

THE HORN SPEAKER

THE NEWSPAPER FOR
THE HOBBYIST OF VINTAGE
ELECTRONICS AND SOUND

The Simplest and Most Efficient Wave Detectors and How Amateurs Can Make Them

By J. STUART FREEMAN.

The possibility of transmitting electric waves without wires has been known to exist, since Hertz in 1887, performed his well-known experiment with a spark coil and an incomplete metal hoop. It was some years later, however, before Marconi gave the world the wireless telegraph, the result of long years of experimental and research work. This was

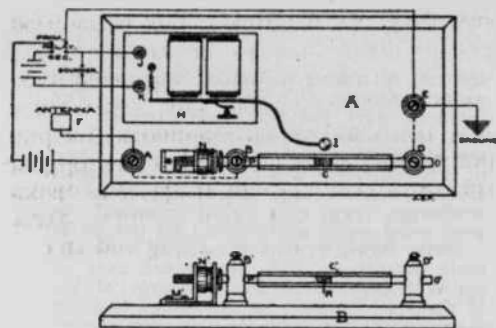


FIG. 1.

looked upon as one of the greatest mysteries of the age, while now, although just as wonderful, it is spoken of with more or less intelligence by even the layman.

But how many of the countless millions who have electric bells, medical coils, etc., in their very homes, realize that they are surrounded constantly by these unseen, silent, mysterious waves of the ether in which they live? For every time a caller presses our push button and the clapper of the bell vibrates, there are set in motion countless impulses in the surrounding medium which, were they intercepted by the right instruments, would sound as loud as the distinct buzzing in an ordinary telephone receiver. "But," you say, "there is the difficulty. Those 'instruments' cost a great deal of money." Yes, that is true in some cases, but it is surprising how many simple and inexpensive devices the experimenter has discovered, during the past few years, that will answer the purpose admirably. For instance, the writer has known of boys in their teens receiving messages in Washington, D. C., sent from Brant Rock, Mass., with no more expensive wave detectors than those he will attempt to describe below.

First, we will look into the construction of a mechanical coherer and de-coherer with which all the pioneer research work was accomplished.

Fig. 1.—(A) is the top view of one of these, made on the plan of the original Marconi type and (B) of the same figure is the elevation of the coherer alone. (C) is a piece of glass tubing $1\frac{1}{2}$ " in length, $\frac{1}{8}$ " inner diameter, and of sufficient strength to withstand the tapping of the metal ball, (I). Inside of this tube are fitted two pieces of brass nicked-plated rod (O' and P') preferably, and as snugly as possible. (O') is clamped fast by the binding post (D'), while (P') has a thread on it—or is soldered to the head of a dry battery binding post—and can be adjusted by the nut (N'). After the proper adjustment of this is obtained, the binding post (B') clamps it in its correct position.

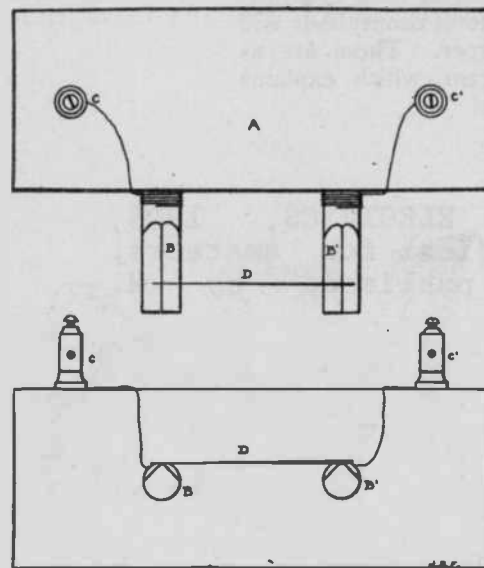


FIG. 2.

Experimenters have found that either one or both of the rods should be made to slant on the inside end, as shown in the diagram. This insures better contact of the filings with the electrodes and admits of more efficient setting. The adjusting mechanism the writer made in its simplest and most economical form:

(M') is a piece of bent sheet brass, $\frac{3}{8}$ " wide, with holes drilled in it for the screws and the rod (I')—or bolt, as suggested above—and the set screw (N') is taken from a dry battery binding post. The bell (H) is of any type employing a vibrating tapper with a ball (I) on the end. The gong is better removed to eliminate the unnecessary noise. At (R) are placed coarse nickel and silver filings in the proportion of 96% of the former

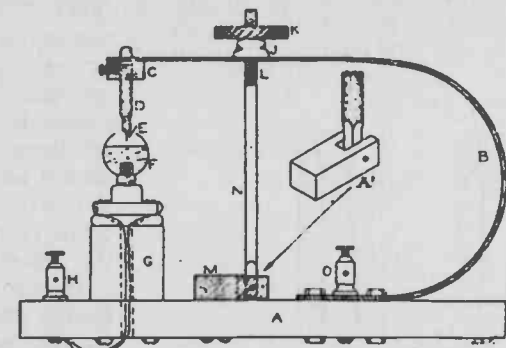


FIG. 3.

to 4% of the latter. To add to the sensitiveness of the instrument, the ends of the rods (O' and P') should be slightly amalgamated with mercury.

