

# The Scott News

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## LARGE RADIO MANUFACTURERS NOW ACKNOWLEDGE SUPERIORITY OF SUPERHETRODYNE

The superiority of the SUPERHETERODYNE circuit has at last been acknowledged by the larger radio manufacturers, for during the past few weeks most of them have announced SUPERHETERODYNE models for the coming season and are busy dumping their TRF sets just as fast as they can. In Chicago last week, the TRF 1931 models of no less than three prominent manufacturers were being sold at half list prices, and new SUPERHETERODYNE models announced for 1931.

Why this sudden change from TRF to SUPERHET? It can be summed up in one word—COMPETITION. During the last two or three years a number of large scale radio manufacturers have sprung up. They have produced radios by the million, using the same methods that Ingersoll uses to produce his \$1.50 watch. That's a good watch for \$1.50, but it is NOT as good as a \$50 watch and Mr. Ingersoll does not say it is. But in the radio business it is different for the manufacturer of even the cheapest TRF production sets claim to have everything—the finest tone—knife edge selectivity—bare nerve sensitivity.

Millions of these cheap sets have now been sold because Mr. RADIO BUYER, not being a radio engineer believed what was told him WHEN HE BOUGHT HIS FIRST SET. Then he found out that the beautiful tone he was told about was slightly exaggerated—selectivity often so poor that eight or ten points was necessary to tune out a local station—and the reception of a distant station was an event.

### Today It's Performance That Counts

Today conditions are different and the buyers must be shown. Thousands of people are now in the market for their SECOND set, but this time they know more about choosing a set. They have been educated. They now demand PERFORMANCE not PROMISES. They know how to test a set for selectivity and demand fine tone and it is going to be hard to sell them anything this fall but a REAL receiver. THAT'S why the wise manufacturer knows that this year to have a chance with his competitors, he MUST build a SUPERHETERODYNE,

Here is an article of extreme interest to every thinking man engaged in the business of selling radio receivers. When no one but a number of prominent manufacturers suddenly stop production on their TRF models for 1931, and start dumping them on the market at half list price or less and announce superheterodyne models, well, you can figure it out for yourself.

Read this article carefully, it will give you the latest dope on the superheterodyne situation and also on the new superheterodyne that's at least 12 months ahead of any other superheterodyne you can buy today.

and for this season he must deliver PERFORMANCE

### Only Superheterodynes Used for Transatlantic Reception

One very strong proof of the superiority of the superheterodyne is shown by the fact that it is the standard circuit used in the high power receivers used in the Navy and Army and in the receivers used to pick up signals from foreign countries to be re-broadcasted here

### All Superheterodynes Not Performers

But because a receiver uses the superheterodyne circuit, does not guarantee that it will be an exceptional set. There is as much difference in quality in superheterodyne receivers as there is in suits of clothes. One suit may cost \$25, while another may cost you \$75. But you KNOW that the \$25 suit is NOT as good as the \$75 one.

The same principle holds true in buying a radio receiver as it does when buying a suit of clothes, and a \$100 radio set will never equal the performance of one costing \$300. This season will see on the market a large number of cheap superheterodynes. They will sell for a time on the strength of the fact that they are "superheterodynes."

### High Quality Parts Must Be Used

A super is essentially a high gain receiver and every part used in it must be of the highest quality if it is to be efficient. The small losses in cheap parts that have little or no effect when used in TRF receivers make a tremendous difference in performance when used in a superheterodyne. Then again, if the maximum in performance is to be secured, all parts must be PERFECTLY matched.

**New 1931 Screen Grid \$129.50 Radios**

**Less Than 1/2 Former Price!**



Equipped with 3 Screen Grid Tubes and Super Dynamic Speaker in Beautiful Walnut Cabinet!

THE nationally famous new 1931 radio—now offered for the first time at LESS THAN HALF PRICE. The triple screen grid circuit gives tremendous amplification, making the set extremely sensitive and highly selective. The handsome, modern Dynamic speaker is famed for its pure, natural tone. The handsome, artistically designed towboy can make a very rich appearance. On sale at our 3 stores.

