SCOTT NEWS

NEWS OF LATEST DEVELOPMENTS IN THE SCOTT RESEARCH LABORATORIES

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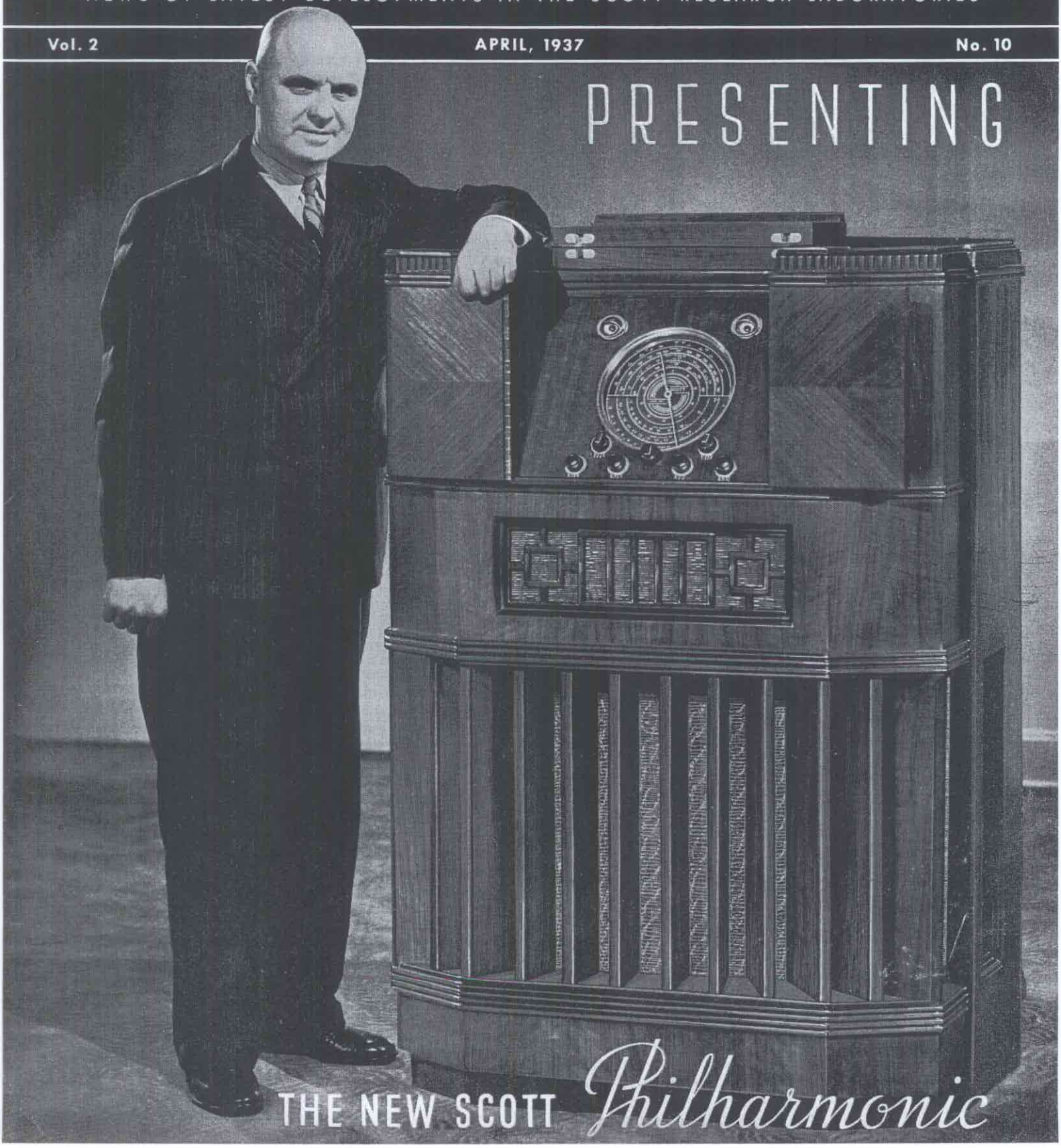


A Remarkable New Receiver

DESIGNED BY SCOTT RESEARCH LABORATORIES CREATES ASTOUNDING FIDELITY AND PERFORMANCE STANDARDS!

LIKE the name Stradivarius on a violin, the world's synonym for FINEST in violins, the name "Scott" on a radio receiver has become, thru the years, synonymous with the FINEST in radio. For many years a Scott has been the chosen receiver of noted artists the world over, and today will be found in hundreds of the homes of those who have won international fame in the world of music, art, education, business and science.

This masterpiece of advanced design and craftsmanship —the new SCOTT PHILHARMONIC RECEIVER—is, we believe, the finest instrument that radio engineering science knows, and one that will give a standard of performance, and a degree of tonal perfection, utterly beyond that of any other receiver in the world today, or that, we believe, will be produced for many years to come.

The great scientific achievements of our age first found their inspiration in the minds of scientists, then were brought to perfection after many months, and sometimes only after years of ceaseless work in the Research Laboratories. The complete story behind the new SCOTT PHILHARMONIC RECEIVER is one of the most absorbing and interesting stories of advanced research in the whole history of radio.

When we say we believe that in the new SCOTT PHILHARMONIC RECEIVER we have *the world's most highly developed receiving instrument,* and one *that will give Finer Tone and Better Reception,* not only from stations here in our own country, but from far distant foreign lands, we sincerely believe we are simply making an actual statement of fact.

Year after year, Scott Receivers have been from one to four years ahead in their design, for it can readily be proved that it has been from one to four years later before other receivers were introduced with features which were first engineered and introduced in a Scott Receiver. From its Research Laboratories have come many of radio's most outstanding developments. In 1924 came World's Record Super Eight, *the first Superheterodyne to efficiently use more than one tuned stage in an I.F. Amplifier,* a receiver so efficient that it created Four Verified World's Records for the reception of stations 6,000 to 9,000 miles distant.

In 1928 from the Scott Research Laboratories came its first Allwave receiver, enabling Scott Owners to enjoy world-wide reception from foreign stations thousands of miles distant for over four years before its superiority was generally recognized by the radio industry . . . a recognition we believe largely due to the pioneering of the Allwave Receiver by the Scott Laboratories.

In 1935 came the introduction of the SCOTT FULL RANGE SUPER-HIGH FIDELITY RECEIVER, which made available to music lovers an instrument capable of reproducing the *entire* tonal range of the human ear from 30 to 16,000 cycles, over four times that covered by the ordinary radio receiver.

The pure, natural tone quality of a Scott Receiver has always been one of its outstanding features, but continuous research has been carried on in order to eliminate the last suggestion of mechanical reproduction. A few weeks ago the precise instruments of the laboratory required to measure Fidelity, told us that we had at last attained our goal . . . a *receiver that reproduced the human voice more naturally and with a higher degree of Fidelity to the actual human voice, and reproduced more of the actual quality, timbre and living tone of musical instruments than has, to our best knowledge, ever before been attained in either radio or phonograph reproduction.*

However, conclusive as was the evidence of our precise laboratory instruments, we have subjected the Fidelity of the new SCOTT PHILHARMONIC RECEIVER to the last and probably the most difficult test to which any reproducing instrument could be put. For many weeks some of the world's most noted musicians visiting Chicago, who were interested in the reports that had gone abroad of what we had accomplished, came out to our Laboratory and listened critically. Most of them remained for hours, when they had come to stay but a short time, thrilled by the fact that at last they were able to hear their beloved instruments not only with the actual timbre and quality of the instruments themselves but *also with all of the original dynamic volume range restored.*

Among these visitors was Eugene Goossens, the well-known composer, and conductor of the Cincinnati Symphony Orchestra, who listened to the complete broadcast of the Chicago Symphony Orchestra. Mr. Goossens' impressions of what he heard, which were typical of those expressed by the dozen or more noted musicians who have visited the laboratory, were expressed the following day in a letter to me, which was entirely spontaneous and unsolicited. Part of his letter reads as follows:

> "From the standpoint of beauty of tone and fidelity of reproduction, it is quite unsurpassed. You seem to have achieved the impossible by actually giving us the *real* tone quality of the instruments of the orchestra—whether broadcast or recorded—and completely eliminating all distortion from the reception. . . . This is indeed a triumph! May I say this expression of opinion is entirely spontaneous, unsolicited, and *sincere.*"

The majority of the recognized and Verified Long Distance Reception Records in radio have been established by Scott Receivers, and today, largely due to its ability to bring in far distant foreign stations regularly and with good volume, Scott Receivers are in daily use in 148 foreign countries.

In the new SCOTT PHILHARMONIC RECEIVER will be found features which have recently been developed in the Scott Research Laboratories (on which patents have been applied for) which provide a still higher degree of Usable Sensitivity, a Greater Continuously Variable Selectivity Range, and a more highly developed Automatic Gain Control System that will, we believe, enable it to establish many new records in the reception of far distant, weak stations from all over the world.

Not even remotely approached, we believe, by any other radio receiver in the world either for tonal perfection or for world reception range—the new Custom Built SCOTT PHILHARMONIC RECEIVER is presented as a supreme medium of perfected radio reception and phonograph reproduction.

A Study
OF THE TECHNICAL DETAILS

A STUDY of the Technical Details of the Many Outstanding Features of the New Custom Built SCOTT PHILHARMONIC RECEIVER, and a Comparison of Its Overall Fidelity, Selectivity, Sensitivity, Power Output, Tone Balance, 10,000 Cycle Attenuation, Loud Speaker Response, Noise Suppression, and Automatic Gain Control, as Shown by the Laboratory Curves on the Following Pages, Will Prove Quite Conclusively That It:

1. Covers a *Greater* Wave Length Range. (3.75 to 2000 Meters)
2. Has *Finer* Tone and *Higher Overall Fidelity*. (From 30 to 16,000 Cycles)
3. Has a *Smoother and More Highly Perfected* Continuously Variable High Fidelity Range.
4. Has *Sharper* and *More Complete Attenuation* at 10,000 Cycles.
5. Has *Purer* and *More Perfect Fundamental Bass Response* Which Is Free from Cabinet Boom and Resonance.
6. Has *More Perfect Tonal Balance* At All Degrees of Volume—Giving the Same Perfect Reproduction of the Bass and Higher Frequencies at Low as Well as High Volumes.
7. Has *Greater Pure Class A Output* with Less Harmonic Distortion.
8. Has *Smoother Loud Speaker Frequency Response* from 30 to 16,000 Cycles.
9. Has a *Higher Degree of Selectivity*, Which Is Continuously Variable from 2 to 16 Kc.
10. Has *More Perfect Automatic Gain Control Systems* on Both R.F. and I.F. Amplifiers.
11. Has More *Usable* Sensitivity.
12. Will Give *Smoother and More Noise-Free Reception* of All Programs, Especially in Difficult Receiving Locations.
13. Has a *More Highly Developed and Distortionless Program Volume Range Expansion System.*
14. Will Give *More Perfect Reproduction from Phonograph Recordings*, Especially the Latest High Fidelity Records.
15. Will Eliminate Phonograph Needle Scratch at Low Volumes, *Without Affecting Reproduction of Low, Mid, or High Frequencies* in Any Way at Normal or High Volumes.
16. Is *Custom Built with Greater Precision*—And from Higher Quality Parts.
17. Has *More Advanced Engineering Features* Incorporated in Its Design.

