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NBC TRADE NEWS SERVICE

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CHIMES WHICH AREN'T THERE RING IN TIMES SQUARE

The little man who wasn't there now has a musical companion in the chimes which sound the hour from the giant Gillette clock overlooking the statue of Father Duffy in Times Square.

For although the chimes strike the hour and are then heard in the familiar bing! bong! bing! on every quarter hour, there is nothing to strike, and no bells to ring. And it's not done with mirrors. In fact, the chimes are not really chimes at all, but amplified oscillations in radio tube circuits.

The chimes, which are expected to be to Time Square crowds what Big Ben is to Londoners, began their musical time-signal yesterday (Saturday, April 27) at 5:00 p.m. Invented by J. L. Hathaway, an NBC engineer, the notes heard throughout the Times Square section are produced through the vibrations of electrons in a series of radio tubes.

Each note has a vacuum tube adjusted, by means of inductance and capacity, to vibrate at a definite musical frequency. A master clock hand makes a contact and Note Number One is heard, then Number Two, then Number Three. According to Dr. O. H. Caldwell, editor of "Radio Today," who listened to tests of the new instrument; each of the three notes is a rich, tone with some harmonics which heighten the musical relish.

Through arrangements completed between NBC and Douglas Leigh, America's sign king, an amplifier is situated in the gigantic Gillette clock on the Northeast corner of 47th St. and 7th Ave., New York City.

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A line runs to the sign from the Radio City studios where the electronic chimes, no larger than a small radio set, are located. The notes are actuated by a small master clock in Radio City which trips a control, starting the chimes.

The Gillette clock, which dominates Duffy Square, has a giant swinging pendulum, marked out in neon tubing. Leigh, its inventor, looks upon it as one of his sign masterpieces. The amplifier, located midway in the steel frame which supports the clock, booms forth the notes which have a tonal radius of approximately 10 blocks.

The idea of a Times Square rival to Big Ben belongs to an Englishman, E. P. H. James, Advertising Manager of NBC. When James broached the idea to Engineer Hathaway, the latter was working on chime notes which could be produced without any motors or any mechanically moving parts. The successful completion of Hathaway's work first was marked when the electronic chimes were installed in the huge clock located in the International Building, Radio City.

The new chimes differ sharply from the old type still in use on the networks, which produces the initial sounds from steel reeds plucked by a rotating cylinder. Under the old system, the three notes heard are made up of eight partial notes. These 24 partials are tuned to perfection by an oscilloscope and standard frequency oscillator. Tuning of new chimes is vastly simplified in that it is impossible for the individual notes to get out of tune, and initial tuning is accomplished by simple electrical adjustments.

The sound of the NBC chimes sequence, according to Dr. Caldwell, is the melody played most frequently in this country. Dr. Caldwell estimates that the average radio set is used at least four hours daily, with the chimes ringing in the ears of the average listener at least 16 times a day.

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"Out of the United States' present 44-million radios," Dr. Caldwell says, "we will have at least 35 million sets in use four hours a day, and hearing the NBC chimes probably sixteen times daily. That means the NBC chimes will be heard 500 million times each day. Or about 20 billion times a year. In this compilation, the many millions of times the NBC chimes are heard daily on short-wave programs reaching Europe and South America are not included.

"Twenty billion 'plugs' a year is enough to make any theme song or 'musical trademark' the best-known sound sequence on the planet!"

The NBC chimes have found a wide variety of uses in the years they have been NBC's trademark. They have been used, for example, to call diners on boats and in railroad trains, and to mark the passing of the hours not only in Radio City but in Chicago's immense Merchandise Mart.

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