This coherer is one of the simplest and most serviceable for the receipt of slow messages. Its arrangement in the electric circuit is shown in the drawing.

For the reception of fast telegraphic messages, and especially for long distances over which the oscillations are very weak, auto-coherers should be used. In these decoherence takes place immediately upon the cessation of the impulses. Of the various forms tried, the electrolytic ones have been proven to be the most serviceable. But, before taking up the latter, we will describe a few of the former that have been given considerable entertainment to amateurs and experimenters.

In general the same instrument is used as that represented by Fig. 1-B, without a de-coherer. Also the inner ends of the electrodes are cut off squarely, instead of slantingly. And, in every case, the tube and its contents should be absolutely dry.

In one style a small globule of mercury, a little less in diameter than the bore of the tube, is placed in the tube with a half dozen or so fairly large pieces of graphite placed on each side to keep the metal rods from coming into direct contact with the mercury. However, if graphite or carbon electrodes are employed, no filings are necessary. The electrodes in every case are run together until a very faint buzzing sound takes place in the telephone receiver, and, if finely adjusted, this style is especially serviceable.

Another form contains only granulated graphite between carbon plugs. Still another employs aluminum filings and electrodes of the same metal.

Of the auto-coherers other than electrolytic, there is one type in which practically no adjustment is necessary. When used in very weak, long-distance work, success cannot be assured, but in lectures and experimental work exceedingly fine results have been obtained with it.

Fig. 2 shows a top and front view of this form and it will be seen that it is simply a "microphone" coherer.

(A) is a solid block of dry, hard wood with holes drilled into the front and into which are wedged two electric light carbons (B and B'). These are fitted so that a cross-section taken near the outer ends resembles an inverted "V" with the angle slightly rounded. From these, wires are run to binding posts (C and C') on top. To make the instrument complete, a steel darning needle is lightly laid across the carbons so that only a very slight sound is audible in the telephone receiver.

Of the various kinds of auto-coherers and methods of adjusting the same, the one represented by Fig. 3 has been proved to be the most reliable by the United States navy, and is now in use in most of, if not all, its land stations.

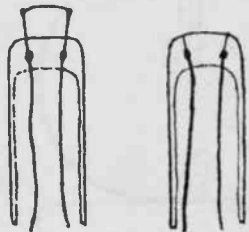
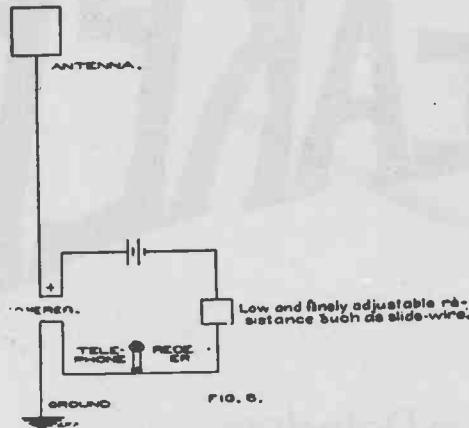


FIG. 4.

The figure is a sketch of a wave detector made by the writer on the plan of the one used in the Washington navy yard. It is very delicate, though easily and cheaply made, and, when not in use, the needle should be raised and the whole instrument shunted from the main circuit to protect it from heavy, near-by oscillations, principally those of the local station when sending.

In the diagram, (A) is a firm base with slight or negligible vibration. (B) is a rather stiff piece of spring brass 1/2" in width and 15" long. One end of this is fastened securely to the base, while on the other end is soldered an oblong binding post (C) which holds the short metal rod (D), into the end of which is soldered a piece of fine platinum wire (E), sharply pointed. The platinum point dips into some form of glass vessel con-

taining the electrolyte, supported on a base (G) of hard rubber, fibre or hard wood. The simplest form of vessel is a broken miniature incandescent lamp (F) with a small hole made in the top and all of the filament, cement and protruding lengths of the platinum "leading-in" wires removed, as in Fig. 4. This lamp can stand in its regular porcelain receptacle and from the binding screws of the same, wires are run to the binding post (H).