***More*, WE BELIEVE, THAN ANY OTHER RADIO RECEIVER IN THE WORLD TODAY.**

Higher Fidelity—*Finer* Tone

Clearer Reproduction—*Greater* Undistorted Volume

WITH THE NEW SCOTT *Philharmonic* RECEIVER

The Basic Circuit

The SCOTT PHILHARMONIC RECEIVER uses an advanced Superheterodyne Circuit, incorporating many new and exclusive developments of the Scott Research Laboratory. (Patents Applied For.) All of the knowledge gained in over twelve years of continuous research, development, and building of powerful Superheterodyne receivers has been incorporated in the design of this custom-built precision radio instrument.

Wave Lengths Covered

The SCOTT PHILHARMONIC RECEIVER HAS A CONTINUOUS TUNING RANGE from 3.75 meters (80 megs.) to 2,000 meters (150 Kc.), with no gaps, except a narrow range at each side of the I.F. freq. The exceptionally wide range of frequencies covered by the SCOTT PHILHARMONIC RECEIVER makes possible the reception of all programs on the ultra-short wave, regular short wave, standard broadcast, and the long wave lengths, on six bands as follows: 1ST BAND—150 Kc. to 410 Kc. (2000 to 732 Meters); 2ND BAND—540 Kc. to 1575 Kc. (556 to 190 Meters); 3RD BAND—1.55 Megs. to 4.3 Megs. (195 to 69.8 Meters); 4TH BAND—4.2 Megs. to 10.3 Megs. (71.5 to 29.1 Meters); 5TH BAND—10 Megs. to 26 Megs. (30 to 11.5 Meters); 6TH BAND—25 Megs. to 80 Megs. (12 to 3.75 Meters); Plus—A Special Logging Scale from 0 to 100.

All wave bands are accurately calibrated on an extremely legible 8″ diameter dial, with a special 360° logging scale provided for logging stations on odd megacycle frequencies on the short wave bands. As an example: When tuning between 9.5 and 9.6 megacycles on an ordinary receiver, you have about ⅛ inch tuning area, but on the SCOTT PHILHARMONIC the stations are spread over more than 1″ on the logging scale, allowing 12 separate stations to be logged between these two frequencies.

Number and Type of Tubes

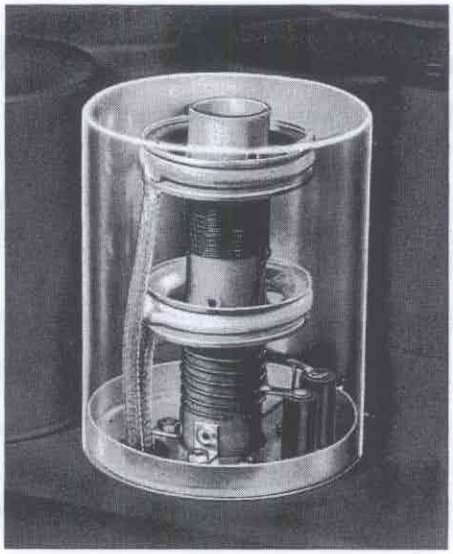
The new SCOTT PHILHARMONIC RECEIVER uses thirty of the latest type tubes—all glass—and study of technical description which follows will clearly show that if even one of these tubes were eliminated, the results now accomplished would be impossible. While metal tubes are undoubtedly more compact than the glass type, a long series of tests in our Laboratory proved to us conclusively that this small size has been attained only by sacrificing performance and dependability.

In the R.F. stages the new 6U7G tubes are used, their extremely high mutual conductance and amplification factor making it possible to secure more gain on the shorter wave lengths.

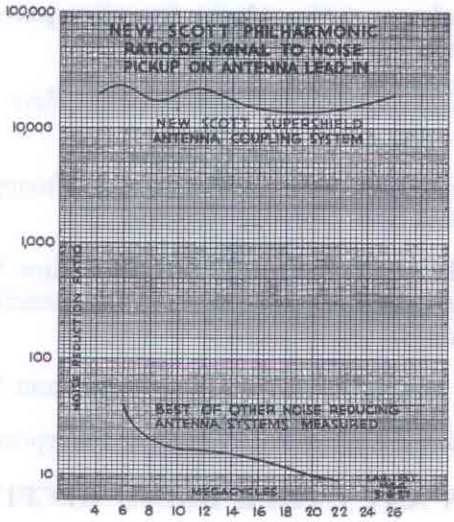
In the Oscillator Circuit the 6J5G tube is used in preference to its nearest metal tube equivalent, the 6G5, because of its superiority for high frequency oscillator operation due to its extremely low electrode capacities, low plate resistance, high mutual conductance and amplification.

In the I.F. Amplifier three 6K7G tubes are used because their extremely low grid to plate capacities aid circuit stability and their very high plate resistance permits greater selectivity and perfect band pass curve shape in the I.F. tuned circuits.

The 6L6G tube, because of its better lead wire insulation and safety factor against flash-over, is used in preference to its metal tube equivalent the 6L6. Our tests of a large number of 6L6 metal tubes showed too great a percentage of failure when operated at maximum power due to flash-over between the metal case and electrode leads which are extremely close together.



The Scott Supershield Antenna Coupling Unit Used on Foreign Short Wave Bands.



Three double-purpose 6B8G tubes are used in the R.F. AGC, I.F. AGC, and the last I.F. Amplifier and diode detector, performing in one tube the two functions of amplification and rectification with maximum efficiency. The 6B8G tube is used in preference to its metal equivalent, the 6B8, which has an excessive amount of microphonism, probably due to lack of space to support the tube elements rigidly in the small metal tube envelope. Altogether four double-purpose 6B8G tubes are used in the SCOTT PHILHARMONIC RECEIVER, making it the equivalent of a 34 tube receiver.

In the Volume Range Expander Circuit two 6L7G tubes are used in preference to the metal type 6L7, again because of the greater freedom from microphonics in the glass tube.

In the Converter Circuit a 6L7G tube is used in preference to the 6A7 or other types which have been used up to this time in the Converter Circuit, because of its much greater efficiency on the shorter wave lengths.

The Voltage Regulator Tube has been built especially to our own specifications by one of the largest tube companies, and is the result of a long series of tests and development, and is used to assure a constant plate voltage on the oscillator at all times.

The tubes used are as follows: 6—6J5G's, 4—6L6G's, 4—6B8G's, 3—6L7G's, 3—6K7G's, 2—6H6G's, 2—6U7G's, 2—83-v's, 1—6J7G, 1—6G5, 1—6E5 and 1—Special Voltage Regulator.

The Antenna Circuit

A special Noise-Reducing Supershield Antenna Coupling System developed in the Scott Research Laboratories (Scott Patents Applied For) is incorporated in the Antenna Circuit, which practically eliminates electrical interference or noise picked up on the antenna lead-in on all short wave bands from 12.8 to 76 meters, and at the same time effectively DOUBLES the Sensitivity or distance getting ability of the receiver and antenna combination, by providing a highly efficient transfer of the signal picked up on the flat-top of the antenna to the grid of the first R.F. tube.

1000 Times More Efficient

The Laboratory Curves reproduced show clearly the efficiency of the Scott Supershield Antenna Coupling System as compared with the best of the "noise reducing" antenna systems we have tested. It will be noted that the best other "noise reducing" antenna system has an average discrimination of approximately 10 to 1 in favor of the desired signal against noise or interference picked up on the antenna lead-in, while the new Scott Supershield Antenna Coupling System, measured and tested in exactly the same way, shows that it has an average discrimination of approximately 10,000 to 1 in favor of the desired against noise or interference picked up on the antenna lead-in.

In addition to being approximately 1.000 times more efficient in eliminating electrical interference picked up on the antenna lead-in, the Laboratory Curves prove that it is also more

efficient in transferring to the receiver the signals picked up on the antenna. The curves show the relative gains obtained over the important short wave bands of: (1) The regular antenna. (2) The best "noise reducing" antenna system we have tested, outside of a Scott. (3) The new Scott Supershield Antenna Coupling System used with the Scott Super Antenna. (See Page 13.)

This new Scott development means that reception is now possible on the short wave bands in many locations where short wave reception at present is unsatisfactory or impossible, owing to the large amount of noise and interference picked up on the antenna lead-in.

Band Pass R. F. Amplification

After many months of research a new Scott R.F. development (Scott Patent Applied For) provides the solution to a problem for which radio engineers have been searching for years —a two stage R.F. Amplifier (on the broadcast band) *which is very sharp when extreme Selectivity is desired to bring in weak distant stations on channels adjacent to powerful locals, but which is automatically band-passed to 18 Kc. when High Fidelity reception is desired.*

Up to this time, a two stage R.F. Amplifier in front of the Superheterodyne could easily be designed to provide: (1) Maximum Selectivity, (2) Maximum Fidelity. If the R.F. Amplifier is designed to provide Maximum Selectivity then it automatically cuts side bands and makes true High Fidelity reproduction impossible. If, on the other hand, it is designed to provide Maximum Band-Pass for High Fidelity it will not have any great degree of Selectivity. The result has been that receivers up to this time which used two tuned R.F. stages on the broadcast band have compromised at a half-way point by providing fair Selectivity and fair Fidelity.

However, the special circuit recently developed in our Research Laboratories makes both R.F. stages *highly selective when tuning for distant stations* but *automatically band-passes them when High Fidelity reception is desired,* providing Maximum Selectivity, Greater Sensitivity, and Higher Fidelity with a minimum of noise.

The two tuned R.F. stages are used on all wave bands (except the ultra-high frequency band) using two 6U7G tubes, which are tuned by new type micrometer adjustment air condensers. On the ultra-high frequency band a special low loss, boosted and tuned R.F. circuit (also developed in the Scott Research Laboratories) assures the highest possible Sensitivity and Selectivity on this band.