TRADE-IN COUPON

NAME \_\_\_\_\_

ADDRESS \_\_\_\_\_

MAIL TO \_\_\_\_\_

**\$6.00 DOWN**

Balance Monthly, Paid Out by Check.

**59.75**

COMPLETE

Nothing Else To Buy

Save \$69.75 Now

Buy New Radios—Save More Than 1/2 the Original Price of \$259.50! Complete—Nothing Else to Buy!

Above is an example of the advertisements dumping TRF 1931 Models. This advertisement appeared in a leading Chicago paper Oct. 5th, 1930.

If just one I. F. stage is slightly off peak, it drags down the efficiency of the whole receiver. You can't produce a really high quality precision product with high speed production methods, AND A SUPERHETERODYNE MUST BE BUILT TO AN EXACT STANDARD TO SECURE MAXIMUM EFFICIENCY FROM IT

### Which Would You Choose

Then EXPERIENCE is building superheterodynes counts. Suppose you found it necessary to be operated on for some complaint and had your choice of two surgeons—one a man with years of experience, the other a young man who had just received his doctor's degree—which would you choose? "What a ridiculous question," you say. "Of course I would rather have the experienced man, but what has that to do with buying a superheterodyne radio receiver?" Just this:

### Nothing But Superheterodynes for Over Six Years

A superheterodyne is a specialty in the field of radio, and to design and build it right requires EXPERIENCE and lots of it. A superhet is a totally different proposition to a TRF set. Because an engineer can design a TRF receiver does not necessarily mean he can design a good superheterodyne. Mr. Scott and his engineering staff have specialized in designing and building nothing but high power, custom built superheterodynes FOR OVER SIX YEARS. Doesn't it stand to reason that a firm with a wealth of experience like that behind it will know more about the designing and building of supers than the firm just starting out to produce one?

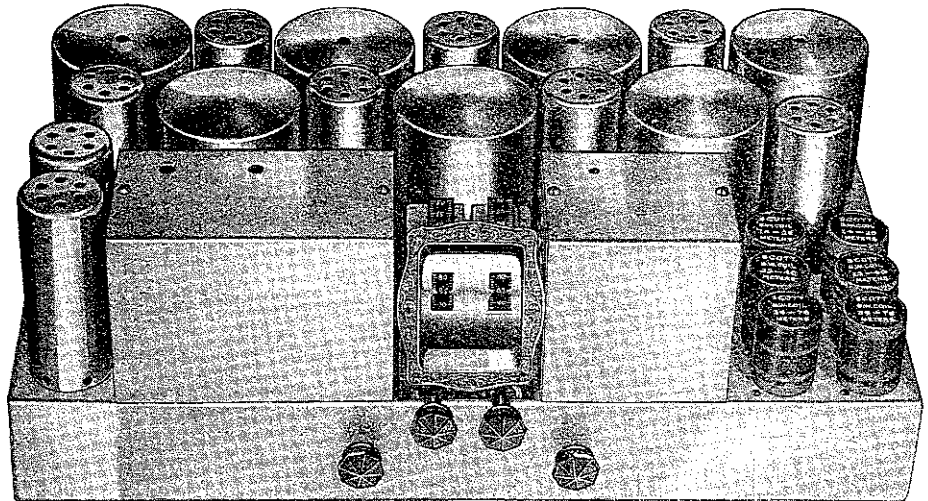
Here's the story behind the Scott Superheterodyne. During 1922, 1923, and 1924 Mr. Scott wrote a daily radio article that was published in over 100 newspapers in U. S. A. and Canada. During this time he actually built, then described the circuit, construction and operation of over 150 different receivers. From the experiments made in testing and observing these receivers, he selected the most efficient of all for his own personal set—a superheterodyne now known to radio fans all over the world as the SCOTT WORLD'S RECORD SUPER

### Outstanding Records Made by the Scott Superheterodynes

The performance of this receiver startled the radio world, for in a test period of thirteen weeks it established no less than FOUR 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 being tested 117 programs were heard, logged and verified, and not one of these stations was closer than 6,000 miles to the receiver. In fact, 19 of these programs were received from stations over 8,000 miles away. Such was the record of the FIRST SCOTT WORLD'S RECORD SUPERHETERODYNE way back in 1924.

