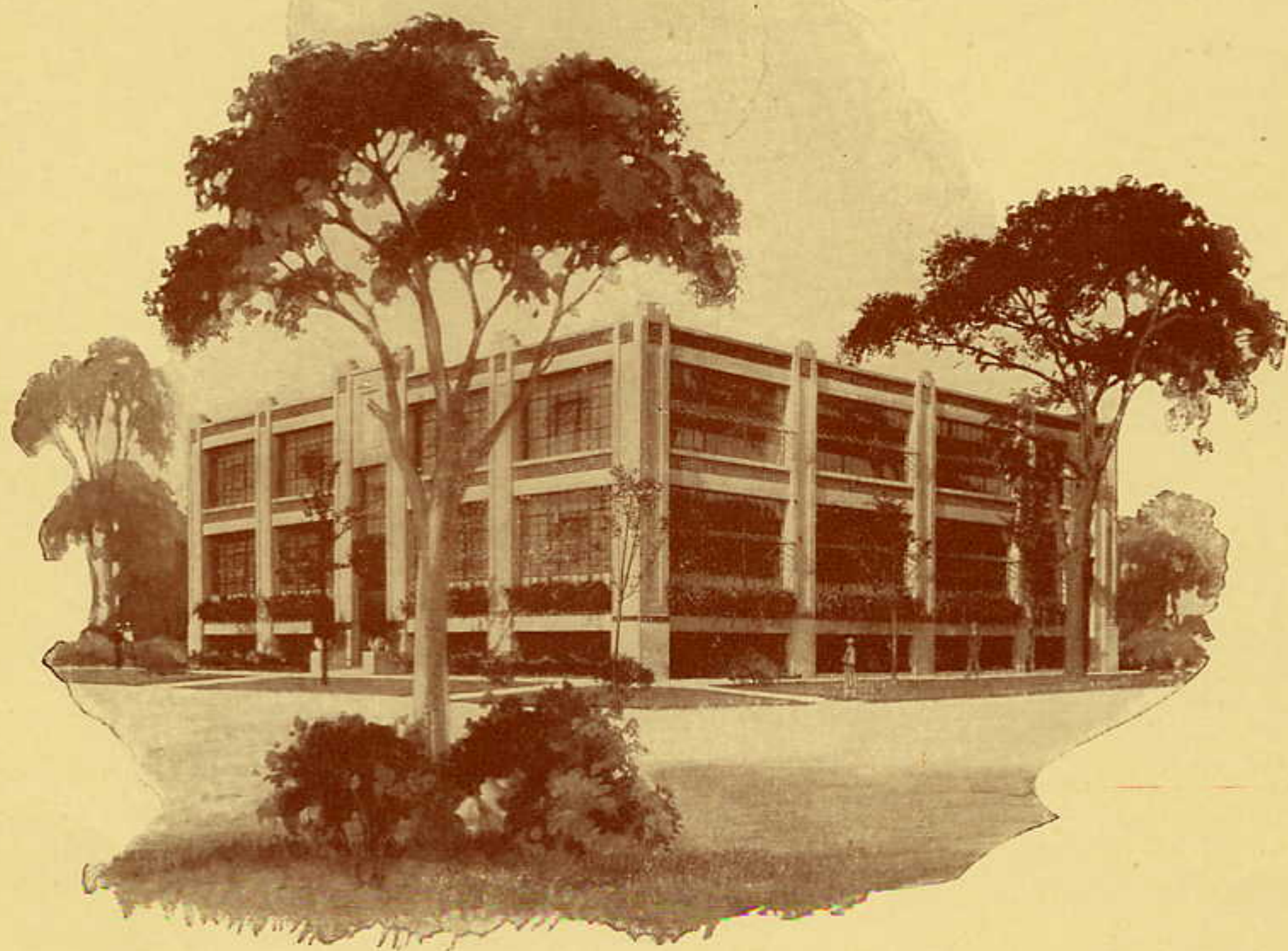


The Story of
ADVANCED DESIGN
and
PRECISION ENGINEERING
in
RADIO



*— a jaunt through
the modern radio laboratory*



We take a conducted tour thru the Scott Laboratories to find the source of perfection in SCOTT CUSTOM BUILT RADIO

“WHAT is there about a Scott Custom Built Receiver that makes it so much better than other receivers?” This question is asked us time and again. The shortest answer we know is “It is a precision built instrument of advanced design.” But suppose we take you through our laboratory and show you just what PRECISION BUILDING means in a radio receiver.