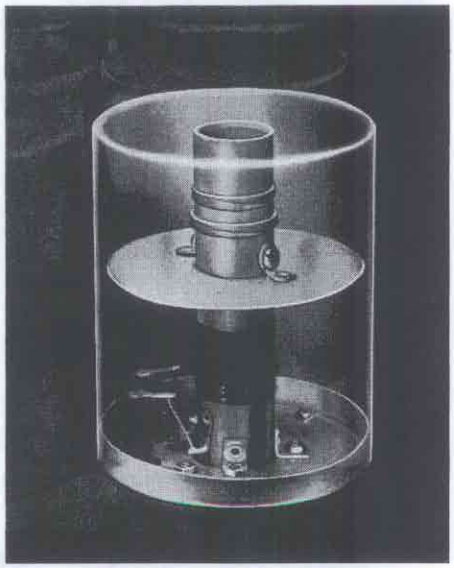
The first tuned circuit resonates and amplifies the desired signal before it reaches the first R.F. tube. The second and third tuned circuits operate in the plate circuits of the 6U7G tubes instead of the grid circuits, as is usual, and provide maximum R.F. gain on the short wave bands. All R.F. coils are wound on special low loss forms, and by using exceptionally large coils and shields, eddy current losses are practically eliminated, and a total gain in circuit efficiency of approximately 3 to 1 is obtained over receivers using the usual size coils and shields.

The curve reproduced shows the Selectivity of the R.F. Amplifier when the Selectivity Control is set for weak distant station reception on a channel adjacent to powerful locals, and the band width passed when the Selectivity Control is set for High Fidelity reception. Note particularly that there is no change in the steep sides of the R.F. Selectivity curve as the band width is changed, as would be the case were the cheaper resistance broadening scheme used. This means that higher fidelity reception, with less background noise is secured than has been attained up to this time with any other known system.

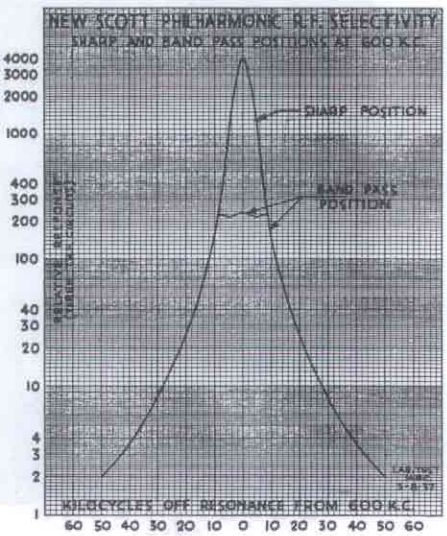
The Oscillator

The new type 6J5G oscillator tube operated in a special electron coupled oscillator circuit (a development of the Scott Research Laboratory) is incorporated in the SCOTT PHILHARMONIC RECEIVER.

It is well known that it has been difficult to sufficiently stabilize the oscillator in a Superheterodyne so that exact calibration of the receiver will be maintained at all times. A very slight oscillator shift, due to any change of line voltage or signal strength variation results in a dial calibration shift which is particularly noticeable on the short waves. This has been completely overcome in the SCOTT PHILHARMONIC RECEIVER thru the use of an auxiliary stabilizing circuit embodying a new type Voltage Regulator Tube, built especially to Scott specifications, which maintains the plate voltage in the oscillator absolutely constant at all times.



The Oscillator Unit.



In addition to preventing calibration shift, this stabilizing circuit has also reduced considerably the distortion ("twisting" of the signal) so commonly noticed on the ordinary radio receiver in the reception of short wave stations during conditions of rapid fading. A special High Frequency boost circuit assures maximum conversion efficiency from the lowest to the highest frequencies, providing exceptional ultra-short wave reception free from the usual hum modulation. Complete thermal isolation from the heat generated in the voltage dividers and the use of micrometer adjustment air condenser trimmers and padders further assures more precise dial calibration and circuit alignment on all ranges.

The Converter Circuit

A specially developed Converter Circuit is incorporated using the 6L7G tube covering the very wide range of frequencies of the SCOTT PHILHARMONIC RECEIVER with "peak" efficiency.

The I. F. Amplifier

Four stages of I.F. Amplification are incorporated in the SCOTT PHILHARMONIC RECEIVER using three 6K7G tubes in the first three stages, and one 6B8G dual purpose tube in the fourth I.F. stage to furnish ample driving power for the Audio Frequency diode to handle high percentage modulation peaks, and assure perfect rectification without distortion.

Both primary and secondary coils in each I.F. transformer are wound with Litzendrath wire, in 4 pi sections, on special low loss bakelite forms, and tuned by air condensers mounted on Steatite insulators. To prevent the usual loss of efficiency due to eddy current losses when small shield cans are used, all I.F. transformers are mounted in shield cans 3½" in diameter. An electrostatic shield is provided between the primary and secondary of each I.F. transformer to eliminate any capacity coupling between these circuits, assuring pure magnetic coupling. Each I.F. stage is so thoroughly shielded, carefully filtered, and effectively by-passed, that every trace of interstage coupling and instability is eliminated, making it possible to utilize fully the high gain in the I.F. amplifying system.

The very advanced design of the I.F. Amplifier, with its perfect stability and high gain, provides a tremendous degree of Usable Sensitivity and is, we believe, the most powerful and highly developed I.F. Amplifier ever incorporated in a Superheterodyne Receiver, and together with the new highly efficient Scott R.F. system, makes possible the reception of signals from weak, distant foreign stations which would be entirely missed on the ordinary radio receiver.

The Selectivity

One of the outstanding features of the SCOTT PHILHARMONIC RECEIVER is the Continuously Variable Band Pass I.F. Selectivity from 2 to 16 Kc., and this combined with our newly developed method of controlling the Selectivity in the R.F. stages, provides a range of Selectivity and Fidelity which, we believe, has never before been attained in any Superheterodyne receiver. As the Selectivity is continuously variable, it can be set to give the maximum degree of Fidelity possible from any station tuned in, with interference eliminated from stations on nearby frequencies.

The Continuously Variable Selectivity System incorporated in the SCOTT PHILHARMONIC RECEIVER has been perfected and developed entirely by the E. H. Scott Radio

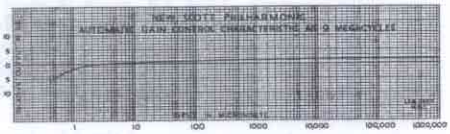
Laboratories over a period of two years. Heretofore, various methods of controlling band pass width or Selectivity on a receiver have been confined entirely to controlling the Selectivity in the I.F. Amplifier, the R.F. Amplifier remaining with a fixed degree of Selectivity. This means that when the receiver is used for High Fidelity reception, the higher frequencies are cut due to the Selectivity of the R.F. stages.

A new feature in connection with the Variable Selectivity Control is the special means to secure maximum Sensitivity when the receiver is in the MAXIMUM SELECTIVE position. This, with its extremely high USABLE SENSITIVITY, makes it the ideal receiver for those who are particularly interested in the reception of very weak, distant stations, as well as for those who are interested primarily in tonal perfection.

A study of the Laboratory I.F. curves will show that in the most selective position, adjacent channel discrimination of approximately 10,000 to 1 is attained, which enables the receiver to reach out and bring in weak, distant stations which ordinarily would be blanketed by interference from powerful nearby stations on adjacent channels. However, when a high degree of Selectivity is not required, the Selectivity can instantly be adjusted so that the receiver will pass, without attenuation, the highest overtones which the best High Fidelity station now on the air is capable of transmitting.

Two Separate Automatic Gain Control Systems

In order to maintain complete and satisfactory control of the very high gain in the SCOTT PHILHARMONIC RECEIVER, two separate and very highly developed Automatic Gain Control Systems are used, the first controlling the R.F. Amplifier, using one 6B8G tube, the second system controlling the I.F. Amplifier using one 6B8G tube.



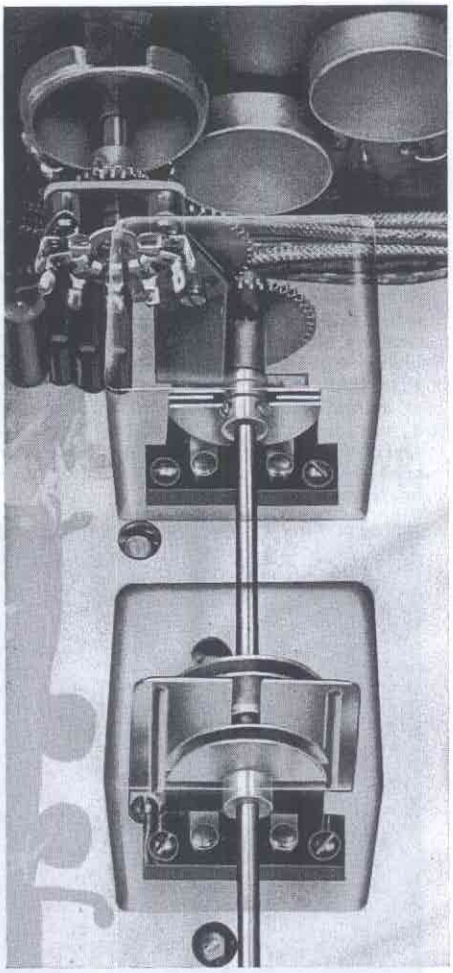
In order to prevent interference from signals of strong stations on channels adjacent to weak, distant stations, and provide maximum gain in the I.F. amplifier under all conditions, a fully delayed R.F. Automatic Gain Control System is used. This part of the system prevents overloading of the R.F. and Converter tubes, and eliminates noise and distortion when tuned to a powerful local station, or to a distant station on a channel adjacent to a local station.

The Automatic Gain Control System operating in the I.F. Amplifier, is a recently perfected development of the Scott Research Laboratories which: (1) At all times assures a constant volume level of the signal being received. (2) Gives an accurate tuning indication when receiver is operated at High Fidelity as well as in the selective position. (3) Automatically decreases the gain if receiver is detuned from center of resonance, thus minimizing tuning "swish," and eliminating microphonics on the short wave bands which are due to amplitude modulation on the side of a steep resonance curve.

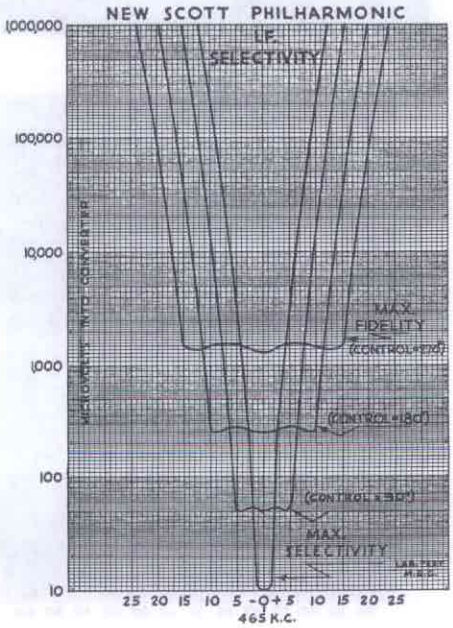
A study of the Automatic Gain Control curve will show clearly the extreme degree of efficiency secured by the two separate Automatic Gain Control Systems incorporated in the SCOTT PHILHARMONIC RECEIVER.

