VOL.XIV NO.1 JANUARY 1985 SECOND CLASS POSTAGE PAID AT DALLAS, TEXAS PUBLISHED BY JIM CRANSHAW, NSFSL MONTHLY EXCEPT JULY AND AUGUST PRICE \$10.00 YEARLY SINGLE ISSUE \$1.50

POSTAL IDENTIFICATION STATEMENT, PAGE 2

HAPPY NEW YEAR

PLEASE ENCOURAGE OTHERS TO SUBSCRIBE TO THE HORN SPEAKER.

CHARLES R. LEUTZ.

1924

REGENERATIVE RECEIVERS

THE HORN SP

The action of Regenerative Amplification, commonly known as Regeneration was first given considerable publicity by Armstrong although several other American and Foreign inventors claim that they are the original discoverers of this phenomena. The patents issued were sold to the Westinghouse Co. by Armstrong and patents licenses were given to the Radio Corporation, General Electric Co. and others.

An advanced three-circuit regenerative receiver is shown in Figures 1 and 2, front and rear views respectively. Regenerative action consists of feeding a signal into a three element vacuum tube, where the signal is amplified, this amplified signal is then fed back into the grid of the same tube and further regenerative amplification takes place.

In designing a complete receiver to accomplish this, certain important factors have to be taken into consideration to obtain maximum regeneration with a high degree of selectivity. Inasmuch as a vacuum detector tube is a potentially operated device, the circuits should be so designed to deliver maximum voltage to the detector grid. Maximum voltage is obtained by using a small percentage of condenser and a large percentage inductance in the grid tuning circuit. For example a certain inductance coil in parallel to a .001 MF V.ariable Condenser will cover a wavelength range of from 200 to 600 meters. If the condenser was four times as large, or the inductance was four times as large, or if both the condenser and inductance were each twice as large, the wavelength range would be doubled, viz. 400 to 1,200 meters. However, to obtain good results in a grid circuit at wavelengths of 200 to 600 meters a .001 MF condenser is too large and a .00025 MF Maximum is much more satisfactory, with the given coil mentioned above. the wavelength range would be one-half as much or 100 to 300 meters, accordingly the inductance must be increased four times to return to the desired wavelength 200 to 600 meters. In actual results the signal is more than four times greater with the larger inductance arrived at above.

It is then apparent that such a circuit would be most efficient at the low end of the condenser scale and the efficiency would fall off for the longer wavelengths as the amount of condenser used is increased, and this is true. To compensate for this, more than one inductance can be used and by switching in a second inductance in series with the first, the low end of the condenser scale can be used for tuning the longer wave-



lengths. That is the single inductance would be used for wavelengths of 200 to 400 meters and the two inductances together for 300 to 600 meters.

The next important item is the efficiency of the inductance itself. Every inductance, in addition to being an inductance is a resistance, that





WHEN USING A SHIEL DED PAWEL THE FRAME OF THE JACK PAUST BE INSULATED FROM THE SHIELDING.



-LOOSEN THIS SCREW AND ADJUST SPRINGS UNTIL THEY FIT PLUG AS SHOWN, THEN TIGHTEN UP SCREW. WHEN THE PLUG IS OUT, ERE SHOULD BE AN LECTRICAL CIRCUIT ETWEEN SPRINGS" I C"Z DALSO BETWEEN IND HLSO DETWEEN SPRINGS "3 AND" 4. THERE SHOULD NOT BE ANY CONTRET BETWEEN RNY OF THE SPRINGS AND THE FRAME OF THE JACK.

THE HORN SPEAKER, Box 53012, Dallas, Texas 75253-0012 January 1985

********* is it has a value of high frequency resistance and this value varies with frequency. Two coils each having the same value of inductance may have widely different values of resistance at the same frequency. The poor inductance of high resistance would probably be layer wound on moisture-laden cardboard tubing, covered with shellac or partially conducting varnish. The efficient low resistance coil would most likely be the one wound in a single layer, or bank wound, on an improved insulating material such as Formica, the moisture having been thoroughly baked out in a vacuum and then thoroughly impregnated with a "low capacity" electrical insulating varnish such as "Sterling" or "Ajax." The use of Litzendraht wire will greatly reduce the high frequency resistance of an inductance, particularly at certain frequency ranges. A suitable Litzendraht for all round work consists of 10 number 38 B&S Gauge copper wires, each insulated with enamel, and the entire ten wires grouped in a bunch and insulated with a Silk covering. This wire in this size and other standard sizes is readily obtainable on the market.

The theory of the use of Litzendraht lies in the amount of conducting surface available. High frequency currents travel on the surface. For example a solid copper wire $\frac{1}{4}$ " in diameter would not afford any less surface resistance than a $\frac{1}{4}$ " copper tube only a few thousandths of an inch in wall thickness. In a like manner the ten small wires, each insulated from the other, afford much more conducting surface, a single solid wire having a diameter equal to the ten wires combined.

The value of high frequency resistance increases rapidly with an increase in distributed capacity of an inductance. By distributed capacity, is meant the inherent capacity of the inductance itself. By the use of single layer coils the proper insulating varnish and low loss supporting forms, the distributed capacity can be kept low. The ideal supporting form is air and this can be accomplished by making special self-supporting windings. The next best support among others is Formica Tubing of thin wall thickness. The above mentioned considerations become more important if they are to be used for short wave reception. A coil which may have a resistance of 1 ohm at 10,000 meters may have a resistance of several hundred ohms at 100 meters. Heavy metal casting, magnetic materials and large bodies of moulded insulating material should be excluded from the field of the coils. The shape of a coil is a factor in the maximum amount of indüctance obtainable with a given length of wire. For all round purposes the round coil is the best in this respect.

The Variable Condensers used in tuning circuits should be of the highest possible efficiency. The General Radio Co. condensers illustrated throughout this book were the first real low loss condensers offered to the experimental market and have been widely copied with varying degrees of success. Their type 247 condenser has all the stator plates soldered together to prevent points of resistance between plates. The rotor units are soldered in a like manner. The end supporting plates are moulded from a special low loss material. The bearings are





and the later and the

constant friction, noiseless and positive contact. This is undoubtedly the best fair priced variable condenser on the market. Their type 239 condenser is available where it is desired to obtain still further efficiency at an increased expense. This condenser has metal end plates directly connected to the rotor shaft. The stator plates are insulated from the end plates by insulating bars of hard rubber or porcelain which are the best two materials for this purpose. Both the 247 and 239 condensers have special shaped plates which give a straight line wavelength variation with respect to angular movement of the rotor plates.

Condensers with metal end plates, and having the rotor shaft insulated with bushings, are particularly inefficient. Condensers having semi-circular rotor plates are practically obsolete as this form of plate crowds the wavelength range at the lower end of the dial scale. Condensers built with the vernier plates as an integral part are usually inefficient due to the excess of supporting parts. The use of a geared

POSTAL IDENTIFICATION STATEMENT— THE HORN SPEAKER (USPS 956120) is published monthly, except July and August by Jim Cranshaw, 9820 Silver Meadow Drive, Dallas, Texas 75217. Subscription rates are \$10.00 yearly and \$17.00 for two years. Second class postage paid at Dallas, Texas. POSTMASTER: Please send addrss changes to; THE HORN SPEAKER, P. O. Box 53012, Dallas, TX 75253.

vernier is highly recommended as this does not distract from the efficiency of the condenser in any way. The use of a separate small condenser of 'approved construction as a vernier is also recommended. Fig. 3 is a type 247 .00025 MF Maximum and Fig. 4 is a .0005 MF Maximum variable condenser. Fig. 5 and 6 show the type 239 Variable Condenser equipped with geared vernier. The excellent design and construction of these instruments are readily apparent.

Referring to the wiring diagram of the Type 21 Receiver shown in Fig. 7. This is the well known Paragon Circuit as designed originally by Mr. Godley and subsequently widely copied by many manufacturers.

