

ANTIQUÉ RADIO

By Marc Ellis

The Theremin: America's Six-Decade Love Affair

Nineteen twenty-seven. It was the height of the roaring twenties. America was lusty and prosperous, busily shaking off Victorian inhibitions and reveling in the accomplishments of its new technologies. Cars were faster and more powerful, radio broadcasting was entering every home, jazz-age flappers danced in speakeasies, and Lindbergh flew the Atlantic.

That same year, a dapper young Russian scientist arrived in New York City to

demonstrate a novel musical instrument he'd invented a few years before. Lev Sergeivitch Termen, more commonly known as Leon Theremin (apparently a Gallicized version of the name, reflecting his French descent), had just completed a successful European tour and was ready to take America by storm.

Theremin's instrument was truly unique. For one thing, its sounds weren't produced by mechanical means as in traditional musical instruments; there was nothing to blow into, saw on, or strike. For another, the music was produced without touching the instrument in any way! The musician simply moved his or her hands in the air, varying their position relative to two antenna-like electrodes.

THE FIRST ELECTRONIC INSTRUMENT

Theremin's invention was, in fact, the first musical instrument to produce sounds by purely electronic means. Its circuits were similar to those that had been developed for radio transmitters and receivers; its sound was reproduced by a loudspeaker and its tones were rich and full—sometimes bearing an uncanny resemblance to the human voice, sometimes mimicking the notes of a violin or cello.

The inventor had originally named his apparatus the *aetherphon* and later referred to it as the *thereminvox*, but in popular usage, the name was eventually shortened to *theremin*. Prior to its appearance in New York City in 1927, the theremin had

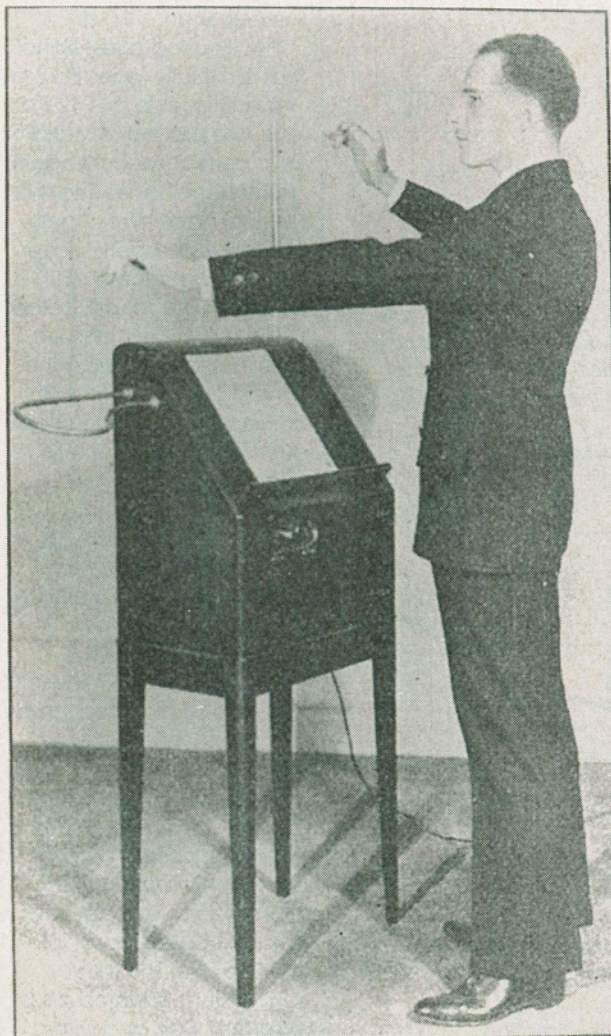
already attracted the attention of the world music community. The first composition expressly for the instrument, "A Symphonic Mystery" by the composer A.F. Paschteschenko, had been premiered in 1924 by the Moscow Philharmonic. And audiences on the 1927 European tour had been wildly enthusiastic.

The New York demonstration concert created a sensation among the listening public and serious musicians alike. Theremin set up a laboratory and studio in the city to build new instruments and train performers, and soon theremin concerts—as well as theremin appearances with symphony orchestras—became commonplace.