The Sensitivity

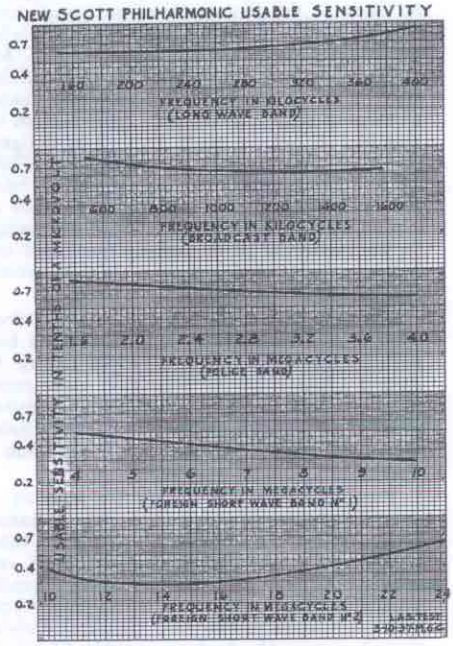
A Sensitivity Control is provided on the front panel which is continuously variable to allow the Sensitivity of the receiver to be set at the exact point which provides the quietest possible reception in all classes of receiving locations, but is unique in that it does not affect or impair the AGC action at any degree of Sensitivity.



Section of Selectivity-Fidelity Control Mechanism.



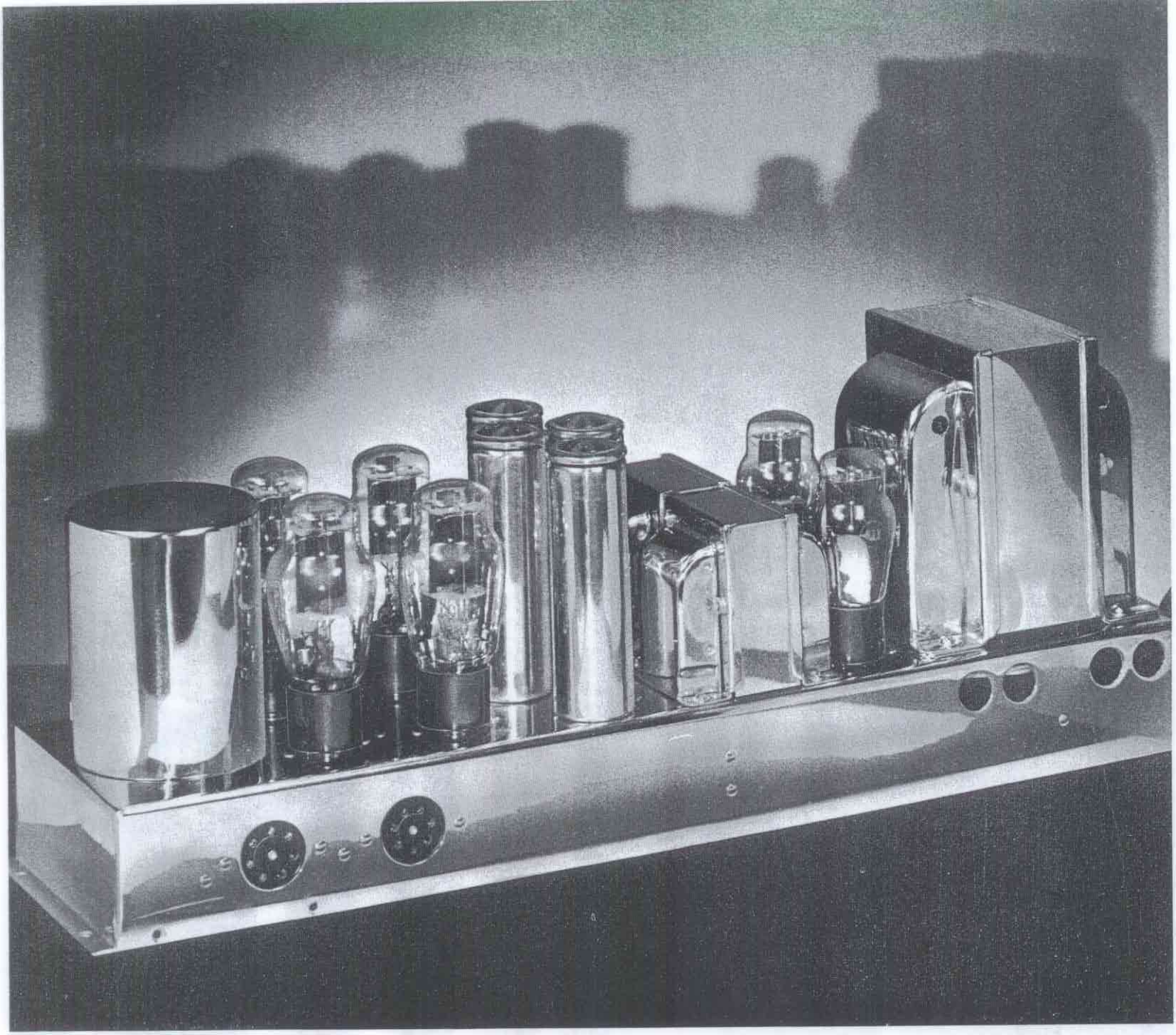
One of the many remarkable features of the new SCOTT PHILHARMONIC RECEIVER is the high degree of extremely USABLE Sensitivity on all wave lengths, especially on the short wave bands where a high degree of Sensitivity is so necessary to bring in the programs from distant foreign stations clearly and with good volume. An examination of the Sensitivity Curve will show that on the foreign short wave bands between 11.5 and 71.5 meters, the Sensitivity at a 1 to 1 noise ratio is approximately .3 of a microvolt. On the Long Wave, Broadcast Band, and Police Band, the Sensitivity is approximately .7 of a microvolt. The noise measurements shown on the Sensitivity Curve were measured with an unmodulated carrier in each case. This extremely high degree of USABLE Sensitivity is just one of the reasons why, we believe, the new SCOTT PHILHARMONIC RECEIVER will, during the coming year, undoubtedly establish many new and sensational records in the reception of weak, low-powered foreign stations, thousands of miles distant.



Silent Tuning Between Stations

If a receiver is to bring in stations from distant parts of the world, it must necessarily have a very high degree of Sensitivity. If it is to hold signals from distant stations at a constant volume level, it must have an extremely efficient Automatic Gain Control System. However, a highly sensitive receiver with an extremely efficient Automatic Gain Control system means that when tuning between stations, the Automatic Gain Control System will open up the full Sensitivity of the receiver, and unless the location is an extremely quiet one free from all forms of electrical interference, a considerable amount of noise will be heard when tuning from one station to another.

In the SCOTT PHILHARMONIC RECEIVER, the Sensitivity, being continuously variable, can be set at any desired point, enabling it to be adjusted to a position where



The Scott *Philharmonic* Power Amplifier

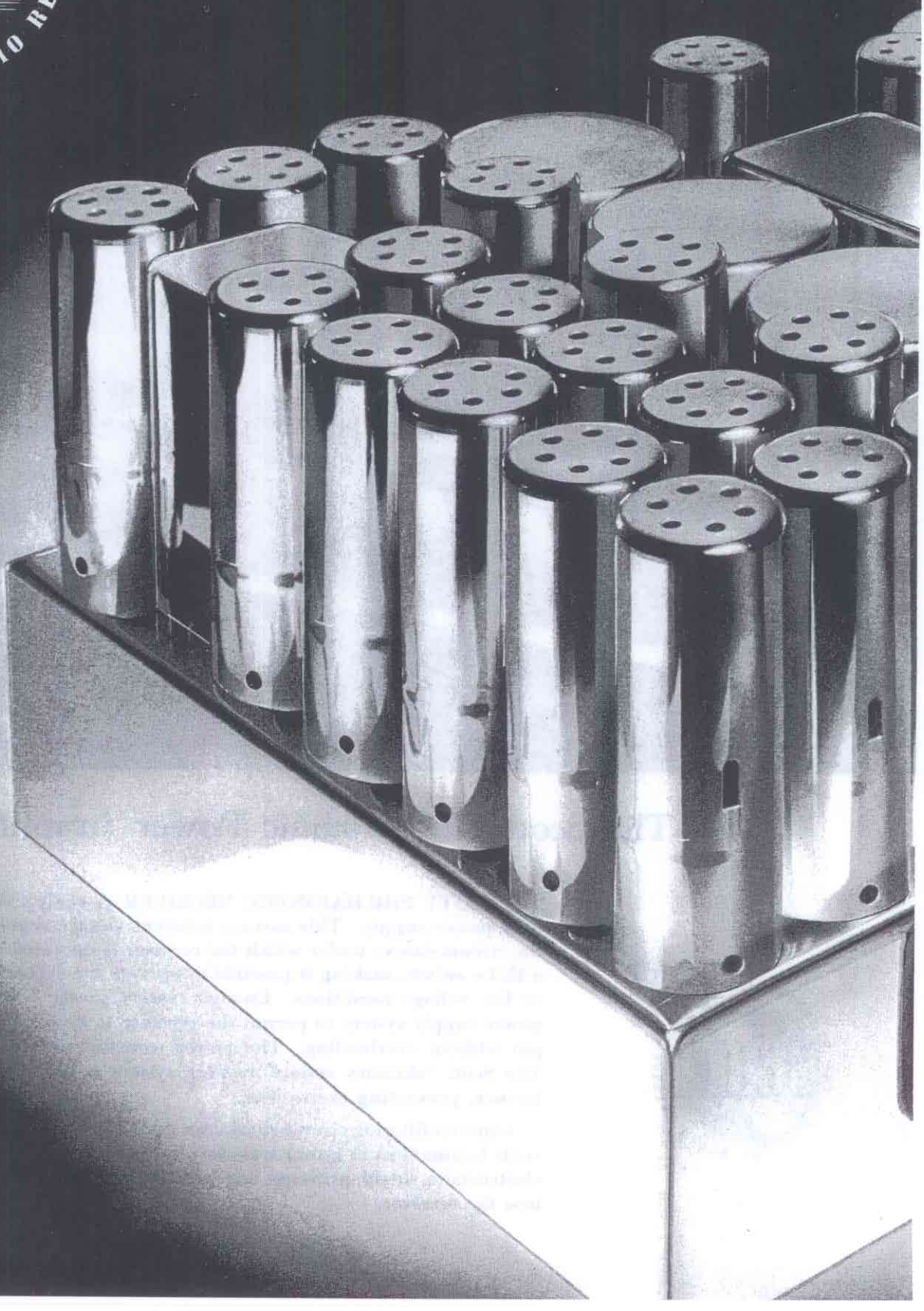
The SCOTT PHILHARMONIC RECEIVER is equipped with a very heavy duty power supply. This assures constant voltage regulation, regardless of the circumstances under which the receiver is operated. It is equipped with a Hi-Lo switch, making it possible to operate the receiver under either high or low voltage conditions. Enough reserve power has been built into the power supply system to permit the receiver to be worked at maximum output without overloading. The power transformer alone weighs 16½ lbs. The Scott "chimney action" cooling system is built into the power transformer, preventing excess heat.