So—take off your coat and hat and come along with us on this “See Custom Built Precision Radio Made” visit. It will give you an accurate knowledge—valuable and interesting—as to how fine radio receivers are designed and built. You will soon realize Scott receivers are laboratory instruments, built in one of the best equipped daylight radio engineering laboratories in the country.

The Scott Research Laboratory

All ready! Let us start our visit by climbing up the stairs to the roof, where we find the Experimental and Research Laboratory located. Here you notice the large number of antennae of different types, enabling us to duplicate practically any reception condition under which a receiver is required to operate.

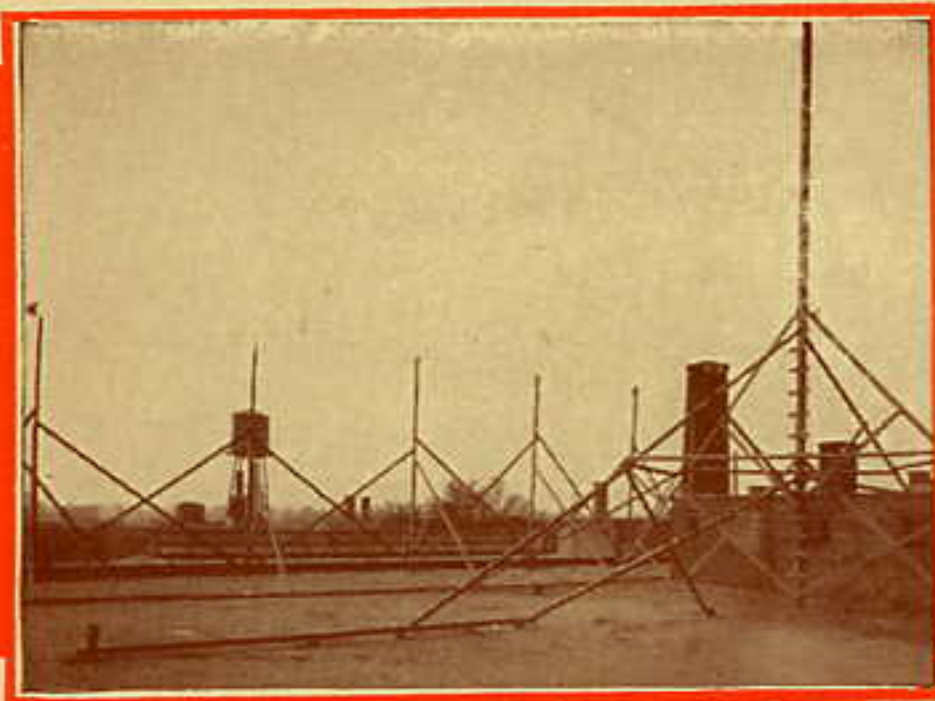
Inside the Experimental Laboratory we find the very latest radio measuring and testing equipment. On the right in the photograph, notice the special copper-screened room and the instruments which are used in making the precise measurements required for charting curves on selectivity, sensitivity and fidelity of tone, enabling us to measure with mathematical exactness the efficiency of a receiver and determine when any change made in the circuit is beneficial or not—there is no guesswork here. Tone distortion is immediately detected, for these instruments show up such a condition more quickly than the most sensitive of human ears.

The larger laboratory enclosing the screened room, contains some of the finest and most sensitive measuring apparatus used in radio research work. The Drafting Department and the Acoustical Research Department are also located in this roof-top laboratory.

Following the completion of the perfected receiver design in the laboratory, models are made up, taken outside the laboratory and required to perform 100% in various locations where, quite often, the average radio set falls down completely. Then, and then only, do we start building the receiver for you.

