventor himself, "Mary had a little lamb."

The combination of awe and stupefaction with which the demonstrations of the impressively small machine were greeted caused the phonograph (Edison's own name for it) to be labeled the "greatest" of the master's inventions. For himself, he was content to cherish it as his "favorite" and to speak of it in almost familial terms. On an occasion in 1878 when a reporter queried him about the fascination the phonograph apparently held for its inventor, Edison replied: "Yes, but this is my baby and I expect it to grow up and be a big feller and support me in my old age."

Alas, the false hopes of parenthood! The "little feller" that took form was not the docile offspring that Edison wanted him to be, content with taking dictation, reproducing books for the blind, and teaching elocution. At thirty, Edison was already hard-of-hearing and lacking in most aural indications of what we call "culture": his vision of the "child's" musical future was limited to the reproduction of simple tunes and familiar melodies that the Edison family loved.

Indeed, as time passed, the phonograph became something of a stepchild as Edison's mind engaged the gigantic problem of electrifying lower Manhattan (as a practical man bent on promoting his purpose, Edison knew that nothing would impress Wall Street more than the *lighting up* of Wall Street). From time to time, he would return to the phonograph, try to bend it again to his own ways, seek to improve its fidelity to simple sounds, and otherwise strive to make it worthy of its joyous birth. In its true nature, however, the phonograph became something of an orphan, learning more from foster parents who sprang up around the globe than it did from Dad.

As an instance, Edison had first thought of a disc rather than a cylinder as a repository of sound, but had ruled against it. That essential improvement became the creative contribution, in the early 1890s, of Emile Berliner, an immigrant from Germany. Such a platter could accommodate a groove in which the point swung laterally rather than in the up-and-down movement that caused Edison's track to be called the "hill and dale" method. In time, Berliner's disc lent itself to duplication and mass production as the cylinder never did. Moreover, it could be stored more easily than Edison's cylinder, and the disc-playing machine was even pro-



From *The Fabulous Phonograph*

Thomas Edison, at thirty-one, beside his tinfoil phonograph.

Early examples of the Gramophone failed to lure musicians of international reputation to record for it because the unit lacked the driving force necessary to maintain a steady speed and a constant pitch. A practical young machinist in Camden, New Jersey, named Eldridge R. Johnson applied his mind to the problem and produced at least a partial solution in 1896.

Edison's baby, in its various mutations (different substances and shapes for groove containers, alternate forms of inscribing them), did indeed grow up to be a "big feller," but it did not support him in his "old age." If any one thing could be said to have filled that function, it would have to be what Edison called his "Kinetoscope." Together with the illumination provided by his electric light bulb, the Kinetoscope became indispensable in the development of motion pictures. From 1908 to 1917, the filmmakers of America paid Edison and his subsidiaries up to a million dollars a year in royalties.

What Edison's baby did for Dad was only a fraction of what Edison's mind did, all unintentionally, for music. When the inventor died in 1931, at eighty-four, the essential pieces for the next great revolution in sound reproduction were in place: the carbon microphone, which he had pioneered, and the detecting tube, based on the filament bulb, which Edison had invented and which Lee De Forest had converted into the heart of the wireless telephone, radio, and the electrical reproduction of music. All the rest, it would not be too much to say, would be refinement.

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When the Depression settled in, record production in America all but terminated, as imports from abroad kept the wheels of commerce turning and the turntables of serious music lovers spinning. Demand rose at the end of the Thirties, slacked off during World War II because of the enforced cutbacks in production, and then swung up again as a host of backlogged wants came into the postwar market. The onset of the “33½ Revolution” [SR, June 26, 1948] achieved a massive stimulation of everything that could be accommodated in a groove, at a lower price per minute of content than had ever prevailed before.

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as the late Goddard Lieberson came on the scene. Lieberson spent part of the revenues that had come in to Columbia from Mitch Miller's "Sing-Alongs" (a contemporary equivalent of Edison's "simple tunes the family loved") on such projects as a complete Stravinsky and a comparable coverage of Copland (both conducted by the composers). Other record companies seemed more determined to out-duplicate the competition's duplication of the "Top Fifty Hits" rather than to carve out a path of their own with innovations on the Lieberson order [see article on page 28].

Where in the American scheme are there such adornments of the industrial-artistic order as Sir Ted Lewis of London/Decca, who authorized a complete new catalog of opera recordings for his world-famous labels when the previous collection had been outmoded by stereo? Or the several successive officials of EMI (now embodied in Sir John Read) who enabled Walter Legge to rejoice the world's musical interests with the talents of Callas, Gieseking, Schwarzkopf, and Karajan? Or the entrepreneurs of Polydor (parent company of Deutsche Grammophon) and Philips, who produce, consistently, not only the best-sounding records in the world but many of the best-performed oddities, rarities, and novelties? Such an enterprising independent as Vanguard, operated by the Solomon brothers (Maynard and Seymour), manages to keep up a high standard of quality in this country from year to year, as does New World Records, sustained by the Rockefeller Foundation.