A special filtering circuit eliminates the 120 cycle hum component and prevents laminations in power transformer and filter chokes from buzzing. An electrostatic shield prevents any possibility of line interference being fed into the receiver.

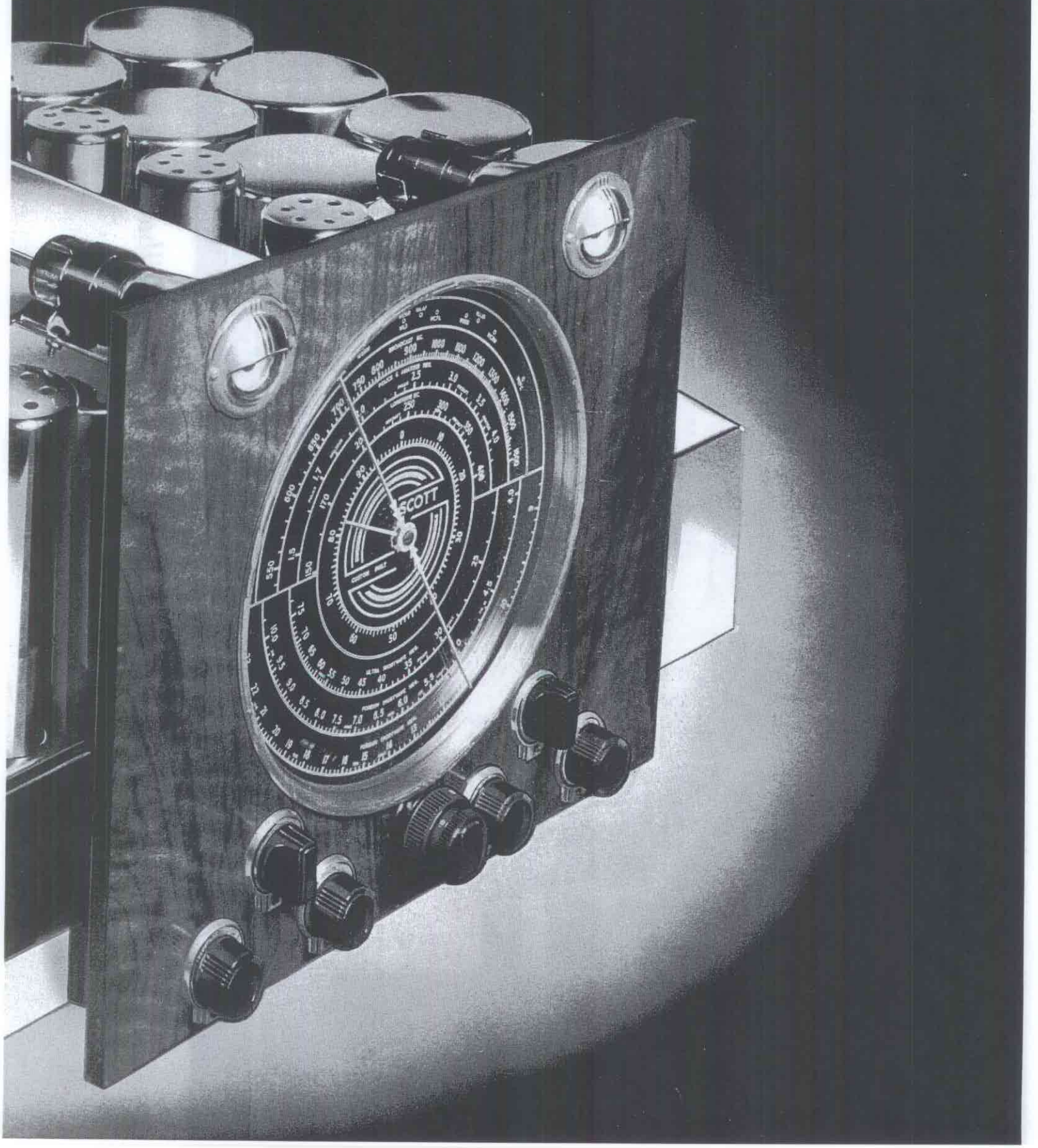
THE STRADIVARIUS OF RADIO RECEIVERS

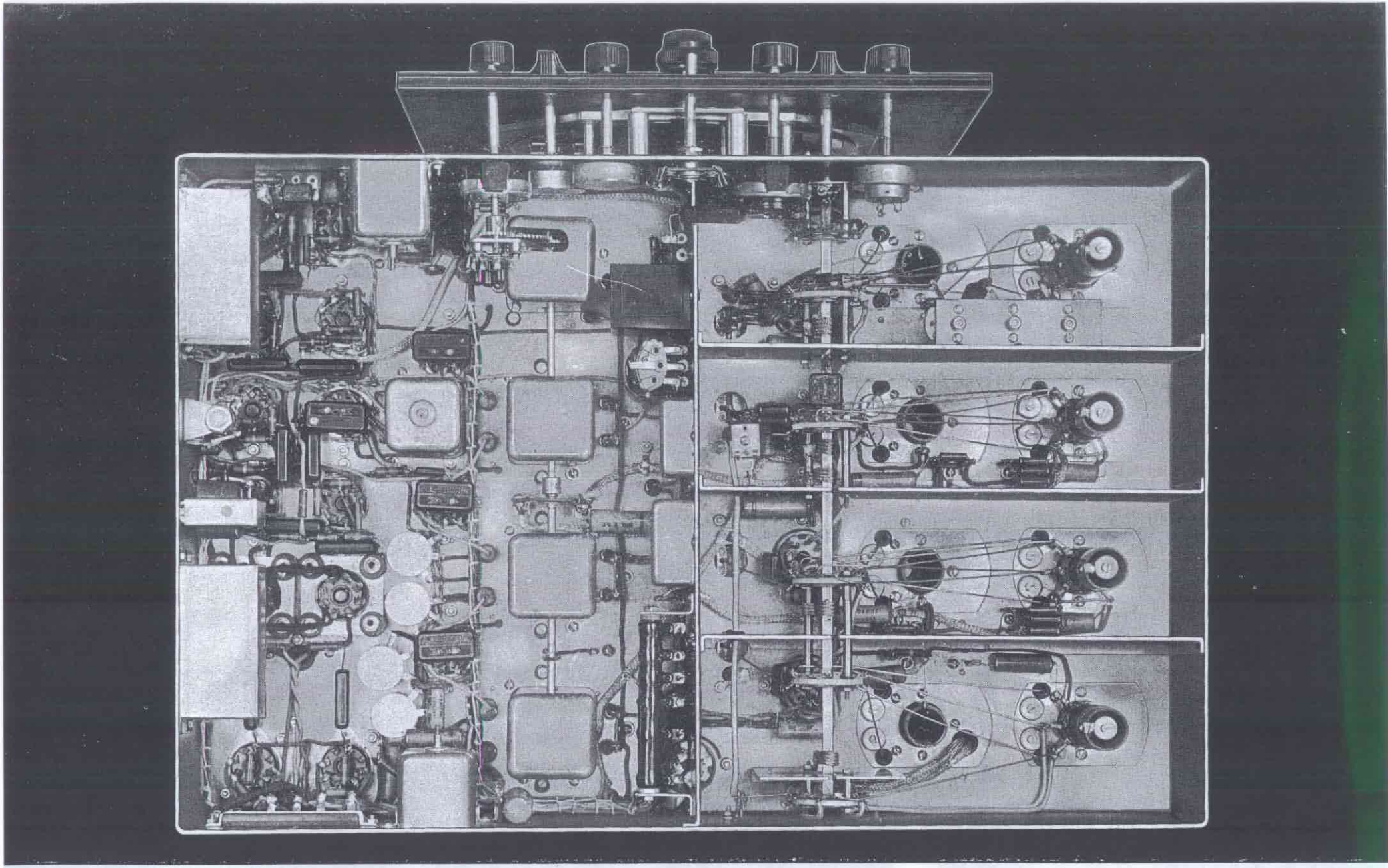
SCOTT

Chassis OF THE



EW SCOTT *Philharmonic*





View under Chassis of New Scott *Philharmonic*

noise caused by electrical interference, etc., picked up on flat top of the antenna is practically eliminated, enabling stations to be tuned in from one end of the dial to the other without noise between stations. This feature means that the SCOTT PHILHARMONIC can always be operated at the maximum Sensitivity in any particular location, to give the smoothest and quietest reception.

The Fidelity

Acoustical engineers have proved by scientific tests that the audible range of the human ear is from 30 to 16,000 cycles or vibrations per second. Obviously, the receiver that is designed to reproduce all tones within these frequency limits will give the most natural reproduction. If a receiver is designed to reproduce less than 16,000 vibrations or cycles per second, it is evident that a large part of the overtones and harmonics which give music and voice their individuality will be completely missing from the reproduction.

At the present time, four special High Fidelity stations are broadcasting on the 1550 Kc. and 1530 Kc. channels on a 20 Kc. band width, while applications for construction-permits are before the Federal Radio Commission for 12 additional High Fidelity stations. These special High Fidelity stations are licensed to transmit on all frequencies up to 16,000 cycles, and the SCOTT PHILHARMONIC RECEIVER has been designed (when used with the special new Scott High Frequency Speakers) to reproduce the full frequency range transmitted by these stations.

Stations on the broadcast band are required by the Federal Radio Commission to limit their transmissions to a maximum of 8,500 cycles in order to cut down interference with stations on adjacent channels. However, if perfect reception is to be obtained from these stations, the frequency response of the receiver must be *flat* to 8,500 cycles, otherwise the higher frequencies or over tones are not heard. When receiving stations with this high degree of Fidelity on the broadcast band, it is necessary to provide means for preventing interfering whistles from the carriers of stations on adjacent channels.