Why Scott Receiver Gives Exceptional Performance

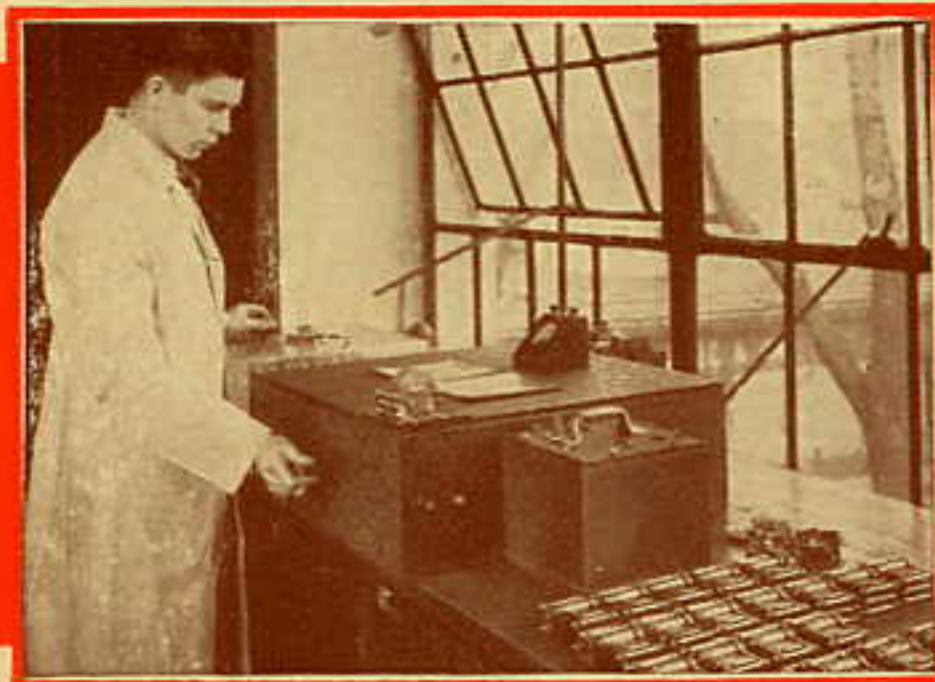
Scott receivers are not built to sell at a price, for the finest possible results cannot be obtained if a set must be designed to cost not more than a certain figure. After completion of a Scott receiver, the labor and material costs are computed and—then, and then only is the selling price set.



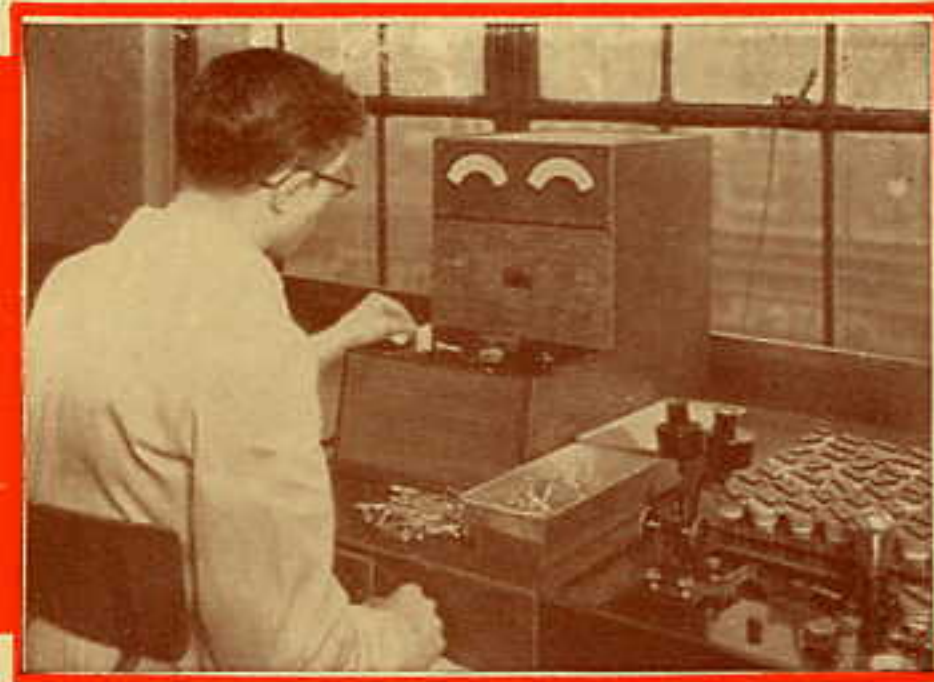
Outside our roof-top Experimental and Research Laboratory Notice the many different types of antenna for experimental work. Here we can duplicate practically any receiver condition or type of antenna.