Today, it may be a little difficult to understand the appeal of what was essentially a novelty instrument. Controlled as it was by making hand movements in the air, it was difficult to move from note to note without creating "sliding," or *glissando* sounds—limiting the theremin's facility and responsiveness.

But keep in mind that we're talking about an era when people were truly awed by technology. The radio and telephone were beginning to provide instant worldwide communication; auto, rail, and air transportation were shrinking distances between cities and countries; inexpensive electricity and labor-saving appliances were improving the quality of life for everyone. So why shouldn't the almost magical science of electronics be used to revolutionize music?

Theremin virtuosos such



A dapper young Leon Theremin demonstrates his invention some time in 1929 or 1930.

as the legendary Clara Rockmore were indeed impressive to watch as they drew music from their instruments by making commanding gestures with their hands. The intense, rigid pose required to play the instrument without creating unwanted *glissandos* added to the supernatural effect, as did the eerie, almost vocal quality of the music. The thereminist seemed to be in control of some elemental life force.

RCA ENTERS THE PICTURE

In 1929, attracted by the mushrooming popularity of Theremin's magical invention, RCA purchased a license to manufacture the instrument and speedily produced about two hundred of them. The RCA theremins closely followed Theremin's design. They were well-made, elegant-looking units consisting of a sloping-front cabinet, which housed the electronics, mounted on four slender legs. Fitted with a narrow, flip-down shelf, the sloping cabinet front served as a convenient music holder. The instrument required a separate speaker, such as RCA's tapestry-front, floor-standing Model 106.

A short rod extended upward from the top of the cabinet at the performer's right. That was the pitch antenna. As the musician's hand approached that antenna, the pitch of the music became higher; as it was withdrawn, the pitch became lower. Volume was controlled by means of a horizontal looped antenna extending from the other side of the cabinet. Moving the hand closer to the loop reduced the volume; withdrawing the hand increased it.

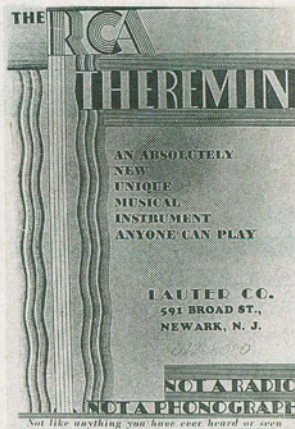
RCA attempted to market the theremin to the home consumer, advertis-

ing it as an instrument that could be played, without study, by anyone who could hum or whistle. As an early RCA promotional brochure enthusiastically gushed ...

"... Thus, playing this almost incredible instrument resolves itself into nothing more complicated than waving one's hands in the air! The Theremin is the only musical instrument ever conceived which anyone can play without touching! It is the most intimate and personal of musical instruments, for it employs nothing mechanical, nothing, indeed, but the player's own mental conception of music, expressed in a few simple gestures of his hands. And it is the simplest and most universal of musical instruments, because no technical knowledge of music, no tedious practice, no long period of study is necessary in order to play it. Anyone who can hum or whistle a tune can play the Theremin ... and, as far as technique is concerned, anyone can begin to play it on the same footing with the finest cellist, or pianist, or other instrumentalist in the world!"

In reality, however, the theremin was an extremely difficult instrument to master. The player had no fingerboard, frets, or keys to serve as reference points. He or she had to somehow achieve correct hand positions in thin air, recognize the desired notes when they came out, and make lightning-quick corrections when they didn't. Then there was always the problem of getting from one note to another without those unwanted *glissandos*!

The RCA radio dealers who handled theremin sales weren't much help in arranging music lessons for customers. And, in any case, 1929 was a very bad year to launch an expensive new consumer item.



The cover of RCA's promotional brochure for the theremin stressed the novelty of the instrument and its ease of performance.

The theremin's price tag seems to have been about \$600.00—a bit steep for the depression-era pocket-book. Sales bottomed out and RCA discontinued the product.