During the succeeding years we have made nothing but superheterodyne receivers. All of the worthwhile developments have been incorporated in Scott

# ANNOUNCING THE NEW 1931 SCOTT ALL WAVE SUPERHETRODYNE



Our new model is just the receiver many thousands have been looking for. The main points about the NEW SCOTT ALL WAVE SUPER are:

- (1) Operates Entirely from the A.C. line.
- (2) Completely Shielded.
- (3) Covers all wavelengths from 15 to 550 meters.
- (4) Tunes as easily and smoothly on the short waves as it does on the broadcast band.
- (5) 10 K.C. selectivity over complete broadcast band.
- (6) Sensitivity so great distance range is practically unlimited.
- (7) Full natural tone—not a trace of distortion.

Superheterodynes, usually months before they were available in other sets.

The World's Records established by Mr. Scott were not the result of mere chance, but were made because he put into his receiver features never before used in a set. He has continually improved on the original design, making each successive receiver even more selective and more sensitive to distant signals.

### The Modern 1931 Receivers Must Tune All Waves

Today broadcasting is different to what it was even twelve or eighteen months ago for now there is plenty doing on the short wave band, its not all dots and dashes or code. With the right kind of a short wave receiver, you can listen to concerts broadcast from England Germany, Italy, Holland, South America, Australia, New Zealand and many other foreign countries. Here in Chicago with this new model we have, between 5 and 6 P. M., listened to a program from London that was broadcast on the short waves. You don't need to wait for evening to bring in distant stations, in fact

many short wave stations 3,000 and 4,000 miles distant come in better in broad daylight than they do at night.

### Tune In Television Programs

Television is coming along fast and all of it is being transmitted on the short waves. If you want to see the performers in scenes transmitted, and your receiver will only tune down to 200 meters, you will have to buy another receiver to bring them in.

### Tremendous Advance in Radio Reception

Radio is advancing so fast that few people realize the tremendous strides that have been made during the last 12 months on short waves. The short waves between 20 and 80 meters are now being used on the Transatlantic Telephone Service.

### Pope Pius Will Talk to World on Short Waves

At Vatican City has just been erected one of the most powerful short wave stations in the world through which Pope

Pius will talk to his people in every land on the globe. The latest information is that the dedication ceremony will take place early in November. Just think what that means to people of the Catholic Faith, and what a demand it will create for a powerful short wave receiver.

If you are going to buy a new receiver, why buy one that is limited to reception between 200 and 550 meters only, that will bring to you only half of the entertainment and programs on the air? This new SCOTT model will, in one powerful receiver, bring it all to you, both on short and long waves.

### Daylight Reception From 500 to 5,000 Miles Now Possible

Just a few weeks ago the value of the short waves was brought out very clearly. The Columbia Broadcasting System was putting on Mr. Ripley of Believe it or Not fame, over a group of Eastern stations, and desired to let a firm in Chicago hear him perform. Unfortunately the broadcast was during daylight with the nearest station over 900 miles away and daylight reception over that distance on the broadcast band from the City of Chicago is simply not possible—at present anyway. The Columbia people called our laboratory and asked us if we could help them get this broadcast. We said, "Come on out and bring your clients." They did—and for half an hour they all listened to Mr. Ripley as he came in clear as a bell and with more volume than we could use from a station 900 miles away in daylight ON THE SHORT WAVES.