Inside view of Research Laboratory with its complete equipment of precision measuring and special test and checking apparatus. All experimental work is done here.



Testing equipment in which all fixed and variable condensers are checked. This apparatus is so sensitive it will measure condensers within 5 mmf.



In this apparatus all resistors are checked against laboratory standards and must measure within 1% or are rejected.

The parts used in Scott receivers are rigidly inspected to maintain the quality demanded in the specifications. All fixed and variable condensers are checked for capacity by the calibrated standard condenser contained in the aluminum box shown on the left. The box in the center contains an extremely delicate capacity bridge and amplifier which can measure the capacity of a condenser to within five micro-microfarads.

Resistors Measured Within 1/2 of 1%

If a resistor, controlling the bias on certain tubes, is off its rated value, it results in broad tuning, poor tone or lack of selectivity. The apparatus shown tests every resistor used in Scott receivers. Testing resistors on this apparatus, able to measure values within one half of one per cent, is slow work—but necessary to keep Scott receivers in the position they now occupy in the radio world. Equipment such as this is not generally seen outside a research laboratory.

After the transformers are assembled, they are checked on a very sensitive gain meter. In this test the dial on the oscillator condenser is rotated and the deflection on the laboratory type millimeter observed under a powerful microscope showing when the needle reaches the exact top of its swing. Matching the transformers in this way enables us to secure very close adjustment of the completed amplifier and permits operation of the receiver just below the point of oscillation where the greatest efficiency, sensitivity and selectivity is obtained.

Special Treatment Given Transformers

After test, the transformers are baked in an electric oven, (the temperature of which is thermostatically controlled) for twenty-four hours to remove every particle of moisture. A special treatment is now given to the transformer which enables it to retain its characteristics indefinitely. Because of this treatment Scott receivers are able to work satisfactorily in humid tropical climates or on sea coast locations where the salty air very quickly renders the ordinary set useless. Once the transformers are checked, treated and finally assembled in the Scott receiver, you are assured that it will perform perfectly years after date of purchase.

Antennae and Oscillator Coils Matched Within 1/3 of Turn

An apparatus designed in our Research Laboratory, which we believe to be one of the most efficient pieces of testing equipment ever built, is used to match the antenna and oscillator coils. It is so sensitive that if just one turn of wire is removed from a coil containing eighty or ninety turns, it will show a deflection on the needle of three points. With this apparatus we can match our coils to *within one-third of a turn of wire.*

Chassis Assembled as Carefully as Fine Watch

Every Scott receiver is wired by the expert fingers of men who know exactly why each wire should go into a certain place and position. Upon completion, the whole is neatly cabled together and ready for inspection by the engineer in charge of wiring the receivers. After receiving his O.K. it is passed to a carefully shielded Test Room where the receiver gets its performance test.

Reception conditions vary from day to day, so instead of an "air test" each Scott receiver is tested scientifically by precision measuring instruments, which show with absolute accuracy, the efficiency of the receiver. These instruments are so sensitive that they must be used in a completely shielded room so as to exclude all outside disturbances. Measured power at various radio and audio frequencies is fed into the aerial side of set by means of a G. R. Standard Frequency Generator and G. R. Audio Oscillator. This signal is amplified in the set and fed into a loud speaker acoustically coupled to a high quality microphone. This picks up the sound power transmitted from the speaker. This power is then measured on a vacuum tube voltmeter.

Put in simple language, the signal from the Frequency Generator takes the place of the radio wave transmitted from the broadcasting station, and the microphone takes the place of the human ear. So, instead of depending on variable reception conditions and the personal opinion of a human tester, we use sensitive measuring instruments which show with CERTAINTY the EXACT PERFORMANCE the receiver will give in actual use in the home.

Now that we have completed our tour, you can readily appreciate that the Scott receiver is the product of a well equipped laboratory, built with precision and watchmaking craftsmanship.

Let us conclude this tour with a visit to our Salon and hear an actual demonstration (the most convincing test of all), and view the many beautiful consoles we have designed expressly to house the Scott receivers.



To insure the greatest efficiency in receivers, the oscillator and antenna coils must be matched to each other perfectly. This apparatus measures inductance of coils with 80 or 90 turns to within a third of a turn.