Though few private individuals chose to purchase a theremin or to invest their time in learning to play one, the instrument was used intermittently on the concert stage throughout the 1930's and '40's. And experimentally-minded serious composers continued to write pieces for it. The theremin also occasionally appeared before the public in variety acts and music-hall performances.

THE THEREMIN IN HOLLYWOOD

The theremin had flopped as an instrument for the do-it-yourself home musician, but it was soon to make a grand re-entry into the popular consciousness. The mid-forties was the era of the psychologically-oriented movie thriller, and screen composer Miklos Rosza decided to try using the theremin as a source of chilling special-effects music.

In his autobiography, *A Double Life* (Wynwood Press, 1989), Rosza explains how he first wanted to use

the theremin to underscore a scene dealing with a premonition of death in the movie *Sundown*. The producers wouldn't agree, so he fell back on some effects from a musical saw.

Rosza finally got his chance to use a theremin in the now-classic film *Spellbound* (1945). Director Alfred Hitchcock wanted an eerie sound to suggest recurring attacks of paranoia, and agreed to give the Russian inventor's instrument a try. The results were electrifying, as most classic-movie buffs know. Be sure to rent a copy of that film if you'd like to experience the tasteful and powerful use of special effects to suggest terror and the theremin's unique ability to produce the required eerie sounds.

Rosza used the theremin with similarly chilling results in *The Lost Weekend*, which immediately followed *Spellbound*. Spurred on by his success with those two Oscar-winning films, the composer went on to use theremin effects in other psychological thrillers that he scored during this era, as well as in some of the gangster melodramas produced during the late 1940's.

The spine-tingling compositions for *Spellbound* and *The Lost Weekend* were played in the film studio by theremin virtuoso (and Beverly Hills foot doctor) Dr. Sam Hoffman. In a 1960 interview for *Electronics Illustrated* magazine, Dr. Hoffman estimated that he had played theremin music for more than thirty movie soundtracks as well as half a dozen record albums.

During the same interview, Dr. Hoffman explained that, when the full four-octave range of the instrument is used, only a 1/16-inch movement of the performer's fingertip is required
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EFFECTS ON MODERN MUSIC

Robert Moog, best-known for his pioneering work with music synthesizers, began producing modern versions of Theremin's instrument in 1954. According to *New Grove Dictionary of Musical Instruments* (Grove Dictionaries of Music, 1980), Moog manufactured five models between the mid-50's and the mid-60's. Two transistorized models are offered in Moog's newsletter *Moog Music* for Fall-Winter 1962: the "Melodia" (\$49.95 in kit form, \$75.00 assembled), an amateur instrument; and the "Troubadour" (\$160.00), a professional version.

It's pure speculation on my part, since I've never talked or corresponded with Moog. But it's easy to imagine that this man's accomplishments in the field of synthesized music were inspired and influenced by

his work with Theremin's instrument.

With the availability of modern equipment, contemporary music groups began to use the theremin. Rock bands were particularly attracted to its wide repertoire of unearthly noises. Among those were the '60's groups The Beach Boys and Lothar and the Hand People. Led Zepplin's guitarist Jimmy Page was a particularly avid theremin user, and you can see him play it in the movie *The Song Remains the Same*, which is still available at video stores. Watch for the songs "Dazed and Confused" and "Whole Lotta Love."

Electronics hobbyists, too, have long been fascinated by Leon Theremin's engaging invention. Theremin construction articles have been popular hobby magazine fare from the mid fifties, when Moog first be-

gan manufacturing the instrument, right through to the present. **Hands-On Electronics**, the predecessor of this magazine, ran the article *Build the Digital Theremin* as recently as September, 1987.

COMING ATTRACTIONS

I'm indebted to the more than 40 entrants to our recent "Theremin Contest" for the source material used to put together this column. Next month, we'll keep right on going with the theremin topic and deal with the operating theory of this fascinating musical instrument. Following that, we'll work over an actual RCA theremin (acquired through the courtesy of reader Tony du Bourg) that's been in storage since the 1950's. We'll examine its construction in detail and see what needs to be done to the instrument in order to make it play again. ■