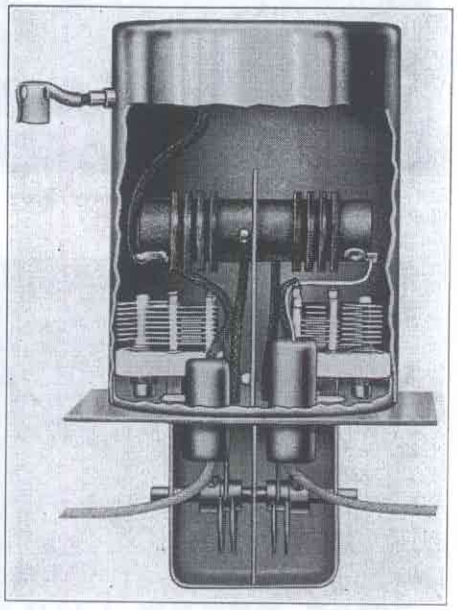
In the SCOTT PHILHARMONIC RECEIVER this is accomplished by incorporating a perfected 10,000 Cycle Attenuator (Scott Patents Applied For), which is a recent development of the Scott Research Laboratories and provides infinite attenuation of the undesired 10,000 cycle adjacent channel whistle or interference, without affecting the frequencies up to 8,500 cycles or over 11,000 cycles by more than 1 db—a degree of perfection, we believe, never before attained in any attenuation net work designed for use in a radio receiver.

The Fidelity is continuously variable by means of the Fidelity-Selectivity Control on the front panel, and a comparison of the Fidelity Curve shown with the Fidelity Curve of any other radio receiver produced up to this time, will, we believe, quickly prove beyond all question the outstanding superiority and finer tone of the SCOTT PHILHARMONIC RECEIVER.

The Bass Control

Another remarkable feature of the SCOTT PHILHARMONIC RECEIVER is the new Bass Bi-Resonator System, another recent development of the Scott Research Laboratories (Scott Patents Applied For). It provides perfect reproduction of the bass or lower frequencies *without in any way affecting or muffling the reproduction of the speaking or singing voice, or any of the higher frequencies.*

Generally, when such a remarkable bass response is obtained in a radio receiver, it is accompanied by considerable AC hum, especially when the Bass Control is set for maximum response. In the new Scott Bass Control System perfect bass reproduction has been secured, *but the hum has been entirely eliminated.* An examination of the curves reproduced will show the extremely sharp dip at 60 cycles which eliminates the 60 cycle AC hum frequently picked up from the AC power line, and also tube hum and 60 cycle line hum frequently fed in from the remote pick-ups of broadcast stations. It will also be noted that our Bass Control System provides practically no boost at frequencies of 120 cycles or higher, which again minimizes the 120 cycle hum frequently heard on a number of stations. A listening test on the new SCOTT PHILHARMONIC RECEIVER will quickly prove the tremendous improvement in bass reproduction this new system provides.



I.F. Transformer Showing Four P1. Litzendrath Coils, Air Tuning Condensers and Part of HI-FI Control.

Tone Balanced Volume Control System

The Tone Balanced Volume Control System built into the SCOTT PHILHARMONIC RECEIVER is much more than a control which raises and lowers the volume of the receiver, for incorporated with it is a tone balancing system which has been designed to follow almost exactly the Fletcher curve, named after Dr. Harvey Fletcher, the well known acoustical engineer, who carried out a large number of scientific tests in the Acoustical Division of the Bell Laboratories to secure this data.

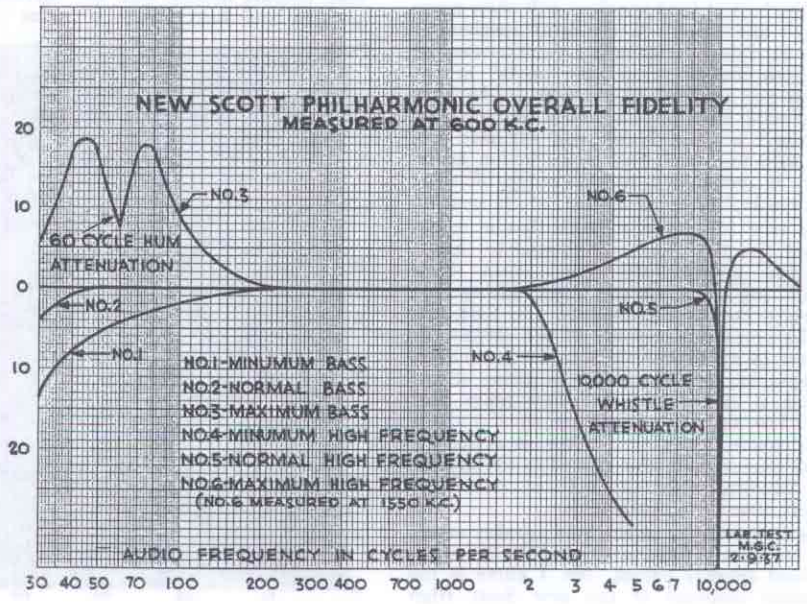
A common fault in most radio receivers is that when the volume is lowered, most of the lower frequencies, or bass notes, and most of the higher frequencies are completely lost, leaving only the notes in the middle register audible. It is well known that the human ear does not respond as well to the very low or the very high tones when heard at low volume, as it does when these tones are reproduced at a higher degree of volume. Some attempts to compensate for this ear deficiency have resulted only in unnatural reproduction, which soon becomes very monotonous.

The Tone Balanced Volume Control System incorporated in the SCOTT PHILHARMONIC RECEIVER has been scientifically designed to follow the response of the ear to the lower and higher frequencies at varying degrees of volume, maintaining at all times a perfect balance between the bass and the brilliant higher frequencies or overtones with the mid frequency range.

The result of this highly developed tone balanced system is that when the volume is turned down even to the lowest levels, the rich, low bass tones, together with the highest overtones, come thru in perfect balance with the tones of the middle register, so allowing music to be as completely and thoroughly enjoyed when listened to at a low volume, as it is when listened to at normal or high volumes.

The Audio Amplifier

Scott Receivers have always been noted for their fine Tone, but in the new SCOTT PHIL-



HARMONIC RECEIVER, several newly developed and perfected features have been incorporated which make it possible to give a still more vivid life-like reproduction at any degree of volume, without the slightest distortion or A.C. hum. Four stages of pure Class "A" Audio Frequency Amplification are used. The first audio stage uses the new type 6J5G tube. The second Audio stage, which operates as a distortionless phase inverter, uses one 6J5G tube. The third audio stage uses two 6J5G tubes as push pull drivers. The fourth, or output stage, uses four 6L6G beam power tubes, with the newly developed Inverse Feed Back System to minimize amplitude and frequency distortion.

40 Watts of Pure Class A Output

The four 6L6G tubes used in parallel push pull in the power output stage, together with a specially designed driver stage, allows 75% of the gain of the 6L6G tubes to be used for distortion cancellation in the tubes themselves, and the last traces of distortion are cut by a factor of 4 to 1, with the result that 40 watts of pure Class "A" output is obtained with less than 1% overall harmonic distortion.

If the most perfect tonal reproduction is to be secured, the Power Amplifier must be capable of handling every loud passage without distortion or fuzziness. We have provided sufficient power so that it is possible to reproduce, should you desire it, even a full symphony orchestra, with the original volume and hear every note or sound as clear and undistorted as you would if you were actually in the auditorium.

One stage of Audio Amplification could have been eliminated if the 6L6G power tubes had been used in the usual manner, but the increased harmonic distortion would have resulted in inferior reproduction and poorer tone quality. The SCOTT PHILHARMONIC RECEIVER has been designed for those who desire the finest and most perfect radio receiving and phonograph reproducing instrument it is possible to produce.

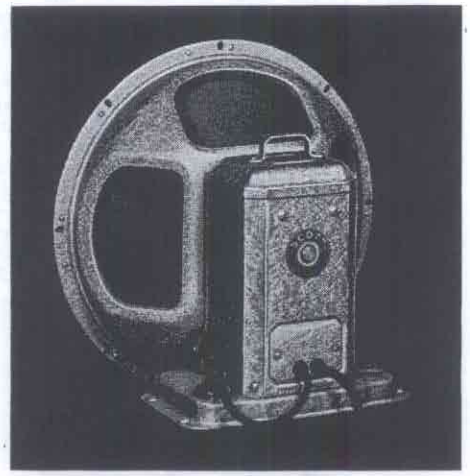
The Loud Speaker Acoustical Response

An examination of the Acoustical Curves of even the best of loud speakers will show many "peaks" and "dips" in the loud speaker response at various frequencies, which means that the tones coming in at the "peaks" of the speaker are accentuated or made louder than they should be, while the tones coming in at the "dips" are not heard with sufficient volume, with the result that reproduction is impaired in proportion to the range of these variations in "peaks" and "dips" of the speaker.

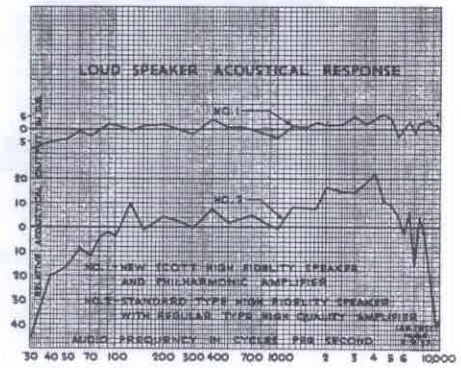
The new Inverse Feed-Back System incorporated in the Scott Philharmonic Audio Amplifier automatically cuts down these "peaks" and brings up the "dips," giving finer and more natural reproduction and flattening out the acoustical response of the speaker by a factor of approximately 2 to 1. In addition to improving the acoustical response of the speaker, it extends the frequency range both at the low and high frequency ends, and the objectionable "hang over" often so noticeable in loud bass reproduction caused by the speaker cone vibrating after the note or sound has actually ceased, is eliminated.

The improvement in the loud speaker acoustical response is illustrated graphically in the two loud speaker curves. No. 1 curve is the acoustical response of the new Scott High Fidelity speaker connected to the Philharmonic Amplifier, and shows clearly the tremendous improvement over that obtained from the standard High Fidelity speaker connected to the regular type of high quality amplifier.

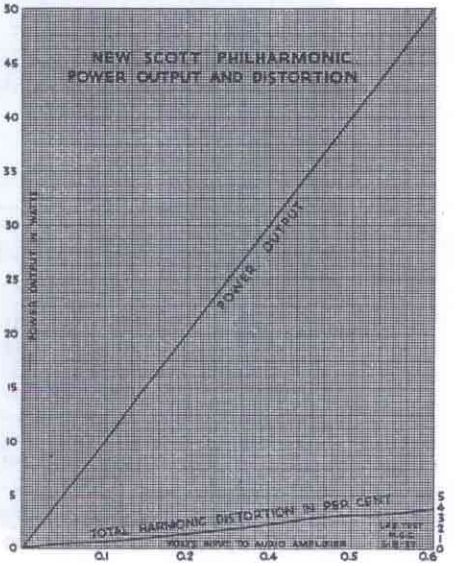
The new SCOTT High Fidelity Speaker has



The Scott High Fidelity Heavy Duty Speaker.



been especially designed for High Fidelity reproduction and heavy duty performance, and incorporates the very latest developments in loud speaker design, with 15" curvilinear diaphragm and heavy duty 2" voice coil. Its



frequency response covers perfectly the frequency range on all broadcast stations except the special "High Fidelity" stations. To cover the range of these special stations, two special High Frequency speakers have been developed which reproduce the higher frequencies or overtones from 7,000 to 16,000 cycles, and can be supplied as optional equipment.