L is the primary Load inductance and L1 the primary Coupling inductance. This circuit consisting of the antenna, primary load, primary coupling and ground is tuned to the desired wavelength by varying the inductance in coils L and L1. Coils L1 and L2 are in inductive relation to each other and the relation is also capable of being varied, at 0 degrees on the dial the coils are at right angles to each other and at 100 degrees on the scale, the coils are concentric. The position of this coupler and the amount of inductance in use in the primary and secondary circuit determines the coefficient of coupling between these two circuits.

Coils L2, L3 and Condenser C are used to tune the secondary or grid circuit in resonance to the primary circuit. For example if the Primary circuit was tuned to 312 meters and the secondary circuit was tuned to give maximum response to that same wavelength, it would be said that the secondary circuit was in resonance to the primary circuit. When the secondary is in resonance the maximum amount of signal energy is transferred to the secondary circuit. However when the two circuits are tuned to 312 meters, it may be found that interference is







Fig. 9

Front and rear view Type 39 Detector and two-stage Audio Amplifier. The variable Condenser shown may be connected as a variable Grid Condenser or as a vernier on the main tuning condenser.

present from a neighboring wavelength, say 319 meters. To eliminate this interference the coupling is reduced toward 0 degrees on the scale and the primary and secondary circuits retuned. The reduction in coupling reduces the resistance in both of the two circuits and sharper tuning is provided. This reduction in coupling can be carried out to increase selectivity until a point is reached where the reduction in resistance is not greater than the energy transfer loss, and the advantage stops.

After the primary and secondary circuits are tuned to the desired signal, the third circuit, the tertiary circuit can be tuned to the same wavelength to produce regenerative amplification For the short wavelengths this is accomplished by the use of a Variometer. For the longer wavelengths the third circuit is not tuned to the wavelengths, but grid plate coupling is provided between the Variometer L4 and the secondary load coil L3. When receiving short wavelengths the Load L3 is short circuited and cut out of the secondary circuit. The shaft of the condenser C is connected to the battery side and the stator plates to grid, this prevents all body capacity effect. If the rotor plates were connected to grid there would be very troublesome body capacity effect it is meant that the proximity of the hand to tuning dials changes the, tuning, without moving the dials.

When the primary and secondary circuits have been tuned in resonance to the desired signal and the variometer increased to give maximum signal audibility, it will be found that if the secondary circuit is very slightly detuned lower, that the regeneration control can be increased further to advantage.

From the diagram it will be noticed that the negative Detector B Battery return is run to the center arm of a potentiometer. This allows the A Battery potential to be added to the detector battery for a fine adjustment of the detector plate potential. When using a UV201A Detector the difference is not noticeable, but when using a UV200 Gassy detector, this adjustment is extremely critical, as well as the filament temperature adjustment. A small by pass condenser of .001 MF capacity is provided around the first audio transformer primary and detector B Battery to allow unobstructed freedom for the high frequency oscillations. The grid condenser C1 is .00025 MF maximum and the grid leak R should be four megohms for a UV200 detector tube. The grid returns of the secondaries of the audio transformers are connected to the lower side of the rheostats, which provides a negative potential to the grids and lowers the B Battery consumption.

care and an abitable and an abitable and an abitable to be abitabl



Fig. 10

Unfortunately, the original quality of this photo is poor.



Fig. 11

Front and rear view combined three-circuit regenerative Receiver with Detector and two-stage audio amplifier. All the apparatus is contained in a 25-inch cabinet 8 inches high and seven and three-quarters inches deep. The front panel is shielded with a piece of 12-ounce sheet copper.



Fig. 13

Front and rear view Type 50 Regenerative Receiver for short wavelengths. In this design the plate variometer is replaced by a fixed inductance with a variable con-denser in parallel to obtain the regenerative action. A Detector without audio amplification is included within the cabinet.



Figures 8 and 9 show the front and rear views respectively of the Type 39 Detector and 2 Stage Audio Amplifier.

As the use of a Regenerative Receiver requires skill for maximum results, this type of receiver is being rapidly replaced by receivers that are easier to tune. Furthermore the regenerative receivers if handled improperly oscillate vigorously, causing bad interference with neighboring receivers. The single circuit type of regenerative receiver has so many disadvantages that it is not worth while to describe it.

A Standard Regenerative Receiver having a wavelength range of 160 to 850 meters combined in the same cabinet with the Detector and Two Stage Audio Amplifier is shown in Figs. 10 and 11. The Ant. Condenser and Antenna Inductance Switch tunes the Antenna or Primary Circuit. The Kilocycle Dial controls the Secondary Condenser and this in connection with the Short-Long Switch tunes the Secondary Circuit. The Regeneration Dial controls the Variometer which tunes the Plate of Tertiary Circuit. Rheostats are provided for each of the tubes and a Potentiometer connected to give a fine adjustment to the Detector Plate Voltage. In this design the Antenna Inductance and Antenna Coupling Inductance are wound on the same tube, and a series Variable Antenna Condenser is used to tune the Primary Circuit to resonance.

Figures 12 and 13 cover a Regenerative Receiver with Detector, designed for 50 to 150 meters only. In this receiver the coupling between the Antenna and Secondary circuits is fixed. Internal switches are provided to vary the amount of inductance used. Instead of using a Variometer to tune the Plate Circuit, an inductance with a variable condenser in shunt is substituted as this combination gives a finer adjustment on the regeneration at short wavelengths. As the slightest body capacity makes a decided detuning effect, this receiver is entirely shielded. The schematic wiring diagram is shown in Fig. 14.

Z

THE BLUE BOOK OF RADIO

from the press of THE CROSLEY PUBLISHING COMPANY CINCINNATI, OHIO

SIMPLICITY

-

SIMPLICITY OF RADIO

THE HORN SPEAKER, Box 53012, Dallas, Texas 75253-0012 January 1985

11-

TROUBLE HUNTING

The following Trouble Chart and Outline of Trouble will enable you quickly to find the part affected and the proper remedy when something goes wrong. Be sure to read the last paragraph of Section I, however, entitled If You Have Any Trouble, before using this chart and outline outline.

I. TROUBLE CHART. NOTE: The letters and numer-als refer to the paragraphs in the Outline of Troubles.

| General Ailment | Particular Symptom | Probable Cause | Possible Cause |
|--------------------|---|-------------------|----------------------|
| No signals. | Tubes do not light. | Al or A2 Cl | F. O. G. H. |
| | Tubes light but no click in phones when plug is removed from jack. | Bl or B2 | O.C.H.I.J.K |
| | Tubes light, phones click when plug is re- moved from jack. | Et or E2 D1 | |
| | Reception O. K. on detector but no sig- nals on first stage of amplifier. | A3 B3 | 0. L. |
| | Reception O. K. on first stage of ampli- fier, but no signals on second stage. | L. | |
| Weak Signals. | Set appears to be O. K. | Di El or E2 | 0 |
| | Rheostat must be all the way on for best results. | A2 | |
| | No Regeneration. | 132 | |
| | With Crystal Sct. | Р. | 10.00 |
| | Regeneration very critical. | Q. | |
| | Set will not tune. | Di Ei or E2 | M or M3 |

SIMPLICITY OF RADIO

TROUBLE CHART-Continued.

Gen

Fluctuati Signals of Reception

| eral | Particular Symptom | Probable Cause | Possible Cause |
|----------------|--|-------------------|-------------------|
| Noisy Noisy | Signal strength nor- mal when tubes are just turned on, but rapidly falls, off. | A2. | |
| | Signals interupted by clicks, and tubes flick- er in brilliancy, es- pecially when the set is jarred. | B1. | |
| | Clicks heard when tuning controls are adjusted. | M2. N. | |
| | Clicks heard when potentiometer is ad- justed. | S1. | |
| | Clicks heard when phone cords are hit or shuken, or at other times that cannot be connected with any particular operation or adjustment. | КЗ. | 0. |
| | Signals fade out and come back in again, perhaps accompanied moderate checks. | DI or D2. | |
| | Clicks when tap switch is adjusted. | M3. * | |
| | Set howls sometimes and not at other times No consistency. | Τ. | |
| | Continuous squeal in set regardless of am- pl-fier rheostat adjust- ment. | U. , | |
| | Ringing sound in phones, which gradu- ally dies out. | C2. | |
| | Steady low hum, pre- sent almost all of the time. | R. | |
| | Interference from other stations, | M4. | |

Seventy

TROUBLE CHART-Continued.