### DX-ing Now International Sport

This Fall will see rebroadcasts from foreign countries a common event. Already a rebroadcast from London excites little comment. But think what a kick you would get if you could tune in a program DIRECT yourself from the station 3,000 to 5,000 miles away. That's what you can do with this new model. It takes you back to the good old days when DX-ing was a sport, but instead of fishing for DX in U. S. you have stations spread over the whole world at your finger tips.

### The Circuit

The circuit is a Superheterodyne with a stage of R.F. ahead of 1st detector, three stages of high gain intermediate frequency amplification power detection, and with both first and second audio stages push pull.

### The Intermediate Frequency Amplifier

In the I.F. stages lies one of the secrets of the remarkable performance of the new SCOTT ALL WAVE SUPERHETERODYNE. The secondary is wound on a bakelite form, then specially treated to make sure its characteristics will remain constant over a period of years and not be affected by climatic conditions. The primary is a universal winding treated in the same way as the secondary. Both primary and secondary are completely shielded from each other and a special method used to couple the primary to the secondary. This system has enabled us to secure tremendous amplification without oscillation. In these new I.F. transformers we have accomplished something engineers have been striving for for years, that is, a high gain transformer with a flat top curve.

### The Radio Frequency Amplifier

A special bank-wound coil using Litzen-drath wire is used as the R.F. Transformer. So efficient is its design that the gain secured from it equals two stages of R.F. as used in the standard set. This stage not only increases the sensitivity but also the over-all selectivity without introducing side band cutting.

### Both Stages of Audio Push Pull

No matter how selective and sensitive a receiver may be, today it is no good UNLESS IT HAS GOOD TONE. The output from the 2nd detector in this new model is fed into a first stage of push pull using two 227s and from this it feeds into the second push pull stage using two 245s. This gives perfect undistorted tone from the slightest whisper to full auditorium volume.

The effect of using push pull in the 1st as well as the 2nd audio stage does more, however, than simply improve the tone. Distant stations so weak as to be hardly audible when a single tube 1st audio is used, are brought in with 100 per cent better tone and LOUD SPEAKER VOLUME with the 1st audio push pull. You get call letters from DX stations clearly which before were never distinct or clear enough to be sure of.

### Wave Lengths Covered

The range is from 15 to 550 meters, the different ranges being covered by means of plug-in coils.

### Tubes Used

Five 224s, four 227s, two 245s, and one 280

### Shielding Very Complete

You will notice that the new model appears to be well shielded, yet the photograph does not reveal just HOW completely it is shielded. Each section of the condensers are independently shielded, then a complete shielding goes over each gang. To secure smooth and noiseless tuning each section is pigtailed and the shafts run on ball bearings.

Each of the I.F. stages are TRIPLE shielded. The secondary being in one shielded can, the primary in another can located underneath the base. This system of shielding together with our method of coupling the primary to the secondary has enabled us to raise the gain of each I.F. stage two or three times more than was ever possible with an I.F. transformer coupled in the usual way. Yet with this increased gain, the set is perfectly stable and free from oscillation at any degree of volume.

The R.F. stage ahead of the 1st detector, the antenna coupler and the oscillator are all shielded in separate cans to prevent coupling between circuits, and also to prevent pick-up from stations other than the one tuned in.

Some idea of the extreme sensitivity as well as the completeness of the shielding can be obtained when I tell you that with the antenna disconnected the receiver is absolutely dead, and you cannot hear even a whisper from the most powerful local station. Yet, take the can off the 1st R.F. and not only locals but outside stations four and five hundred miles away can be tuned in with good loud speaker volume. Now connect a piece of wire about 10 feet

long to the antenna post and a good ground and in will come stations on both coasts. This little experiment will not only show the completeness of the shielding but will also demonstrate the remarkable sensitivity.

### Tuning

To secure maximum selectivity and sensitivity from the top to bottom of the scale, we use two dials which are placed so close together that they are as easy to watch as one dial. No trimmers are required. The two dials track with each other within a point so that tuning is just as easy with two dials as it is with a single dial. It would have been quite easy to gang both condensers to a single dial and get very good results, but we believe the man who buys a SCOTT receiver is looking for the most efficient receiver he can find, and will prefer a set with two dials if it makes it possible to get better reception.