Perfected Volume Range Expansion System

When you listen to a symphony broadcast or any program in which there is a fairly wide dynamic volume range, it is seldom heard *exactly* as you would hear it if you were listening to the orchestra in the Auditorium or broadcast studio, for the softer passages are made louder, and the heavy forte passages are reduced in volume. This is because a monitoring engineer at the transmitting station control board makes the very soft passages louder, so that you may hear them without objectionable tube hiss or line noise, while the very loud passages he reduces in volume, to avoid overloading the transmitter amplifier. The result is that while you do not realize it, the majority of programs you listen to over the air are compressed into a much smaller dynamic volume range than when actually heard in the studio or Auditorium.

The recording engineer at the phonograph recording studio performs a similar duty to that of the monitoring engineer in the broadcasting station, by making the very soft passages louder than they are actually played, so that the record needle scratch will not be objectionable, while the loud passages he reduces in volume to avoid overcutting the record grooves.

The full dynamic volume range can be restored to programs heard over the air or from phonograph records by the use of either (1) a Single Channel Expander or (2) a Push Pull Expander. While the Single Channel Expander restores the dynamic volume range, and costs considerably less to incorporate in a receiver, it introduces considerable distortion into the reproduction, especially in symphonic selections.

In the SCOTT PHILHARMONIC RECEIVER a special push pull circuit developed in the Scott Research Laboratories is used in the Program Volume Range Expansion system, and provides a range of 15 db which enables the dynamic volume cut by the recording or monitoring engineer to be restored to the original volume range at which the program was played, giving distortionless Program Volume Range Expansion, with continuously variable control on both phonograph reproduction and radio reception. The Program Volume Range Expander circuit uses one 6J5G tube, one 6H6G tube, and two 6L7G tubes in push pull.

Tuning and Program Volume Range Expander Indicators

An amplifying type 6G5 cathode ray tube is used to indicate when a station (from the weakest to the strongest) is tuned exactly at resonance, and an amplifying type 6E5 cathode ray tube is used to indicate exactly the amount of expansion being added to either record or phonograph reproduction.

Phonograph Reproduction

Connections are provided to attach a phonograph pick-up to the SCOTT PHILHARMONIC RECEIVER, and a switch on the front panel allows the receiver to be instantly ad-

justed, either for reception of programs off the air, or phonograph record reproduction. All tone adjustments are available on phonograph reproduction as well as programs received off the air. This means that if the record is lacking, to your ear, in either the low or bass tones, or the higher overtones, these frequencies can be adjusted until the reproduction is exactly as you desire to hear it.

Phono Record Surface Noise Suppressed

Today operas, symphonies and music of all kinds are now being recorded on the new High Fidelity records, and literally bring to the home the finest music and musical talent of the world.

However, the presence of needle scratch when listening to phonograph records has always been one of the great objections raised by musicians, or those interested in good music, to phonograph record reproduction, and various methods have been tried to eliminate or reduce it. One very common method is to use a type of phonograph pick-up the response of which is limited to the reproduction of frequencies not exceeding 4,000 cycles. If a high quality, High Fidelity phonograph pick-up is used, the higher frequencies or overtones are reproduced, *but the record scratch also increases.* Many musicians, while objecting very much to the scratch, refuse to allow it to be eliminated at the expense of the higher frequencies, being willing to tolerate the scratch so that they can hear the complete range of higher tones which the new High Fidelity records are capable of giving them. Most people, however, prefer to eliminate the scratch even at the expense of the higher frequencies, and the usual method has been to cut the higher frequencies until the scratch is not heard. Consequently, all of the life is taken out of the reproduction, making it sound muffled and unnatural.

A recent development of the Scott Research Laboratories (Scott Patents Applied For) has at last made possible the full enjoyment of phonograph reproduction, for it automatically eliminates the scratch on the record at the lower volume levels where it is so objectionable, *but does not affect the full reproduction of the higher frequencies at normal or high volume.*

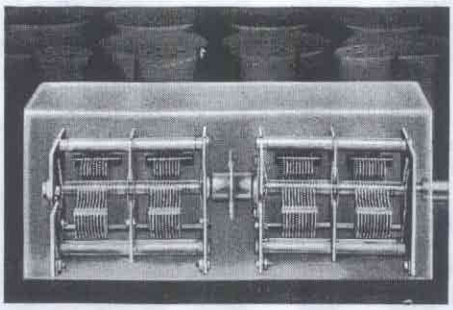
The result of this very outstanding development in phonograph record reproduction is that music or voice can now be listened to with all of the life and vividness of the original, and a degree of pleasure that simply cannot be realized until one has listened to an actual demonstration of this amazing and very remarkable development.

Headphone Operation

A special jack is provided by which a pair of headphones can be plugged in and a program listened to thru headphones only, cutting out the speaker, or if desired, both speaker and phones can be used simultaneously. The headphone connection can also be adapted for use with a special Bone Conduction Hearing Aid which allows those afflicted with most forms of deafness to hear and enjoy programs over the air, or phonograph records, equally as well as those who possess their normal hearing.

Microphone Operation

In the SCOTT PHILHARMONIC RECEIVER connections are provided to which a microphone or pre-amplifier can be instantly attached, allowing the receiver to be used, if desired, as a very fine Public Address System, or by placing the microphone in one room, and the receiver in another, entertainment can be staged in the home, which will come thru the receiver with ever higher Fidelity than you will hear the same selections coming from a broadcasting station. The reason for this is that your program will not be subjected to the line or frequency limitations of the broadcasting station.



The Two Units of the Four Gang Special Low Loss Variable Condenser.

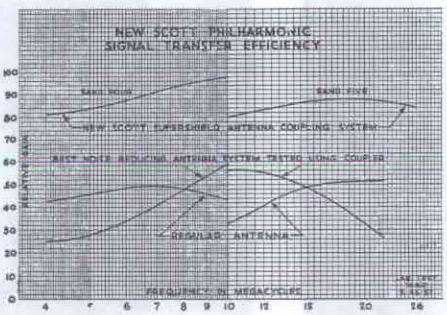
Recording

The High Fidelity of the SCOTT PHILHARMONIC RECEIVER makes it ideal for the recording of programs directly off the air, or of recording thru the microphone. This feature is especially valuable to students of voice, or to those who desire to make recordings of the various programs they hear over the air. Music students find the recorder valuable in making recordings of the progress they are making in their studies.

Prices of complete recording equipment for use in connection with the SCOTT PHILHARMONIC RECEIVER will gladly be supplied on request.

The Power Supply

The SCOTT PHILHARMONIC RECEIVER is equipped with a very heavy duty power supply which assures constant voltage regulation, regardless of the circumstances under which the receiver is operated. It is equipped with a Hi-Lo switch, making it possible to operate the receiver under either high or low voltage conditions. Enough reserve power has been built into the power supply system to permit the receiver to be worked at maximum output without overloading. The power transformer alone weighs 16½ lbs. and has been designed in such a way that only four secondary windings are necessary, making it possible to use heavier wire and thicker insulation between windings, insuring practically indefinite life. The Scott "chimney action" cooling system is built into the power transformer and causes a constant circulation of air around the windings of the transformer, preventing excess heat.



A special filtering circuit using two heavy duty time delay 83-v rectifier tubes eliminates the 120 cycle hum component and prevents laminations in power transformer and filter chokes from buzzing. An electrostatic shield is used between the primary and secondary windings of the power transformer to prevent any possibility of line interference being fed into the receiver.

Parts Used

Air condensers are used thruout in all tuned circuits. All coupling condensers are hermetically sealed in molded bakelite to provide protection from temperature and humidity variations. A new type electrolytic filter condenser, chromium plated inside and out, provides many times the useful life of the ordinary type electrolytic condensers used in most radio receivers. A special low loss, wide spaced, four gang Tuning Condenser is used in two separate units to isolate high frequency currents and provide stable gain at high frequencies. All high frequency circuits are insulated either with high frequency low loss Steatite, or special low loss high frequency bakelite, including Wave Change Switch and High Frequency tube sockets, coil forms, etc. All High Frequency circuits are thoroughly isolated, independently shielded, by-passed and filtered—Special low loss, eight layer celanese insulation used on all shielded leads in high frequency circuits—Metalized, hermetically sealed, molded bakelite resistors used thruout—Plate voltage and bias dividers designed to dissipate heat externally to still further reduce possibility of frequency drift thru excessive heat changing characteristics of tuning coils and condensers—Heavy copper tinned braid used for all high frequency ground circuits—Extremely heavy-duty 16½ lb. power transformer—Heavy duty chokes used in special circuit which prevent any possibility of laminations buzzing and causing hum—Chassis and amplifier base 14 gauge steel, heavily chromium plated.

Five Year Guarantee

Every part of the SCOTT PHILHARMONIC RECEIVER is fully guaranteed (except tubes) for FIVE YEARS against defects in either material or workmanship, and will be replaced free of charge, when returned to the laboratory, provided chassis seals are not broken or receiver tampered with.

Visitors Always Welcome at Scott Laboratories

Scott Receivers are custom built to order, in very limited numbers, in one of the world's most modern and completely equipped radio laboratories, by skilled technicians trained for many years in precision work by Scott Laboratory engineers.

It is only when you can actually see the fine quality of parts, the precision workmanship, and the expert testing and checking of every receiver, that you are able to realize the tremendous difference in quality between an ordinary receiver and a Custom Built Scott Receiver. For this reason, we are always glad to welcome visitors at the Laboratory and take them through, where they have an opportunity to see exactly how a Scott Receiver is built and tested. It is an experience you will thoroughly enjoy if you are interested in fine things.

The Laureate Grande

A strikingly beautiful Moderne console in beautiful rich Laurel wood and Walnut, with Catelin door handles.

•

The Waverly Grande

A delightful cabinet styled in authentic Swedish Moderne, of selected and Figured American Walnut.

The Ravinia Grande

A spirited interpretation of ultra-modern console design—built in beautifully Figured Oriental Walnut.

•

The Chippendale

A distinctive creation of the Chippendale period in Swirl Mahogany with hand carved legs and grille.

The Gothic Grande

Subdued richness characterizes the classic Gothic in selected American Walnut with Linen-Fold panels.