OF ARAD FO

| General Ailment | Particular Symptom | Probable Cause | Possible Cause |
|---------------------------|--|-------------------|-------------------|
| Distortion of Signals. | Far away stations better than local ones. | F2. | |
| | Distortion when coupling is great. Not distorted when coup- ling is loose. | 12. | |
| | Self Oscillation. | F2. | B4. S2. |
| | Good reception with one set of phones Bad with another (Same applies to loud speaker.) | k2. | |
| | Moderate distortion No regeneration | A4. | |

II. OUTLINE OF TROUBLES

11. OUTLINE OF TROUBLES
A. "A" BATTERY: 1. But connections. Examine connections and lead wires carefully to see that all contacts are good and that there is not a broken wire. 2. Diacharged. After testing connections and see if it lights to proper brilliance without turning the socket and see if it lights to proper brilliance without turning the socket and we are fulle that the hattery is too far discharged. If prover brilliances, the that the hattery is dead. In either this or proper brilliance without turning the socket and we are fulle to be the terminals of the battery with a wire (just touch the terminals instance). If there is no to prove the battery is dead. In either this or proper brilliance, the terminals instance, will be the terminals of the battery is used. The either this or proper brilliance with the terminals instance, will be the terminals of the battery with a wire (just ouch the terminals instance). If there is no to prove or charged, if of the storage type. 4. Abutery. When a separate amplifier "A" battery is used, the same and the section 2 above apply to it, as well as to the detector "A" battery to see that all contacts are good and there is no the aboken wire. 2. Discharged. The othere is proper brilliance with the battery leads sometimes cause this trouble. The section 2 above apply to it, as well as to the detector "A" battery to each the battery to be be detector. The section 2 above apply to it. The contacts are good and there is no the aboken wire. 2. Discharged. The othere is proved the sections and the there is no the booken wire. 4. Discharged. The other terminals contact a bove apply to it. The section at the terminals unless you want a shock. The other is heard in the phone, is a booken wire. 4. The great notage contact there are the sections 1 and 2. A. The great notage. The great with a terminal wiles we well then ease. The other are booken and the there is the terminals unless you want a shock. The other is notable. The prove of the dry cell type, or recharged, if

Seventy-one

SIMPLICITY OF RADIO

the chances are that the vacuum tube filament is burnt out. In this case the tube must be replaced. 2. *Microphonic action*. farring of the apparatus sometimes causes the elements of the vacuum tube to vibrate, resulting in a ringing sound in the receivers. Try mounting the set in a steadier position, and if this fails to remedy the trouble, try other tubes.

the set in a steadier position, and if this fails to remedy the trouble, try other tubes.
D. AERIAL: I. Bud lead-in connection or connection to aerial. Examine this and repair if found faulty. 2. Swinging aerial. If aerial is hanging with considerable slack, tighten up the supporting ropes until this slack is taken up.
E. GROUIND: I. Bud ground connection This is so often the set of trouble that it should be very carefully examined. 2. Bad ground "Try some other ground system.
F. RHEOSTAT: I. Burnt out. This may be tested by placing it in series with a pair of headphones across the terminals of a single dry cell. Just make the connection for an instant with all of the receivers when the connection is made and broken, the rhoostat is burnt out. In this case it must either be replaced or rewound. 2. Improperly adjusted. Sometimes the signals from nearby stations are so strong us to overload the headphones and cause distortion. This may observe the tube circuit may be overcome in this way.
G. SOCKETS: Bod contacts. This may be determined by examination, and remedied.
I. IACKS: Examine the jack for poor contacts, and adjust them if found necessary.

if found necessary. I TICKLIJR COIL 1. Burnt out. This is not very liable to occur. You may test the coil by connecting it in series with a single cell of dry battery and a set of healphones, making and breaking the connection and battering for clicks when this is done. If no checks are heard, the coil is burnt out and must be rewound, or a new one sub-stituted 2. Wrong adjustment. Excessive regeneration effects which interfere with reception are often caused by the ticker coil coupling being adjusted too tight, that is, by the tickler coil being too close to the variocoupler secondary. The tickler control may be marked "tickler" on your set, or (especially if the set is of the single circuit type) it may be marked "coupling. The tickler control on Crosely panel. J. LOUD SPEAKER: Some bard

panel. J. LOUD SPEAKER: Some loud speakers considerably distort the sound waves because of *faults in the design and construction* of their various parts. If your loud speaker is of a reliable make, you are not liable to experience trouble of this sort. I knewer, there is always a possibility that-this is the seat of distortion. It is best to use a good loud speaker.

loud speaker. K. PHONES: 1. Burnt out. Phones are not liable to burn out, unless they are accidently connected to some source of high-voltage, high-amperage electric current. They may be tested by touching their terminals lightly to the terminals of a single cell of dry battery. If no clicks are heard in the phones, they are burnt out and must be repaired or replaced. 2. Adjustment. Tightening or loosening the receiver cap sometimes clears up distortion due to improper tension on the receiver disphragm. 3. Cords broken. These may be tested by disonnecting them from the headphones and touching them lightly across the terminals of a single cell of dry battery. They should only Seventy-two

SIMPLICITY OF RADIO

be touched to the battery terminals for an instant. If no spark occurs (the battery being known to be a good one) the cords are burnt out and must be replaced. L. AUDIO FREQUENCY TRANSFORMER: Burnt out. This is the only trouble that you are liable to incur from an audio frequency transformer, and it happens very seldom. Both primary and secondary windfings of the transformer may be tested by means of a pair of phones connected in series with a single cell of dry battery, as described under Section 11.

connected in series with a single cell of dry battery, as described under Section II.
M. TUNING INDUCTANCE: I Wire broken in coda. Use test described in Section I. If coil is burnt out is must be rewound or replaced. 2. Coil Mountings. When contact with the ends of the coil is made through the coil mountings, or bearings, these may become loose, making the contact a poor one. If found to be loose, tighten these contacts in some way. 3. Tap sturth. Faulty contact may cause trouble. If contact between spring lever and contact points is loose, bend spring so as to tighten it and scrape contact until they are bright. 4. Coupling. Too tight coupling may cause this difficulty. Try adjusting the coupling contact.
N. TUNING CONDENSERS: A rotary plate condenser may be short-circuiting by having some of the plates come in contact with one another as they are rotated. Connect a single dry cell and set of headphones in series with the condenser. If clicks are heard as the condenser dial is turned, the condenser is short-circuiting and must be repaired or replaced.

0. WTRING: Broken were may be discovered by tracing all connections. The remedy is obvious. Make a soldered splice at the break. Short-circuits from touching wires often cause trouble. Examine and repair if found faulty.

CRYSTAL: Out of adjustment. Try other spots on the crystal

Q. GRID I.EAK: Wrong rulue, Try other values of grid leak-unless you are using the value specified by the manufacturers of your rube.

tube. R. POWER LINE: Too close to pouver line. Try placing antenna perpendicular to the power line. S. POTENTIOMETER: 1. Contact. Adjust the contact lever so that it bears with more pressure on the resistance unit. 2. Ad-justment. Try varying the potentiometer control. T. NEIGHBOR'S SET. Other receiving sets in the neighborhood sometimes cause this trouble

U. "C" BATTERY: Run down or connection bud. Replace battery or tighten connections.

page 5

Seventy-three

30

RELIABLE TELEGRAPH KEY.

A practical and serviceable key for amateurs, private line work, or any telegraph circuit. Also excel-lent for experimental wireless. The lever is the solid trunnion nickel plated type as used on stand-ard keys. The key base is japanned and striped. All other metal parts on grained and lacquered brass. All mounted on polished wood base. This key is unquestionably the best amateur's wireless key on the mar-ket.