If there are any Lewises or Reads in the larger scheme of American record-making, they are, for the most part, hiding in storm cellars or trying to persuade unimpressed accountants that money ventured on a major product today—such as the money Ted Lewis gambled on Wagner's *Ring*, conducted by Georg Solti and produced by John Culshaw in 1959—may well return dividends for decades to come. Like the grocery merchants who believe that what doesn't move from the supermarket shelves in six months should be "killed," too many of the arbiters of new domestic recordings write off as "withdrawable" any issue that doesn't meet its sales quota in a comparable period of time, without regard for merit.

The counter of RCA to London's 1959 *Ring* was to acquire in the same year the block-busting talents of Elvis Presley—not quite an even exchange. A few years later, the Beatles swept a new outpouring of star-kissed kids into the record shops, giving rise to a whole new deluge of aural journalism and everything that went with it.

Perhaps it was some of the Lewis-London "Rolling Stones" money that went into the Solti-Chicago-Mahler cycle of the late 1960s and early 1970s. Likewise, Angel found the capital to follow through on recordings in Cleveland, first with George Szell and then with Lorin Maazel, as it soon will with Riccardo Muti in Philadelphia. By the time Zubin Mehta begins as music director of the New York Philharmonic in September 1978, there may not be a major American orchestra recording exclusively for an American record company.

That there is such disarray on the American scene today is more a matter of parochial than of global consequence. The ships plying the waters from Southampton, Cuxhaven, Rotterdam, Cherbourg, and New York will continue to bring in their tons of merchandise for the shelves of Sam Goody, King Karol, and other outlets around the country. That our domestic producers seem unable or disinclined to match their

European counterparts either in quantity or enterprise may be attributable in part to the repressive tactics—for example, the charging of excessive fees—of the American Federation of Musicians. High fees, however, do not keep DG from recording in Boston, or London from recording in Chicago (or RCA from recording in Ravinia, on behalf of its Levine program).

Regardless of what happens in the country of its origin, Edison's baby has grown to demand attention as something more than a diversion or a distraction, a way of passing time or of timing the past. What it connotes and what it conveys have become a part of Thomas Mann's *Magic Mountain*, as well as of Aldous Huxley's *Point Counter Point*, and a factor of the force in Dorothy Baker's *Young Man with a Horn* and Gian Carlo Menotti's *The Consul*. By action as well as implication, the phonograph plays a part in musical works as diverse as Ottorino Respighi's *Pines of Rome*—in which even Arturo Toscanini stood by as the recorded sound of a nightingale issued from a far-from-golden throat—and Peter Maxwell Davies's *Missa super l'homme armé* (in which, for an artistic effect, the composer mimicked the monotony of a disc with the stylus stuck in a groove).

A record may be nearly toneless, but it is also timeless. A platter heard in Harbin, Manchuria, by Alexander Hilsberg caused the young Polish violinist to fall in love with the sound of the Philadelphia Orchestra, of which he became, eventually, concertmaster under Leopold Stokowski. When Maria Callas was asked if she had ever heard Lilli Lehmann's recording of "Sempre libera" from Verdi's *La Traviata*, she said (of a singer retired before she was born), "I know that voice intimately. I can tell you every move she makes." And it was the late Harry Carney, the greatest of baritone sax players, who said in response to a question about his knowledge of Coleman Hawkins: "I used to sit on the floor at home in Boston when I was a kid and wear out his records with Fletcher Henderson's band."

In addition to being one of the greatest inventors in history, Edison can be credited with the accomplishment of a feat with which alchemists have been struggling for centuries—how to turn base metals into gold. What began with tinfoil in 1877 has been so refined in the hundred years since that it has piled up billions for performers and producers. Now the basic material is magnetic tape, which, being inexpensive, inexhaustible, and erasable, will do until something better comes along.

From the start, however, there have been those who have had misgivings. When the phonograph was first demonstrated in England in 1883, Sir Arthur Sullivan sent a comment to Edison reading: "I am astonished and somewhat terrified at the result of this evening's experiment—astonished at the wonderful power you have developed and terrified at the thought that so much hideous and bad music may be put on record forever!"

Fortunately, there is no Gresham's law for art. Cheap art does not drive out good art—it just makes it harder for it to survive. Had Sullivan foreseen how well his would survive, the prospects might have looked brighter to him.