### Easy to Tune on Short Waves

It is well known that the average short wave receiver requires considerable skill to tune. This is because in addition to the tuning dial you have a regeneration control as well, which is usually quite critical. In our receiver, regeneration is fixed, and all you do to tune in short waves is turn the dials and in they come. Volume is controlled on the short waves with the same knob that controls it on the broadcast band. When I tell you that it is as easy to tune in stations on the short waves as on the broadcast band I am simply stating a fact.

### Power Amplifier

The power amplifier is a separate unit which supplies current for the receiver and also has the last push pull stage of audio.

No front panel is shown on photo. We can, however, supply a front panel fitted to chassis when ordered. The chassis measures 21½x11x7½ inches.

### About Screen Grid Tubes

Ever since screen grid tubes were first introduced three years ago, engineers have been trying to find a circuit that would enable them to use the tremendous amplification these tubes are capable of giving. In 1927 we introduced the Scott Screen Grid 9, a superheterodyne receiver using screen grid tubes, and since that time all Scott receivers have used them.

In the design of the 1931 SCOTT ALL WAVE SUPERHETERODYNE we have succeeded beyond our fondest hopes, for it has such tremendous power that it does not seem possible it's all coming out of one receiver.

Here is the receiver we have all been waiting for. There's no tricky regeneration control to adjust. Simply turn the tuning dial and zipp, zipp, in come stations one after the other with enough volume to make the speaker walk away, and you don't know whether it's a station in U. S. or Australia until you hear the call letters. That's not an exaggeration, but a simple fact, for you can't realize the tremendous kick a short wave signal has until you have actually listened to some of these foreign stations coming in.

THE  
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E. H. SCOTT, Editor

Each year the number of receivers we are sending to foreign countries is increasing, and at the present time nearly 10% of all the sets we make are built for some foreign customer.

In many foreign countries there are few broadcasting stations, and in some cases the nearest station with a half way decent program is from 2,000 to 3,000 miles away. A few weeks ago we had an enquiry from an American now located in Burma. He said he had heard of Scott receivers and was hoping we could build him a set that would enable him to tune in some of the stations in Japan and Australia (both 3,000 miles away) and that we could name our own price if we could give him a set that would tune in American stations. We feel sure it won't be long before our friend will be listening to his native language through a Scott receiver.

A recent visitor to our laboratory was from Porto Rica and is the Comptroller of a large sugar company there. He has tried three different receivers without much success. A description of our receiver with its sensitivity, selectivity and fidelity curves in a radio magazine which had tested it interested him, so he came up to see what we had.

To his surprise, we found, on looking up our files that we had two users of Scott receivers we could refer him to on the island within 100 miles of where he was located. Letters from both of these reported wonderful reception.

Scott receivers are used all over the world because they PERFORM. They are sent to the four corners of the globe and are in use in locations where it has been impossible heretofore to secure reception with other receivers. Below you read of a few of the countries Scott receivers have been shipped to:

Chin Neng Chiu Changsha, China	A. Kelly London, England
Armando I. Lopez Montevideo, Uruguay	R. S. Cabbe Nassjo, Sweden
D. R. Henderson Dunedin, N. Z.	H. A. Mueller Lucerne, Switzerland
S. T. Kemp Bahama Island,	J. Quesnot Papeete, Tahiti
E. W. I. Augusto Da Costa Rio de Janeiro, Brazil	W. H. Johnson Hilo, Hawaii
Luis Ley Arata Las Palmas, Canary Islands	I. Kondogiani Florina, Greece
A. Diacono Port Said, Egypt	J. Pirojsa Bombay, India
Ricardo L. Balanquit Manila, P. I.	W. E. Barnes Hamilton, Bermuda
L. H. Lempert Penjamo, Gto. Mexico	Casa Luis Ferrari Sandiago, Chile
	S. Myers Johannesburg, S. A.