No. 10X1 Reliable Telegraph Key. Postage 11c. Price\$.60







QST. September, 1922

1.11

By Hiram Percy Maxim

HAD the great good fortune the other evening to meet the greatest of all radio amateurs. The occasion was a memor-able one. Through the courtesy of the Radio Corporation of America I and some fifty others sat down to dinner with him at the Ritz-Carlton Hotel in New York City. I had never seen him before. Few of us American amateurs had even seen City. I had never seen him before. Few of us American amateurs had even seen him. The dinner was given in his honor. It was one of the most pleas-ant dinners I have

ever attended, and every one of us A. R. R. L. people would have thor-oughly enjoyed it could we all have been present. It would be a pity to allow such an event to pass down into history and not be recorded, and I am going to tell about it. It seemed to me ever attended, and

It seemed to me that most of the men who had distinguished themselves directly or indirectly in radio indirectly in radio either were present or sent regrets that they could not at-tend. As I sat there and looked about and recog-nized the different famous men, I thought that there

thought that there was probably more radio brains per square inch pres-ent than had ever gathered before. The toastmaster was Mr. Young, Chairman of the Board of the Radio Corporation. He arose after the dinner and said that he was not going to call upon any one who knew anything about radio. Unless he adhered to this rule he warned us that we would be there for a couple of days. He said it would bar him from call-ing upon Dr. Pupin of Columbia University, Mr. Alexanderson, Mr. Colpitts, Com-mander Hooper of the U.S. Navy, and fellows, he included Mr. Maxim, of the American Radio Relay League, and Mr. Paul Godley of the same organization. He referred to the American amateur as one

of the greatest forces in radio to-day, and put into a tual words all of the things we have struggled so many years to accom-p.ish. It certainly was a great pleasure to see that we American amateurs had been successful in getting over the fine things that we stand for. It proved that good Americanism, honorable dealing with our fellows, straightforward methods, dignity, and good fellow-

d methods, dignity, and good fellow-ship will win in the end every time. I glanced at "Para-gon Paul" as Mr. Young paid the American amateur h is compliments, and was deeply pleased to see the famous Godley smile slowly spread over the entire countenance. spread over the entire countenance. Our Paul caught the spirit of the thing, too. Many national characters who might pass as not knowing anything

might pass as not knowing anything about the technical side of radio spoke, although how Mr. Nally, president of the Radio Corpor-ation, got by is open to suspicion, and h is eloquent words of apprecia-tion of what the Greatest of A 11 Amateurs had done for humanity were Amateurs hau unity for humanity were tremendously i m-pressive. Several

-Photo by Kadel & Herbert

noto by Kadel & Herbert noto by Kadel & Herbert the guest of honor. It was worth special mention, for both Mr. Godley and I know what was meant. Overtopping all the wonderful work this fine gentleman has done in radio, stands his lovable and modest personality. Again it emphasized the queer fact that radio begets fine personalities. It seems to do something to a man to bring out the human side of him. Presently the dinner and the speeches were over. Dr. Alfred Goldsmith was good enough to think of us and he secured an autographed dinner card and gave it to me. The little act was deeply appreciated, and I later gave the precious paper to Mr.