Free societies have their shining penalties-and-privileges. One of them is free choice. What Sullivan might have regarded as "hideous and bad" in his country might have been rated a "jazz classic" in ours. In either case, it would be on a white rather than (as it would be in the U.S.S.R.) a black market. ●

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Recordings and the Composer

by Charles Wuorinen

UNTIL recordings made their appearance, the “sounding” of music was an effortful matter. In a world of nothing but live performance, the opportunities for a composer to test his work and his responses to it were not frequent. We who have always enjoyed the convenience of recordings are able to hear our pieces repeatedly, effortlessly, once they have been committed to a tape or a disc. How hard to imagine the disadvantage our predecessors suffered, forced as they were to rely only on infrequent live performances to hear what they had written and to learn thereby. How much easier it is for us!

I think it is directly owing to recordings that our century has produced so many new ideas about how to deal with musical *time*. If some of these are silly or inconsequential, no matter; what counts are the few that powerfully shape the form of pieces yet to come. An environment without recordings could not have produced the striking and original ideas about musical continuity so persuasively advanced in the works of Elliott Carter or (in a different way) Milton Babbitt. These ideas take their places beside our century's older innovations—the juxtapositional continuity of Stravinsky and Varèse or the revived traditionalism of Schönberg—that stood earlier listeners on their ears.

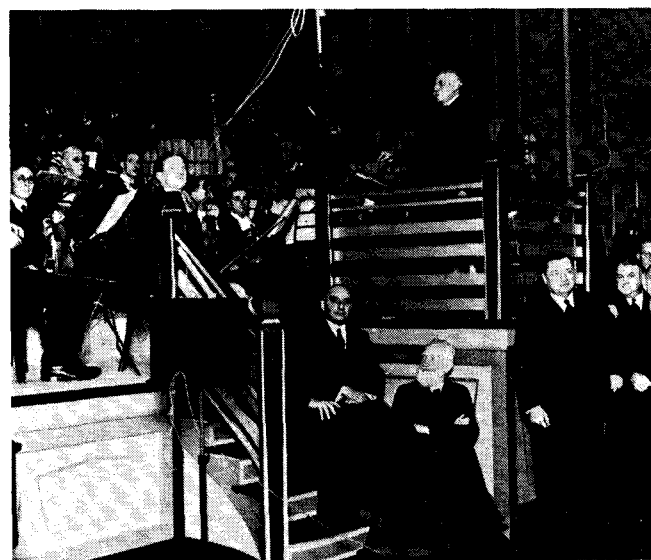
Performance has come to mean something different, too. I am speaking here of course from the composer's point of view. We want the notes played where we put them, in a faithful realization of the musical text, and there is no doubt

that standards of accuracy have risen under the pressure of recording practice. When a performance can be called back from the ether time and again, tolerance diminishes almost to zero for the slips that seem unimportant in the heat of public performance. We may suspend criticism of a truly noble performance marred by a few wrong notes, but the right notes at the right time must be a first consideration for the vast bulk of recorded music-making.

This sharpening of standards has been of great benefit to composers. To me, the distinction between the functions of a recorded performance, destined to be heard again and again, and those of a live, once-only musical happening has focused the attention of performers on what live public performance can really mean. Now that it is no longer obliged to be the sole carrier of musical information, I think live performance has come to concern itself with a richness of interpretative values achieved only rarely in the past; at the least, it remains a counterpoise to the often dull “perfection” of commercial, edited recordings. And no matter what the advances in the art of recording, live performance always sounds better, too.

Not all is roses, however. We are immeasurably enriched by the massive preservation in audible form of most of the worthwhile music of the past, as well as of much “exotic” non-Western music. But this has also led us into a self-indulgent and—to my mind—extremely dangerous eclecticism. We are children with our fists in the musical jam jar, and we have consumed so much so indiscriminately that we are now starting to get a tummy ache. The ease with which the most disparate kinds of music—old-new, serious-pop, Eastern-Western—may be juxtaposed via recordings and the maniacal persistence with which these usually dissimilar pieces are united tempt many composers to think that a similar combining of dichotomies is artistically viable *within* their own works. The normal result is incoherent and pointless inclusiveness.

This running together of discrete and unrelated musical phenomena is then justified by a lot of romantic talk about breaking down the arbitrary barriers of convention, and so



In 1931, Sir Edward Elgar opened the Gramophone Company's new Abbey Road studios in London. Seated on the steps are the company's musical adviser, Sir Landon Ronald, and Bernard Shaw.

From *The Fabulous Phonograph*