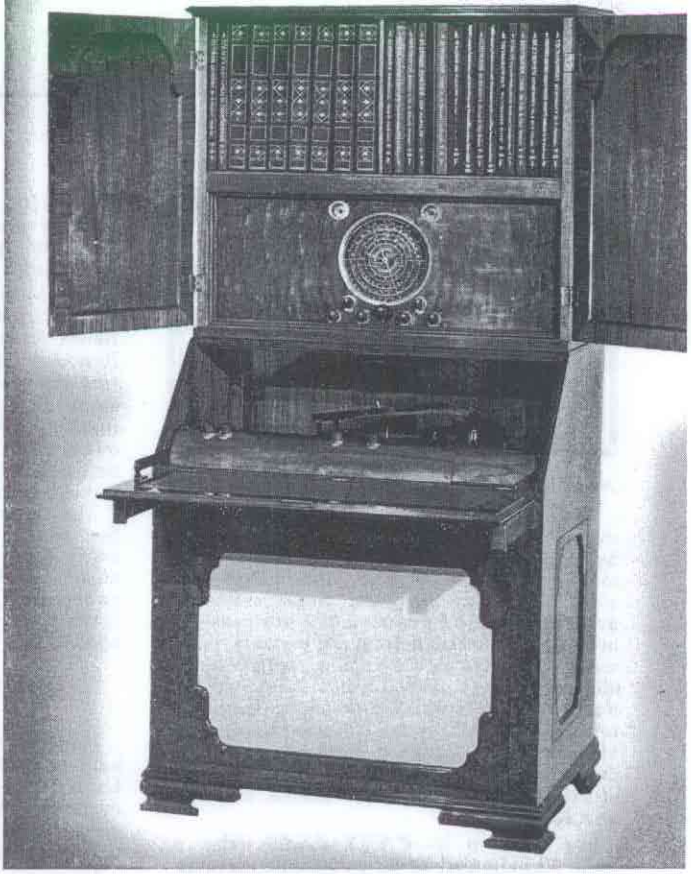
•

The Warrington

The graceful lines make this one of our most exquisite consoles in rotary cut and striped Walnut Veneer.

THE STRADIVARIUS OF RADIO RECEIVERS

SCOTT



The Secretaire

A Console designed to add distinction to the finest home—built in selected Butt and Figured Walnut.

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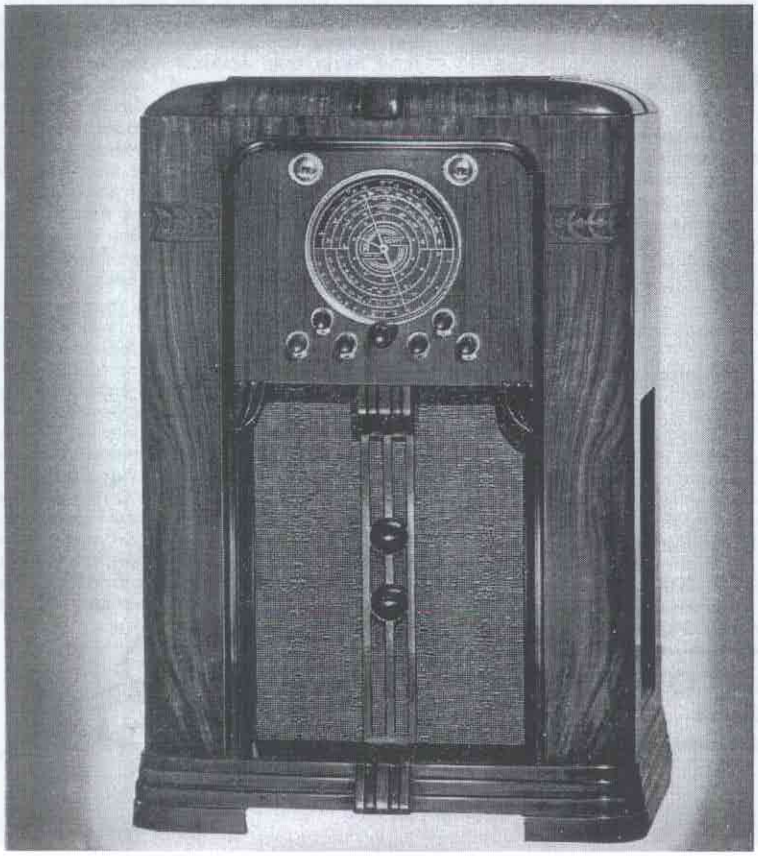
The Roslyn Grande

A graceful design in Chinese Moderne—front panels Crotch Honduras Mahogany, trimmed with Brazilian Rosewood.



The Scott News

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E. H. Scott Radio Laboratories
4450 Ravenswood Avenue
Chicago

E. H. Scott, *Editor*

Another Milestone in Scott History

The announcement of "new models" is something the public has come to expect every year by most manufacturers in the radio and automobile industries. However, this does not always mean that the "new model" radio or automobile has incorporated in it features that are radically different from the previous year's model. In automobiles, a "new model" generally means that some talented designer has worked out some striking new lines for radiator or body, while in radio it has meant, more often than not, simply a new console or dial design, with little improvement in the heart of the instrument itself—the chassis, amplifier and speaker.

The question is—*WHEN* should either a radio manufacturer or an automobile manufacturer bring out a new model? I believe the only logical answer to that question is—*when some new discovery is made, or a new design developed that makes the performance and efficiency very much superior to that incorporated in the model the manufacturer is currently selling.* Then, and then only, should a new model be introduced.

Scott Receivers Continuously Improved—But No Yearly Models

Scott Receivers have always been recognized as being of very advanced design, and the principal reason for this is that when new discoveries are made in our Research Laboratories, or ways are found for improving the performance or efficiency of my current receiver, *these refinements, if possible, are immediately incorporated into the design of the receiver.* This is only practical because Scott Receivers are custom built to order only, in limited numbers, so that I can supervise and check the construction of every one.

However, when some really worthwhile new discovery is made, or a new efficient circuit is developed which requires more tubes, coils or condensers, and the current model receiver has to be entirely redesigned to incorporate these new developments, *then and then only do I bring out a new model.*

Large Number of New Discoveries of Scott Research Laboratories Makes New Model Necessary

Intensive research is continuously carried on in my Research Laboratories. It was possible to make available to owners of the 23-Tube SCOTT FULL RANGE HIGH FIDELITY RECEIVER a large number of these developments, and in this respect the history of the Scott Radio Laboratories is unique. When an improvement is discovered, if it is at all possible to incorporate it in the current, or even in previous models, Scott Owners are given the opportunity to have these improvements incorporated in the sets they own.

I could point out a number of examples of this policy such as the Scott Built-In Volume Range Expander, first perfected in the Scott Research Laboratories early in 1935, for the very marvelous Quaranta model. However, instead of announcing a "new model" with Built-In Volume Range Expansion, every owner of the 23-tube set was given the opportunity of having this improvement incorporated in his receiver as an accessory.

The Scott Supershield Antenna Coupling System was another development which could easily have been made an excuse for a new model, yet this was not done, and again Scott owners were given the privilege of having this important development incorporated in their receivers.

Why New Model Is Being Introduced

However, a number of new developments have been perfected recently in my Research Laboratories which require additional tubes to perform their functions, and it has been necessary to develop a completely new design to incorporate all of these.

For many years a number of receivers have used two tuned stages of R.F. ahead of the first detector, but the incorporation of this extra tuned stage has meant a sacrifice either of Selectivity or Sensitivity. If an extra tuned stage is designed to provide a high degree of Selectivity, then automatically side bands will be cut, and the Fidelity of the receiver will be seriously impaired. On the other hand, if the two R.F. stages are band-passed, the Fidelity will be good, but the Selectivity will be impaired. In the SCOTT PHILHARMONIC a new development of our Research Laboratories has enabled us to instantly make two R.F. stages either (1) extremely Selective for tuning in distant stations, or (2) band-passed for High Fidelity reproduction. On account of the additional coils and tubes necessary it was impossible to incorporate it in the 23-tube model.

Greater Wave Length Range

During recent months very rapid progress has been made in television, and while I do not believe it will "arrive" this year, still it has possibilities. The Scott Receiver is not a "one year model." The vast majority of purchasers plan on keeping their receivers four or five years, therefore, I believe that the time has arrived when a receiver that is being purchased now for use during the next four or five years, should have provision for tuning in television sound broadcasts. These broadcasts will be transmitted on frequencies around 40 megacycles, so accordingly I have increased the wave length coverage to enable these broadcasts to be tuned on a Scott when television *does* arrive. But, instead of simply extending the range down to 40 megacycles, it has been extended to 80 megacycles or 3.75 meters, which will also allow the amateur 5 and 10 meters transmissions to be tuned in. In addition to increasing the ultra-high frequency range I have also extended the low frequency range to 2000 meters, enabling weather reports and aviation stations to be tuned in. To do this required extending the number of wave bands from four to six. The incorporation of these two extra bands is still another reason why it has been necessary to bring out a completely new model.

Scratch Suppression on Phonograph Records

The new high fidelity records have practically revolutionized phonograph reproduction. But those records very often have a high scratch level which destroys a great deal of the listening pleasure. In the past the only way to eliminate or reduce the scratch has been to use a pick-up that would not reproduce the higher frequencies, or to use a tone control which would enable the high frequencies or overtones to be cut. This, however, destroyed the beauty and life of the reproduction. A recent development of our Research Laboratories has enabled us to practically eliminate scratch from phonograph records at low volumes, *without sacrificing the higher frequencies or overtones at normal volumes.* This new development requires another tube and various parts, which again could not be incorporated in our 23-tube model.

The Scott Philharmonic Is a Completely New Radio

A study of the many technical features given in this issue of the News will conclusively prove that the Scott Philharmonic is a "new model" in every sense of the word. I do not believe that this new instrument represents the last word that will be written in radio receiver design, but I do most sincerely believe that its design is so far advanced over anything in the radio world today, that it will be several years before the owner of a Scott Philharmonic will find it necessary to replace it.

Many Orders Already Received

During the many years I have been building fine radio receivers I have had many expressions of confidence in the ability of my laboratory to produce an outstanding instrument, but during the past ten days I have had a most surprising demonstration of that confidence. A large number of people who in some mysterious way got wind of the fact that there was soon to be a new Scott, came to the Laboratories and although they were unable to see or hear it, or know what the cost was going to be, insisted upon placing their order at once in order to be one of the first to receive the new Scott. As a consequence I now have a sizeable number of orders on hand even before the Philharmonic has been announced.

In closing I want you to remember that Scott Receivers are built in very limited numbers only, and undoubtedly this issue of the News will bring a large number of orders to the Laboratories, which will be filled strictly in rotation of their receipt. If you are considering the purchase of what I can assure you is really a very remarkable instrument, I would urge you to place your order at once, before the Philharmonic is announced in the various radio magazines and national publications some time next month. In this way you will be assured of being among the first to receive delivery of a radio receiver that will thrill and delight the heart of every radio enthusiast and lover of good music.