| This Month's Barga | ins Fro | m ARS | |
|--|---|--|--|
| DIRECTORY OF RADIO COLLECTORS AND SUPPLIERS. Includes TV and phono- graph collectors too. This book has merely two thousand entries | SUPREME Radio | & TV Manuals | Sale ellas reb.co, 1985 |
| Suppliers, Clubs, Libraries carrying old servicing information, Hanufacturers, Museums, Publications and a special Foreign mection. Handy area cade and time zone chart make connecting with others much | The de new Jose | And the second | |
| easier. Item # P-1. 34 \$2.75 ANS CUIDE TO FINDING SERVICING INFORMATION. An involumble tool in determining the are and manufacture of acts. Sources of service | BADIO DIAGRAN | The second | |
| information identified. The only guide to exactly what service data source should cover sets of a particular vintage! A valuable aid to everyone involved in electronics. Item # P-2. 37 \$1.50 | RADIO VOLUMES | TV VOLUMES (BOW) | |
| RADIO HATHEBATICS FOR COLLECTORS, A mini electronics course. Ex- plains Uhm's law, AC currents, ohmmeter testing, wattere, series and parallel circuits, capacity, inductance, tubes, etc. Includes | R-2 1939 R-3 1940 R-4 1941 | TV-2 1948 TV-3 1949 TV-4 1950 | ARS order form |
| a decidel chart, useful formulas used in radio and wiring data. A great reference book. Item # P-3. X \$/.20 | R-5 1942 R-6 1946 R-7 1947 | TV-5 1951 TV-6 1952 TV-7 1953 | Name |
| old circultry, find problems, replace parts and understand variations in manufacture. Also covers testing procedures and pives mony holp- ful hints. Includes a chart of old parts symbols. Item (P-4, M. | R-B 194P R-9 1949 R-10 1950 | TV-8 1954 TV-9 Earlv 1955 TV-10 Late 1955 | Address |
| AN INTRODUCTION TO RADIO. A basic course on radio theory, this hook explains old radio circuitry. Rallast tubes, superhets, hatteries, oil condensers and the like are discussed and reviewed. Item # P-5. | R-11 (1951 R-12 (1952 R-13 (1953) (1953) (1953) | TV-11 1956 TV-12 Early 1957 TV-13 Late 1957 | State, Zip |
| RECEIVING TUBE CHARACTERISTICS AND SOCKET CONNECTION GUIDE, This manual lists nearly all receiving tubes you are likely to encounter the encly radius. All important data such as withing discovery | R-14 (1954 R-15 H 1955 R-16 1956 | TV-14 1958 TV-15 Early 1959 TV-17 1960* 1051* 1051* | Name of item Catalog How Total (1 or 2 words) number many? Total |
| function, voltage and current reading. etc. are presented in an ensy- to-read format. A must for all involved in radiol 1tem # P-6. | R-17 1957 R-18 1958 R-19 1959 \$\$\mathcal{F}_2\$ 1960 | TV-20 Late 1962* TV-21 1953* TV-22 1964* | |
| player planos, pramophones and the phonograph. Traces Edison's work with wax cylinders to the emergence of Victor Telking Machine | R-20 1960 R-21 1961 R-22 1962 R-23 1963 | TV-23 Early 1965* TV-24 Late 1965* TV-25 1966* | |
| let. Fun reading! Item # P-7. X #/. Most of the incorrection nound in the second state is the second state in the second state is the second state in the second state is the second state | R-24 1964 R-25 1965 R-26 1966 | TV-28 1960. TV VOLUE (Color) | |
| circuitry and data on the most common early acts. All the facts you need to make most repairs, locate parts and values, etc. are here. A wealth of value in one handy source. Item # P-A. The \$//50 | R-27 1967 - 1959 AUTO RABIO | ARS Enterprises P. O. Box 997 | |
| CONDUMICATIONS - FROM SMOKE SIGNALS TO SATELLITE. The story of Moree and Vail developing the Morse code, the intrivuing story of | AU-1 1964 - 1965* Supreme manuals are out | Mercer Island, WA 98040 of print and available | Total for goods \$ |
| and how the teleproph was improved. The advent of the telephone and radio are also covered. A nice reminder of how far we have come! Item # P-9. | complete and bound with item # as volume number Price each is 197 | coverstock. Specify , i.e. R-18 or TV-6, etc. | for mailable items \$ 2 00 Tax (add state and local taxes as required by law) \$ |
| HOST-OFTEN-NEEDED 1947 TELEVISION AND FM SERVICING INFORMATION. A reprint of the popular volume one of the Supreme TV series of service manuals. Covers most of the early TVs and FM receivers. About 200 | •NOTE: A very small sup the (•) are available a | ply of books noted with t Meach. \$4.9 | Grand total \$ |
| fact-filled pages I Item # P-10. 34 \$74.03 <u>INDEX FOR SUPPRENE PUBLICATIONS HOST-OFTEN-NEEDED RADIO AND TELEVISION</u> HANUALS, Complete copy of the index to Supreme mushuals. Item # P-11. | | D. <u>Free Catalog</u> My account number is: | Expiration date |
| ARS Enterprises P. O. Box 997 Mercer Island, WA 98040 Signature (sign full na | me as shown on account) | | |
| the second se | Lover a hard hard | | and party in the second |
| | | | |
| W A N | TF | D | |
| | | - | |
| | | | |
| # ELECTRON TUBE (ST SHAPE) 45 50 VT 52/45 special 203 8010/VT | 62 Q42/VT 72 | 866 ID | |
| <pre># ELECTRON TUBE (ST SHAPE) 45, 50, VT 52/45 special, 2A3, 801A/VT # ELECTRON TUBE (ANTIQUE GLOBE SHAPE)</pre> | 62, 842/VT 72, | 866JR. | |
| <pre># ELECTRON TUBE (ST SHAPE) 45, 50, VT 52/45 special, 2A3, 801A/VT # ELECTRON TUBE (ANTIQUE GLOBE SHAPE) 27, 37, 41, 42, 45, 46, 47, 50, 56, 71/</pre> | 62, 842/VT 72, '71A, 80, 82, 83 | 866JR. , 842/VT 72, 843 | 5/VT 73, |
| <pre># ELECTRON TUBE (ST SHAPE) 45, 50, VT 52/45 special, 2A3, 801A/VT # ELECTRON TUBE (ANTIQUE GLOBE SHAPE) 27, 37, 41, 42, 45, 46, 47, 50, 56, 71/ 1602, 10/VT 25, UX 216, UV 202, 866JR.</pre> | 62, 842/VT 72, 71A, 80, 82, 83 | 866JR. , 842/VT 72, 843 | 3/VT 73, |
| # ELECTRON TUBE (ST SHAPE) 45, 50, VT 52/45 special, 2A3, 801A/VT # ELECTRON TUBE (ANTIQUE GLOBE SHAPE) 27, 37, 41, 42, 45, 46, 47, 50, 56, 71/ 1602, 10/VT 25, UX 216, UV 202, 866JR. # ELECTRON TUBE (LARGE SIZE TRANSMÍTTING 211/VT AA. VT AB. VT AC. | 62, 842/VT 72, 71A, 80, 82, 83 | 866JR. , 842/VT 72, 843 | 5/VT 73, |
| <pre># ELECTRON TUBE (ST SHAPE) 45, 50, VT 52/45 special, 2A3, 801A/VT # ELECTRON TUBE (ANTIQUE GLOBE SHAPE) 27, 37, 41, 42, 45, 46, 47, 50, 56, 71/ 1602, 10/VT 25, UX 216, UV 202, 866JR. # ELECTRON TUBE (LARGE SIZE TRANSMITTING 211/VT 4A,VT 4B,VT 4C. # ELECTRON TUBE (EUROPEAN TRIODE)</pre> | 62, 842/VT 72, 71A, 80, 82, 83 | 866JR. , 842/VT 72, 843 | 3/VT 73, |
| <pre># ELECTRON TUBE (ST SHAPE) 45, 50, VT 52/45 special, 2A3, 801A/VT # ELECTRON TUBE (ANTIQUE GLOBE SHAPE) 27, 37, 41, 42, 45, 46, 47, 50, 56, 71, 1602, 10/VT 25, UX 216, UV 202, 866JR. # ELECTRON TUBE (LARGE SIZE TRANSMÍTTING 211/VT 4A,VT 4B,VT 4C. # ELECTRON TUBE (EUROPEAN TRIODE) AD 1, ED, PX4, PP3/250, PX 25, PP5/400,</pre> | 62, 842/VT 72, 71A, 80, 82, 83) 43. DA 30, DA 60, | 866JR. , 842/VT 72, 843 DA 100. | 5/VT 73, |
| <pre># ELECTRON TUBE (ST SHAPE) 45, 50, VT 52/45 special, 2A3, 801A/VT # ELECTRON TUBE (ANTIQUE GLOBE SHAPE) 27, 37, 41, 42, 45, 46, 47, 50, 56, 71, 1602, 10/VT 25, UX 216, UV 202, 866JR. # ELECTRON TUBE (LARGE SIZE TRANSMÍTTING 211/VT 4A,VT 4B,VT 4C.</pre> | 62, 842/VT 72, (71A, 80, 82, 83) 43. DA 30, DA 60, OMPANY) | 866JR. , 842/VT 72, 843 DA 100. | S/VT 73, |
| <pre># ELECTRON TUBE (ST SHAPE) 45, 50, VT 52/45 special, 2A3, 801A/VT # ELECTRON TUBE (ANTIQUE GLOBE SHAPE) 27, 37, 41, 42, 45, 46, 47, 50, 56, 71/ 1602, 10/VT 25, UX 216, UV 202, 866JR. # ELECTRON TUBE (LARGE SIZE TRANSMÍTTING 211/VT 4A,VT 4B,VT 4C.</pre> | 62, 842/VT 72, 71A, 80, 82, 83) 43. DA 30, DA 60, OMPANY) WE 104 (ST & TEN WE 244, WE 247 | 866JR. , 842/VT 72, 843 DA 100. NIS), WE 205(ST , WE 252, WE 262 | & TENNIS), WE 264. |
| <pre># ELECTRON TUBE (ST SHAPE) 45, 50, VT 52/45 special, 2A3, 801A/VT # ELECTRON TUBE (ANTIQUE GLOBE SHAPE) 27, 37, 41, 42, 45, 46, 47, 50, 56, 71/ 1602, 10/VT 25, UX 216, UV 202, 866JR. # ELECTRON TUBE (LARGE SIZE TRANSMÍTTING 211/VT 4A,VT 4B,VT 4C. 845/VT # ELECTRON TUBE (EUROPEAN TRIODE) AD 1, ED, PX4, PP3/250, PX 25, PP5/400, # ELECTRON TUBE (mfg. WESTERN ELECTRIC C WE VT 1, WE VT 2, WE 101(TENNIS BALL), WE 211, WE 212, WE 216, WE 217, WE 242, WE 271, WE 274; WE 275, WE 276, WE 284,</pre> | 62, 842/VT 72, 71A, 80, 82, 83) 43. DA 30, DA 60, COMPANY) WE 104(ST & TEN WE 244, WE 247 WE 300, WE 301 | 866JR. , 842/VT 72, 843 DA 100. NIS), WE 205(ST , WE 252, WE 262 , WE 310, WE 311 | & TENNIS), WE 264, WE 339, |
| <pre># ELECTRON TUBE (ST SHAPE) 45, 50, VT 52/45 special, 2A3, 801A/VT # ELECTRON TUBE (ANTIQUE GLOBE SHAPE) 27, 37, 41, 42, 45, 46, 47, 50, 56, 71, 1602, 10/VT 25, UX 216, UV 202, 866JR. # ELECTRON TUBE (LARGE SIZE TRANSMITTING 211/VT 4A,VT 4B,VT 4C. 845/VT # ELECTRON TUBE (EUROPEAN TRIODE) AD 1, ED, PX4, PP3/250, PX 25, PP5/400, # ELECTRON TUBE (mfg. WESTERN ELECTRIC O WE VT 1, WE VT 2, WE 101(TENNIS BALL), WE 211, WE 212, WE 216, WE 217, WE 242, WE 271, WE 274; WE 275, WE 276, WE 284, WE 345, WE 347, WE 348, WE 349, WE 350E</pre> | 62, 842/VT 72, (71A, 80, 82, 83) 43. DA 30, DA 60, COMPANY) WE 104 (ST & TEN WE 244, WE 247 WE 300, WE 301 4, WE VT 25/25A, | 866JR. , 842/VT 72, 843 DA 100. NIS), WE 205(ST , WE 252, WE 262 , WE 310, WE 311 WE VT 52. | & TENNIS), e, we 264, , we 339, |
| <pre># ELECTRON TUBE (ST SHAPE) 45, 50, VT 52/45 special, 2A3, 801A/VT # ELECTRON TUBE (ANTIQUE GLOBE SHAPE) 27, 37, 41, 42, 45, 46, 47, 50, 56, 71/ 1602, 10/VT 25, UX 216, UV 202, 866JR. # ELECTRON TUBE (LARGE SIZE TRANSMITTING 211/VT 4A,VT 4B,VT 4C. 845/VT # ELECTRON TUBE (EUROPEAN TRIODE) AD 1, ED, PX4, PP3/250, PX 25, PP5/400, # ELECTRON TUBE (mfg. WESTERN ELECTRIC C WE VT 1, WE VT 2, WE 101(TENNIS BALL), WE 211, WE 212, WE 216, WE 217, WE 242, WE 271, WE 274; WE 275, WE 276, WE 284, WE 345, WE 347, WE 348, WE 349, WE 350E *We pay the top price for NEW, in original # FOULDMENTS wfg. WESTERN ELECTRIC CO</pre> | 62, 842/VT 72, (71A, 80, 82, 83) 43. DA 30, DA 60, OMPANY) WE 104(ST & TEN WE 244, WE 247 WE 300, WE 301 S,WE VT 25/25A, box or USED, ex | 866JR. , 842/VT 72, 843 DA 100. NIS), WE 205(ST , WE 252, WE 262 , WE 310, WE 311 WE VT 52. cellent condition | & TENNIS), & TENNIS), , WE 264, , WE 339, M. |
| <pre># ELECTRON TUBE (ST SHAPE) 45, 50, VT 52/45 special, 2A3, 801A/VT # ELECTRON TUBE (ANTIQUE GLOBE SHAPE) 27, 37, 41, 42, 45, 46, 47, 50, 56, 71, 1602, 10/VT 25, UX 216, UV 202, 866JR. # ELECTRON TUBE (LARGE SIZE TRANSMITTING 211/VT 4A,VT 4B,VT 4C. 845/VT # ELECTRON TUBE (EUROPEAN TRIODE) AD 1, ED, PX4, PP3/250, PX 25, PP5/400, # ELECTRON TUBE (mfg. WESTERN ELECTRIC C WE VT 1, WE VT 2, WE 101(TENNIS BALL), WE 211, WE 212, WE 216, WE 217, WE 242, WE 345, WE 347, WE 348, WE 349, WE 350E *We pay the top price for NEW, in original # EQUIPMENTS mfg. WESTERN ELECTRIC CO. 7 (HORN),555,594,597.713C(DRIVER) 285.618</pre> | 62, 842/VT 72, (71A, 80, 82, 83) 43. DA 30, DA 60, OMPANY) WE 104(ST & TEN WE 244, WE 247 WE 300, WE 301 S,WE VT 25/25A, box or USED, ox (55,4151,4181(SP ,171B/C(A.F.TRA | 866JR. , 842/VT 72, 843 DA 100. NIS), WE 205(ST , WE 252, WE 262 , WE 310, WE 311 WE VT 52. cellent conditio EAKER) 13A,14A,1 NS) 46.86.91.124 | & TENNIS), & TENNIS), WE 264, WE 339, M. 5A, 17A, 22A, 26A, (AMPLIFIER) |
| <pre># ELECTRON TUBE (ST SHAPE) 45, 50, VT 52/45 special, 2A3, 801A/VT # ELECTRON TUBE (ANTIQUE GLOBE SHAPE) 27, 37, 41, 42, 45, 46, 47, 50, 56, 71/ 1602, 10/VT 25, UX 216, UV 202, 866JR. # ELECTRON TUBE (LARGE SIZE TRANSMÍTTING 211/VT 4A,VT 4B,VT 4C.</pre> | 62, 842/VT 72, (71A, 80, 82, 83) 43. DA 30, DA 60, OMPANY) WE 104 (ST & TEN WE 244, WE 247 WE 300, WE 301 9, WE VT 25/25A, box or USED, 0x (55, 4151, 4181 (SP), 171B/C (A.F.TRA RIC PRO | 866JR. , 842/VT 72, 843 DA 100. NIS), WE 205(ST , WE 252, WE 262 , WE 310, WE 311 WE VT 52. cellent condition EAKER) 13A, 14A, 1 NS) 46, 86, 91, 124 DUCTS | & TENNIS), 4. TENNIS), 4. WE 264, 5. WE 339, 5. ME 339, 5. (AMPLIFIER), |
| <pre># ELECTRON TUBE (ST SHAPE) 45, 50, VT 52/45 special, 2A3, 801A/VT # ELECTRON TUBE (ANTIQUE GLOBE SHAPE) 27, 37, 41, 42, 45, 46, 47, 50, 56, 71, 1602, 10/VT 25, UX 216, UV 202, 866JR. # ELECTRON TUBE (LARGE SIZE TRANSMÍTTING 211/VT 4A, VT 4B, VT 4C.</pre> | 62, 842/VT 72, (71A, 80, 82, 83) 43. DA 30, DA 60, OMPANY) WE 104 (ST & TEN WE 244, WE 247 WE 300, WE 301 WE 300, WE 301 S,WE VT 25/25A, box or USED, 0x (55,4151,4181 (SP),171B/C (A.F.TRA RIC PRO AKICHO, SHINJUK | 866JR. , 842/VT 72, 843 DA 100. NIS), WE 205(ST , WE 252, WE 262 , WE 310, WE 311 WE VT 52. cellent condition EAKER) 13A,14A,1 NS) 46,86,91,124 DUCTS U-KU, TOKYO 160 | A TENNIS), WE 264, WE 339, M. 5A, 17A, 22A, 26A, (AMPLIFIER), |