All transformers are first baked in this thermostatically controlled electric oven to remove every trace of moisture, then specially treated to prevent moisture afterwards affecting them.



Experienced engineers assemble and wire each Scott receiver under ideal working conditions in this daylight room. Every set is built with the same care as a fine watch. A Scott is the "Precision Instrument of Radio."



All I. F. Transformers are checked on the oscillator and vacuum tube voltmeter shown here. To insure accuracy, a high powered microscope is used to observe reading.



The finest and most modern radio measuring apparatus in the country is here used to make the final tests of completed receivers.

The advanced design and precision engineering in Scott Receivers establish world's reception records



THE RECEPTION ROOM

A corner of the reception room where you can, if you so desire, sit and listen to a Scott receiver being played in the Salon which adjoins it.



THE SALON

Here in the Salon you will find on display some of the very beautiful consoles designed exclusively for Scott receivers.



THE AUDITING DEPARTMENT

In our auditing department you note we use the latest type of office equipment, so that all transactions are handled quickly and accurately.



THE CORRESPONDENCE DEPARTMENT

In this bright airy room is handled all correspondence. Dictating machines are used exclusively by correspondents so that all letters may be replied to promptly.

Let us conclude our tour in the Salon and listen to a SCOTT receiver for a while. Here you will have final proof of its superiority. You hear tones so clean cut, clear and perfectly natural that it requires little effort on your part to imagine you have the actual artist or orchestra in the room with you. You will notice that no matter what the degree of volume, whether it be a mere whisper or full auditorium volume there is not a trace of distortion at any time. Then you observe that every degree on the dial brings in a different station but until you hear the call letters you do not know whether the program is coming from a local station or one a 1,000 miles away.

While you are listening glance over the beautiful consoles we have designed for SCOTT receivers. Each cabinet is made with selected woods, and is a master-piece of the cabinet makers art—for they too like SCOTT receivers are custom-built. Their graceful lines will add distinction to a room in any home. All have the same "thoroughbred" look of quality you notice in a custom-made suit of clothes—for the really fine things are always hand-made.

Only Advanced Design Plus Precision Engineering Made These Records Possible

But something more than mere precision in building is required to produce a thing that is outstanding in performance—and that is ADVANCED DESIGN.

When Major Seagrave in his automobile the "Golden Arrow" swept across the sands of Daytona Beach at 231 miles an hour—he established a World's Record for the fastest speed ever attained by man on land. When Lieutenant Waghorn, in his Rolls Royce Seaplane paced time at the amazing speed of 331 miles an hour he established a World's Record for the fastest speed man has ever attained either on the land or in the air. These remarkable accomplishments—the World's Records they made—were due solely to their ADVANCED DESIGN and the PRECISION ENGINEERING with which the advanced design was given material form.

World's Records Established By Scott Receivers

In the field of radio a receiver of such advanced design was created by E. H. Scott and hand built with such precision, that in a period of thirteen weeks, it established no less than FOUR VERIFIED WORLD'S RECORDS for the CONSISTENT, NIGHT AFTER NIGHT RECEPTION of stations 6,000 miles or more distant. Fancy listening DURING ONE EVENING to SIX stations all over 6,000 miles away, and later having that reception verified. During the 13 weeks the receiver was tested 117 programs were heard, logged and verified, and EVERY ONE of these programs came from a station 6,000 miles or more distant. In fact 19 of these programs came from stations over 8,000 miles away.

The performance of this receiver attracted the attention of radio fans not only all over U. S. A. but all over the world, as its records were so remarkable and so fully verified that they were reported in the leading newspapers and radio magazines. Hundreds of people wrote Mr. Scott asking him if he would build them a duplicate. And so for the last six years he and the staff of skilled engineers he has gathered around him, have been building, to a laboratory standard, nothing but super powerful receivers.

They have been sent to all parts of the world and their owners have written telling how at last they were able to secure reception of stations never heard before.

You can be assured that in a SCOTT receiver, you have the last word in radio, with all of the worth while developments in radio science incorporated in its design. In a SCOTT you have the most efficient instrument known to the world of radio.

E. H. Scott Radio Laboratories, Inc.

(Formerly Scott Transformer Co.)

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