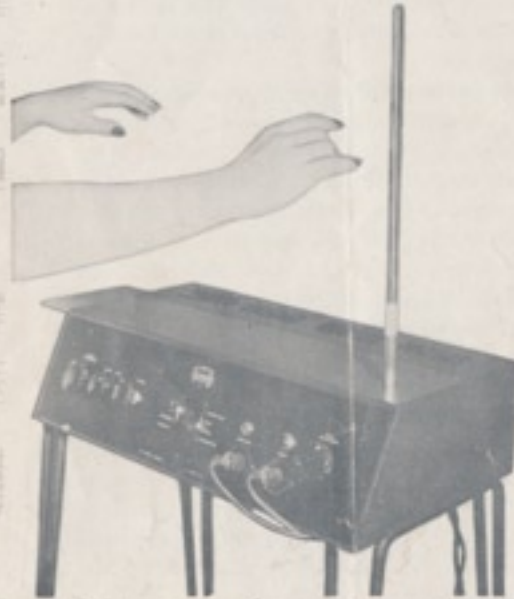
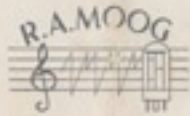


THE R. A. MOOG THEREMIN

All R. A. Moog instruments are fabricated from high quality, conservatively rated components, and assembled by skilled craftsmen. In addition, all instruments undergo more than forty hours of exhaustive tests and adjustments to achieve uniform and optimum performance. Because of advanced design, quality control, and thoroughness the musician can own the R. A. Moog Theremin with pride and play it with confidence.



- What is it?
- How is it played?
- How does it operate?

R. A. MOOG COMPANY

51-09 Parsons Boulevard
Flushing 55, N. Y.



"The musical possibilities of the Theremin are infinite."

Sir Henry Wood

The Theremin is an electronic musical instrument, played by the free movement of the performer's hands in the space surrounding the instrument. There are no buttons or keys which the performer touches while playing the instrument, the tones being generated by electronic circuits designed to respond to changes in the position of the player's hands. This method of playing allows the musician a degree of freedom not found in other musical instruments.

Originally developed in 1928 by Leon Theremin, the Theremin quickly gained acceptance in musical circles. Because of its ability to impart intense emotional qualities to a melody, it has been used to produce the theme music for *Spellbound*, *The Lost Weekend*, and other motion pictures. Performances of orchestral and chamber music on the Theremin were given at frequent intervals between the years 1930 and 1948. However, since these instruments have not been produced commercially for more than two decades, Theremin music is seldom heard today.

Recently the demand for an improved Theremin has increased greatly. To meet this demand, the instrument herein described was designed. This Theremin is played in the same manner as the original instrument, but its design has been completely revised, using the most modern circuits and components known to the electronics industry. This improved design is the result of five years of intense research and is characterized by greater ease of playing, stability of operation, and tonal response than was present in the original instruments.

One of the great advantages of the Theremin is its unusually large range of pitch. The player is able to produce any pitch in the five octave range extending from C (two octaves below middle c) to c' (three octaves above middle c). In determining the pitch, the performer places his right hand in the space surrounding the pitch control antenna, a slender rod extending from the top of the instrument. To raise the pitch, he brings his hand closer to the antenna; to lower the pitch he moves his hand away from the antenna. A beautiful, deep vibrato may be easily produced by moving the right hand back and forth rapidly through a small distance. This produces minute and rapid variations in pitch, corresponding to the effect a violinist produces in moving the wrist of his left hand rapidly back and forth.

The performer uses his left hand to determine the loudness of the tone. To make the note softer, the player brings his left hand nearer to the volume control antenna, an aluminum plate mounted on the left hand side of the instrument; to make the note louder the performer moves his left hand away from the antenna.

These are the only movements involved in playing the instrument. As with all instruments, some practice is necessary to achieve a proper technique. If the prospective player has had any musical experience, or is musically inclined, the fundamentals of Theremin playing may be quickly mastered. Once the fundamentals have been learned, the player will find it easy to develop techniques and effects to suit his needs.



This is the position the performer assumes when playing the Theremin. Notice that the performer is not in physical contact with any part of the instrument.

The tones of the Theremin are produced by purely electronic means, without the use of motors, strings, or other mechanically moving parts. A specially designed vacuum tube oscillator circuit, whose operation is sensitive to movements of the player's hand, generates an electric wave. When this wave leaves the oscillator, it passes through a shaping circuit which adds the correct degree of overtones to give a pleasing and musical quality to the tone. Without this circuit the tone would sound dull and mechanical.

An amplifier is employed to convert the electric wave to an audible note. This amplifier is connected to the Theremin by an inconspicuous wire, and may be placed in any position that the player desires. The R. A. Moog model 400 amplifier, or any public address or musical instrument amplifier may be used in conjunction with the R. A. Moog Theremin.

The Theremin chassis is housed in a mahogany cabinet, with a black grille and panel. The cabinet is designed to stand on a table thirty-six to thirty-eight inches high if the performer plays the instrument while standing, or on a table twenty-four inches high if the performer plays the instrument in a sitting position.

All R. A. Moog instruments carry a one year guarantee against failure of all components except the vacuum tubes, which are guaranteed by the original manufacturers.



The model 305 is the first truly modern adaption of Leon Theremin's original instrument. The cabinet is twenty inches long, eleven inches deep, and five and one-half inches high. All manual adjustments and connections are located on the panel which the performer faces while playing the instrument. The two antennae are polished aluminum and may be easily removed to facilitate carrying and storing of the instrument. The model 305 is easily portable, and may be set up in a few minutes.

Actual production of the sounds is accomplished by means of an amplifier which is used in conjunction with the instrument. The quality of the tone is pleasing, not artificial or mechanical.

The model 305 operates from 115 volt 60 cycle alternating current, and consumes less power than a sixty watt light bulb.

All the features to be desired in a Theremin will be found in the model 305. The myriad musical possibilities of this instrument will become evident to the player in a short time. Technical knowledge is not required for the proper operation of the instrument. Furthermore, the model 305 will require little maintenance. A periodic service inspection every two to three years will usually suffice, since there are no moving parts to wear out or components to go out of tune.



The model 351 Theremin

The model 351 is basically identical with model 305. However in the model 351 two features have been added which greatly expand the versatility of the instrument.

The first of these is the OVERTONE SELECTOR, a switch with which the performer may inject one of three *natural* (not tempered) overtones into the fundamental tone. These overtones do not appear as separate notes, but rather give the fundamental tone a quality remarkably similar to the vowel sounds made by the human voice. This is a feature not found in any other musical instrument, and is made possible by the advanced design developed by the R. A. Moog Co.

To the left of the OVERTONE SELECTOR on the front panel of the model 351 is the SYNTHETIC FORMAT, a switch which enable the performer to select one of four basically different timbres. These two switches provide the performer with the ability to select a tone quality to suit his need. The action of these switches is silent, being similar to stop switches on an organ. Except for the switch contacts, the SYNTHETIC FORMAT and the OVERTONE SELECTOR are entirely electronic, and are integral parts of the design of the model 351.

The model 400 is an electronic amplifier designed for use in conjunction with the 305 or 351 Theremin. The chassis and heavy-duty loudspeaker are housed in an attractive mahogany cabinet eighteen inches long, ten inches deep, and eleven inches high. The model 400 amplifier is connected to the main instrument by a wire which plugs into the Theremin control panel. The amplifier may be placed anywhere within a ten foot radius of the main instrument, as the performer sees fit. (Longer connecting wires may be furnished upon request.)

The model 400 Amplifier