can now be received on the opposite of the

Warner, and it will hang upon the wall of The American Radio Relay League headquarters for many years, I hope. Then I had a few words with the Greatest of All Amateurs. I told him I wished I might convey to him the inspiration he had been to thousands of young Americans. His reply was characteristic of him. He said, "And I wish, Mr. Maxim, I might convey to them the inspiration they have been to me!"

There is your message, fellow American amateurs. It comes direct and first-handed from Guglielmo Marconi, a good fellow, animated by precise'y the same thoughts and aspirations that animate us, a real dyed-in-the-wool brass pounder, a knight of the dot and dash, and the Greatest of All Amateurs.

[Editor's Note—Mr. Marconi in his address before a joint meeting of the A.I.E.E. and the I.R.E. told of many new developments of great interest to amateurs.

In England, he said, a large amount of investigation had been carried out in recent years on the efficiency of valve transmitting circuits and the radiation efficiency of aerial circuits, so that now it is possible to obtain in commercial work an efficiency from the anode input of the tubes to the aerial of seventy per cent, and an efficiency of radiation into space (of the antenna current) as high as fifty per cent; that is, an efficiency from the power input to the actual radiation into space of about thirty-five per cent; and this on waves as long as 20,000 meters, which have been notoriously inefficient as regards actual radiation. He did not disclose the methods used to secure this increase in efficiency but said that in short-wave stations it was hardly worth the extra expense involved, probably because of the natural greater radiation efficiency of the higher frequencies.

Tuned amplifiers, both radio and audio frequency, Mr. Marconi said were of the greatest technical interest. Quite amazing results could be had when the proper care was taken in the design of air-core h.f. transformers to keep electrostatic coupling between the windings to a minumum and to provide an impedance in the primary equal to the internal plate-to-filament resistance of the tube. The same idea is applicable to iron-core audio transformers, but an iron magnetic shunt is necessary octween the windings to sufficient y loosen the coupling. between the primary and secondary circuits.