## Mr. C. C. Robertson Tells How He Sells Scott Radio

This month I received a very interesting letter from Mr. C. C. Robertson of Ashland, Oregon. Charley and I have at least two things in common—we both are bald as bats—and we both think Scott Receivers are the finest in the world. I believe he knows as much about them as I do myself—I read some of the selling talks he makes to his prospects about them.

He uses two antennae—one outdoor, an inverted L 35x25 ft., and another in the attic facing west. For a ground connection he has a 2-ft length of galvanized pipe in moist soil.

He has his demonstrating room specially fitted with a number of framed cards:

SCOTT—not how CHEAP, but how GOOD.

SCOTT—Built to a STANDARD, not to a PRICE.

SCOTT—The BEST things are ALWAYS hand made.



Mr. C. C. Robertson

### Difficulties Found by Robertson

"Prices inserted in folders are a guarantee to the prospect, but I mail no folders until I make a personal call as it seems advisable to SELL them the set before price is mentioned. They must be made to realize the difference, in hook-up, in custom building and in performance, before they are scared off by a higher price, especially now."

*NOTE—I wonder how many more of our representatives have found the prices marked on the folders a difficulty. Would you sooner have the price left off the folders and the list prices given on a separate price sheet. I would like to hear from everyone selling Scott sets, giving your ideas about this.*

EDITOR.

Now, here are some of the selling talks Charley makes. I think they are very good.

### Makes Competitive Tests

"I will put a Scott alongside any other set you may have in your home. The Scott will beat it on any and every count. I will ONLY do this provided you want a QUALITY set. If you are going to buy a "price" set there would be no use. I can compete on a PERFORMANCE basis but not on a PRICE basis—the Scott isn't that kind of a set."

"The Scott Laboratories have been building sets continuously for the past SEVEN (wrong Charley, its only six years—Ed.) years. Look around you and stop and think how many of the largely advertised makes you heard of seven years ago or even half that long ago. By the way, Scott has been building SUPERS for that seven (six) years—the Scott is not something that is "being tried on the dog" but is a proven set. The Scott is Custom Built to order in a laboratory—it is not machined out by the thousands, in a factory."

"To those who are technically inclined or who care to know WHY a Super is better I explain, briefly, the three divisions of the Super—mixer stage, IF Stage, and Audio Stage."

### Tells Why Custom Built Receiver Best

"A Superheterodyne is the most selective and the most sensitive circuit that it

is possible to build—PROVIDED it is properly designed and is carefully built of precision parts. This practically means that it must be CUSTOM BUILT if it is to give the results a Super should give. If the Scott were not properly designed they could not have continued in business for seven (no just six) years. If it were not carefully built it would not give the performance you have just witnessed."

### Explains Difference Between "Custom Built" and "Factory Built"

"Building a radio is simply the mathematical working out of a problem, using the four tables—addition, subtraction, multiplication and division. Supposing you work out some imaginary problem using certain numerals found in those tables and note the answer. Now work out that same problem but change some of the factors and you have an entirely different result. So it is with a radio set—if the component parts are not identically alike in every set—the performance will not be the same. In a Scott they are as near alike as it is humanly possible to make them. If you should listen to six factory built sets—one after the other—all of the same model and make—you would pick out one particular set as being the best. WHY? They are all SUPPOSED to be alike. You would pick out the certain one because they are NOT all alike. If I had six Scott receivers and turned them on one at a time, you could not tell one from the other. WHY? Because they ARE all alike, due to the fact that the parts are carefully tested and matched."

Here's my argument for the man who says: "I have never heard of a Scott."

"You have not heard of a Scott over the Radio and you have never seen it advertised on a bill-board—when you pay your money for a Scott it goes into the SET, and not on a bill-board or for some expensive national advertising—it is IN THE SET and you get it."

*Now, that's what I call some good arguments, and I want to thank Mr. Robertson for writing us. I hope we will have another letter as good as it for our next issue.*

EDITOR