Mr. Marconi has a fascination in the transmission effects to be encountered in Antipodal regions. The ease which signals can now be received on the opposite of the globe from the transmitter show there is something to the idea of the waves traveling around the earth by various routes and reuniting near the Antipodes. He told of recent scientific expeditions to points near the Antipodes of various high-powered stations, particularly an expedition to South America which made numerous observations on the signals of NPO, Cavite, on the other side of the globe. Received on a loop direc tion finder (unilateral) it was not particularly surprising to find that in such a location (within 2000 miles of the Antipodes) the constancy of direction was not maintained and the signals often would change direction, sometimes coming from a direction which indicated they preferred to travel a distance of 14,000 miles rather than come by the shortest route. Sometimes during the unstable periods when the direction was shifting the signals would arrive by two or more routes and, altho cute steady and normal when received on the one-way loop, would interfere with each other when received on a simple vertical aerial in such a way as to produce slow beats resembling Morse letters transmitted very slowly:

Mr. Marconi then told of the very remarkable work done by Mr. C. S. Franklin, of the British Marconi Company, in phore operation on waves under 15 meters in length. Tube transmitters are used, with reflectors at both the transmitter and receiver. The reflectors provide about 200 times the energy that would be received without them, and seem completely to have eliminated fading, which might be expected to be so severe at such wave lengths as to make operation impossible. In order to take advantage of these benefits a very short wave must be used, as a reflector (particularly a revolving one) represents serious constructional difficulties for long waves. The lecture-room set demonstrated by Mr. Marconi used a wave length of one meter and was so extremely directional that a very small revolution of the reflector completely eliminated the signal at the receiver. The reflectors consist of a number of vertical conductors of a height of 1.5 wave lengths arranged on a cylindrical line. A telephone circuit over 97 miles between London and Birmingham is providing good clear speech at all times on a wave length of 15 meters by virtue of such reflectors. The aerial itself in this case is somewhat over a half wave length long. The radiation efficiency at such small wave lengths is amazing high, about 300 watts being actually radiated into space from an ancde input of 700 watts.—K.B.W.]

| 12200 |
|---|
| VE VE Y |
| Historical Radio Societ |
| Include PRESERVATION for POSTERITY |
| V & V & V & V & ANNUAL & V & V. & V & V |
| Saturday Fabruary 16 1085 |
| THE SHERWOOD, 6500 S. Emerson Avenue |
| PROGRAM SCHEDULE |
| 10:00 AM Register for the day. Set up for SWAP N'SELL and contest. |
| 12: NOCN Enjoy a casual lunchen with fellow IHRS members and guests. |
| 1:30 PM SWAP N'SELL and enjoy. 3:00 FM Have a safe trip home. |
| REGISTRATION |
| A registration fee of \$1.00 will be collected when you arrive. Lunchen price is \$5.00 which <u>includes</u> the registration. |
| SWAP N'SELL |
| trading, selling and display. Bring your extras-large and |
| small-old and older-for the person who is looking for what you don't need. |
| POPULAR VOTE CONTEST Bring your favorite radio for display-any makeany vintage. |
| If you have questions concerning weather conditions in Indianapolis phone: Bob Shuck (317) 849-0210 Dr. Ed Taylor (317) 638-1641 |

For membership information send a SASE to: INDIANA HISTORICAL RADIO SOCIETY

245 N. Oakland Ave., Indianapolis, IN 46201

CLASSIFIED ADS...15 CENTS A WORD. (FIRST 20 WORDS FREE) PHOTO ADS....\$5.00 EXTRA. BUSINESS SIZE CARD ADS ... \$1.00

> AD SPACE Full page....\$75.00 Half page....\$45.00 Quarter page..\$35.00 Multiple runs...20% discount

(lower price per square inch-- compare)

THE ANTIQUE RADIO CLUB OF AMERICA

PRESENTS

RADIOFEST '85 August 9th-10th, 1985 Holiday Inn - Elgin, Illinois for more information contact: Joe Willis P. O. Box 14732 Chicago, IL 60614

riea market

MAJESTIC MODEL #90, chassis only with speaker, cheap, SASE for information. - M. J. Doback, 592 E. Southlawn. Birmingham, MI 48009 (313) 646-6944.

FOR SALE: 2 SETS OF RIDER MANUALS; 1 TO 22 AND 1 TO 5 ADBRIDGED PLUS 2 TO 19. – FRANK BREWSTER, 3RD STREET, BAXTER SPRINGS, KS 66713. FORTY YEAR COLLECTION TUBES. SEND LIST OF TYPES REQUIRED AND PRICING QUOTES. LEVY, 4141 KRUPP DRIVE, EL PASO, TX 79902.

FOR SALE. MUSIC MASTER SPEAKER. Rest. \$100.00 A.K. 36, E speaker and type Y power supply w/t \$125.00 A.K. 46 in secretary desk, cabinet, rest. \$250.00 Crosleys, superhets and other battery radios for sale. SEND SASE for list. OLD RADIOS, 834-A West North Avenue, Flora, IL 62839 (618) 662-7556.

FOR SALE- UNUSED AND USED radio and TV tubes and parts, S.A.S.E. for lists. C. Elmer Nelson, 11 S. Church Street, Princeton, IL 61356.

12

THE HORN SPEAKER, Box 53012, Dallas, Texas 75253-0012 January 1985



ONE TUBE TWO TUBE SETS, CRYSTAL SET, LOOSE COUPLER, RADIO HORNS, 75 MOSTLY OUTSIDE HORN PHONOGRAPHS — SELL ONE OR ALL FOR \$75,000 CASH, PARTS, RECORDS AND TUBES. TO ME IT'S ALL OVER. — CALL DAYS (503) 474–5966.

FOR SALE — OLD STYLE PEAR SHAPE RADIO TUBE IN GOOD USED CONDITION.

S.A.S.E. for list. FOTHE, 10 Jackson Street, Sloatsburg, NY 10974.

FOR SALE- CATHEDRAL, battery and AC radios. List four times a year. Send S.A.S.E. J. Albert Warren, Box 279, Waverly, PA 18471.

"RADIOLA 24 (no tube cover)

\$150.00, RCA 103 speaker \$55.00, Midwest 17 tubes chassis, rough \$35.00, Majestic 50 cathedral \$140.00, Fada 6 tubes, bad pot metal \$30.00, Michigan 1 tuber (rough) \$110.00, Royal wood horn in cabinet (wrong driver) \$20.00, Magnavox 1925 floor model, mint \$90.00; Rosenthal, 507 S. Maryland Avenue, Wilmington, DE 19804." FOR SALE TUBES, PARTS, KNOBS, DIAL BELTS, RIDER, HOWARD SAMS, RCA, PHILCO SERVICE MANUALS, VOL. CON-TROLS, TUBE SOCKETS, TUBE TESTERS, SIGNAL GENS., PANEL METERS, 100'S OF OTHER ITEMS, NO LIST. WRITE WANTS. SASE FOR REPLYS. KRANTZ, 100 OSAGE AVE., SOMERDALE, NJ 08083. FOR SALE: UNUSED 864/ VT-24 TUBES. \$8.00 EACH OR 10 FOR \$75.00, JOSEPH D'AIRO, 201 N. RICHMOND AVENUE, MASSAPEQUA, NY 11758.

ATWATER KENT model 38 receiver with type E horn speaker, working order, \$150.00 plus postage, insurance. Madison, WI (608) 257-7267.

FOR SALE: TUBES, PARTS, SCHE-MATICS, custom power supplies. SASE for list to: Los Locos, 1201-74 Monument Blvd., Concord, CA 94520.

FOR SALE- ALL UNTESTED, PICK UP ONLY, WILL NOT SHIP. SCOTT LABS. CHICAGO 800-B CHASSIS AND POWER UNIT, NO SPEAKERS \$75.00, E.H SCOTT RBO CZ6 4 BAND BC AND SW REC. HAVE (3) \$75.00 EACH MADE FOR US NAVY. TYPE CMX 46155-A RADIO REC. 15 TO 600 KC \$100.00, HALLI-CRAFTERS SX88 \$150.00, MARCONI 6 BAND, MADE IN ENGLAND, PRE WWII, NEEDS REPAIRS \$65.00, KRANTZ, 100 OSAGE AVENUE, SOMERDALE, NJ 08083.

FOR SALE- CATHEDRAL, BATTERY AND A.C. RADIOS. SEND SASE. J. ALBERT WARREN, BOX 279, WAVERLY, PA 18471.

ALL ABOUT CRYSTAL SETS. New book by Charles Green shows you how to build crystal set radios. \$7.95 ppd USA. ALLABOUT BOOKS, DEPT H, P. O. BOX 4155, Fremont, CA 94539.

FOR SALE — FOR SALE — SEE MY AD IN WANTED BUYERS (CASH), KRANTZ, 100 OSAGE AVENUE, SOMER-DALE, NJ 08083.

TRADE— BOOK EVERYMAN'S GUIDE TO RADIO, Vol. 1 for Vol. 2. Serge Krauss, 141 Homan, Elkhart, In 46516.

FORTY YEARS COLLECTION TUBES, SEND LIST TYPES REQUIRED FOR AVAIL-ABILITY AND PRICE QUOTES, LEVY, 4141 KRUPP DRIVE, EL PASO, TX 79902.

40 TRANSMITTING TUBES, new in original cartons. \$75.00 plus U.P.S. S.A.S.E. for listing. JOHN MARTIN, 817 COOK, BILLINGS, MT 59101.

FOR SALE: OLD 78 RPM disc playr and recorder. Believe it is modified Wilcox Gay. Requires an amplifier. \$25.00 plus shipping. Hugh Kuhn, 128 6th Avenue East, Cresco, IA 52136.



WANTED: TUNING CONDENSER for Philco model 60, also tuning dial and knobs. (715) 823-6744. Russell Schoen, R#1, Box 224, Clintonville, WI 54929.

WANTED: 1 TUBE SETS, CRYSTAL SETS, GREBE CR EQUIPMENT. RAY GARNER, ROUTE ¹, BOX 320, BIG SANDY, TN 38221.

ELECTRO- MEDICAL AND QUACK DE-VICES, BOOKS WANTED. INTERESTED IN FLOOR MODELS AND IN DEVICES WITH MULTIPLE KNOBS RESEMBLING RADIOS BUT WHICH ARE NOT RADIOS. I AM ALREADY SATURATED WITH VIOLET RAY DEVICES, SIMPLE 4D BATTERIES. PLEASE DESCRIBE AND PRICE. OLE LINDAN, 1404 DORSH ROAD, CLEVE-LAND, OH 44121

WANTED W. E. ELECTRON TUBES. I buy most everything the Japanese buy, plus a lot more they don't bother with. I pay more, pay faster and I'm easy to contact. Call or write with anything of interest. Charles Dripps, 4331 Maxson Road, El Monte, CA 91732. (818) 444-7079 WANTED: ANY AND ALL'INFORMATION on the "Radio-Pen" facsimile receiver by John V. L. Hogan, August 1934 Radio News. Anyone who owned and operated? D'Arcy Brownrigg, P. O. Box 292, Chelsea, Quebec, Canada, JOX 1ND.

We take liberty herewith to introduce ourselves as being a long establisher importer of antique mechanical music. ALWAYS WANTED: VINTAGE AND ANTIQUE RADIO, HORN SPEAKER, VINTAGE T.V., CATHEDRAL RADIO, GRAMOPHONES, PHONOGRAPHS, POLY PHONE, JUKE BOX, CRYSTAL SETS, MUSICAL BOXES, TYPEWRITER, MACHINES, SEWING TELEPHONES. WESTERN ELECTRIC AUDIO PRODUCTS, AMPLIFIER, DRIVERS, HORN AND SPEAKER SYSTEMS, ANY SPARE PARTS, OLD CATALOGUES AND POSTER, AND ALL OTHER OLD MECHANICAL ITEMS. TOP CASH PRICES PAID, Whole collection or single items. We will travel any where to collect, if you have them in hand. Please contact us with prices and photograph to: MR. PIPAT W. POOLPOL, 9 Soonthon Kosa Road, Klong toey, Bangkok 10110 Thailand. Tel. 2863947.

RCA AND AC A.K. CATHEDRAL in very good to mint. AC, A.K. Kiel parlor table with original finish, with or without chassis; 5 Zenith knobs for farm radio, page 191 F.O.S., Jeff ' Vance, 1819 West Rovey, Phoenix, AZ 85015.

WILL PAY IN WD11s or cash for: (1) Crosley 59 chassis, working or not, (2) Radiola 26 battery box, (3) Pre-1924 DeForest items, (4) WWI items, (5) 1920s portables, (6) Radio receptor RF transformer for superhet. Rosenthal, 507 S. Maryland Avenue, Wilmington, DE 19804.

WANTED: PLUG-IN COILS, 4-5-6 PRONG TYPES, WITH GOOD WINDINGS, SINGLES OR SETS. BOB, W6ME, 4178 CHASIN STREET, OCEANSIDE, CA 92056

VU METER for Roberts Reel to Reel Tape Recorder Model 192HT or FT Part No. 54-13. Cecil E. Wallace, 1345 Oak Meadows, Dallas, TX 75232.

ATWATER KENT AK5, AK10, AK12, MAGNAVOX R2, R3, MEAPON CRYSTAL SET. WILL PAY HIGH PRICE IF GOOD CONDITION. 102 KOKUBUHIGHTS, 316–13 YAMAGUCHI, TOKOROZAWA-SHI, SAITAMA-KEN JAPAN.

AAA WANTED: I PAY SAME PRICES FOR all tubes listed by Japanese's ad and also look for Western Electric Amps, Mixers, Consoles, Drivers, Tweeters, Horns, Speakers, Parts, Etc., and Old Tannoy Speakers and McIntosh, Marantz Tube Type Amps.

ATTACK 1

Te1. (818) 576-2642. David, POB 832 Montery Park, CA 91754.

WANTED: VERY GOOD ATWATER KENT model "E" speaker. Quentin Galbraith, 4303 Kingsway, Farmington, NM 87401.

WANTED - WANTED BUYERS (CASH) FOR A 45 YEAR ACCUMULATION AND COL-LECTION OF OLD RADIOS, SPEAKERS, TUBES, PARTS, TEST EQUIPMENT, METERS, SERVICE MANUALS AND RADIO PAPER, MAGAZINES, A FEW TRUCK LOADS NO LISTS BUYER TO REMOVE AND TAKE ALONG, KRANTZ, 100 OSAGE AVENUE, SOMERDALE, NJ 08083. (609) 783-0400.

WANTED: KARLSON SPEAKER ENCLOSURE IN RELATIVELY GOOD CODITION. MARK SKINNER, 1420 ANNA ROAD, PEKIN, IL 61554. (309) 353-1882.

WANTED: BRASS OR FANCY decorated paneled radios, fancy cathedrals, horns in excellent or mint condition, 1 tube sets and WD 11 tubes. Rod Stidham, 4011 South 286th, Auburn, WA 98001.

SCOTT COLLECTOR NEEDS SCOTT 12 two dial parts, escutcheon, knobs and cabinet. Wanted to buy Scott Philharmonic. Denis Yanko, 410 N. Summit, Oconomowoc, WI 53066, (414) 965-3641. Collect after 5:00 .cst.

WANTED: VERY GOOD R.C.A. MODEL 103 SPEAKER. WILL PAY \$90.00 FOR SPEAKER IF IN MINT CONDITION. LET ME KNOW WHAT YOU HAVE. WOULD LIK TO BUY THE BEST ONE I CAN GET. QUOTE YOUR PRICE AND CONDITION. RON BURTZOS, 915 CRANE, DEKALB, IL 60115.

SCOTT: SCOTT RADIO COLLECTOR wants to purchase Scott Philharmonic, any version. Also, would anyone with a Scott Napier Consoltte, please contact me. I have a question concerning it. Denis Yanko, (414) 964-3641 collect after 5:00 cst., 410 N. Summit, Oconomowoc, WI 53066.

SPHERICAL or TUBULAR AUDION, #5514 transmitting tube. top for Radiola 106 speaker. Early light bulbs. Will buy or trade for tubes. Harbeck, 13408 Westwood Ln., Omaha, NE 68144.

WANTED: 1924 GOLDEN - LEUTZ 9 tube Super Pliodyne. also, any information on Raven Radio 12 tube superhet. Duane Bylund, 5133 West 5400 South SLC, Utah 84118, (801) 967-6987.

WANTED: SOURCE FOR ASTATIC OR RCA CARTRIDGE AND NEEDLE FOR 1950'S RCA PHONO. DAVID HAMMON, 1117 EAST FIRST STREET, LONG BEACH, CA 90802



Classified ad only 15 cents per word. Photo ad only \$5.00 extra. THE HORN SPEAKER

1985



NORTH ROVALTON OH -44133 9951 SUNRISE BLUD #R-9 MR. GARY B. SCHNEIDER **51285 *73*