At a convenient distance between the base (G) and the binding post (O), some form of anchorage is located for the adjusting rod (N). (A' of Fig. 3 is an isometric projection of one simple form.) Directly above (M) is a hole, drilled in (B) with a hollow bushing (J) soldered over it. The brass rod (N) is 1/8" in diameter and 8" long, with a fine thread on the upper end. The brass wheel (K) is at least 1 1/2" in diameter and is threaded so as to revolve easily around the rod (N) on the thread.

This completes the instrument except for the electrolyte in the vessel (F). Very good results have been obtained by the use of a 20% solution of either nitric or sulphuric acid, and neither of these will attack the platinum point to any appreciable degree. In adjusting the instrument, the set screw (K) is revolved slowly until the point (E) barely touches the surface of the electrolyte, which point is recognized by a faint sound in the telephone receiver in the circuit.

In regard to the connections of the coherers described above in their electrical circuits, only the general connections will be given in this paper. These are as shown in the diagram, which explains itself.

From MODERN ELECTRICS, 1908, early periodical for amateurs, which was published by H. Gernsback.

1941

Army Goes FM

THE Army has placed its first large order for FM equipment. It has purchased a considerable number of Link sets—one order was for \$90,000—similar to those being used by police departments, for the Armored Force. Experimental work is continuing on three new types of FM sets and within a short time, more FM orders will be forthcoming. The order which has been placed marks



Maj. E. F. Armstrong willingly gave FM. . . .

the end of a long period of hesitation and experimentation with FM by the Army. The research work has been highly secret. In fact, orders for FM equipment were placed secretly with several manufacturers. Some of this equipment was assembled by General Electric, spirited to a "blind" factory in the northwest, where units for the armored force were being made, and installed for test work.

Major Edwin F. Armstrong, who holds the basic patents on FM, has turned over to the War Department, free of charge, all his 17 patents. Further, he has agreed to make these patents available, for \$1 a year license, to any manufacturer designated by the War Department to make FM equipment for defense. The inventor notified all manufacturers who are now licensed by him and will notify any who take out licenses under the \$1-a-year arrangement, that he will waive all royalties on equipment made for defense purposes.

The FM sets have proven, in actual field tests, to be superior for some types of armored vehicles, in which static has always been a serious problem. In the hope that FM may be more widely adopted in the Army, research is being intensified toward two ends. One is to narrow the band—the wide band required has been the principal drawback in Army use—and the other is to reduce the number of quartz crystals required, because of the difficulty in getting such crystals now.

Note: It was while he was with the A. E. F., three months before the Armistice was signed, that Major Armstrong perfected the invention which was to make his fortune, the superheterodyne receiver.

RADIO NEWS

May, 1941

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ANTIQUE RADIO LABORATORIES
R1, Box 41, Cutler, Indiana 46920
Phone 317-268-2214

Dear Radio Collector,

I was 15 years old in 1931 when I saw the circuit diagram of a one tube radio in my science book. I decided right then to make radio my hobby. In high school, I took Vocational Electric shop as my Major. My instructor had previously been the Chief Engineer of the Diamond "T" Radio Company in South Bend, Indiana. He told me that when I finished the required class work, I could then study radio theory. Of course I was building and experimenting with radios in my home workshop.

I won't bore you with the different directions my career in radio took during the next 35 years. In 1970, I decided to spend my spare time helping radio collectors enjoy their hobby. I published "Antique Radio Topics" for 8 years and from 1973 to 1981 I wrote a column titled "Antique Radio Corner" that was published in Elementary Electronics magazine. The magazine is now out of business.

I am now retired from the Mallory Timers Co. after 25 years of service. I will spend all of my time working at home operating the Antique Radio Laboratories. My address is R1, Box 41, Cutler, IN 46920. My phone number is 317-268-2214. I will be happy to talk to you most any time, but we cannot accept collect calls.

Below is a list of parts and services we will offer. Send 75¢ for our latest catalog.

Jim Fred

RELAY RACKS and CABINETS: good, used Bud relay racks and cabinets. Most are hammertone gray and measure from 1 foot to 6 foot in height. Prices range from \$5.00 to \$50.00.

TRANSFORMERS and INDUCTORS: we have ½ ton of new and good, used power transformers and choke coils. All are tested, many are hermetically sealed military surplus, many are new, unused. There is everything from 2.5 volt filament types to 10,000 volt oil burner ignition transformers. Prices range from \$5.00 to \$20.00 depending on age, condition and voltage output.

CAPACITORS: fixed capacitors from mica receiving types, old, used, tested for breakdown and capacity before shipping, to high voltage mica transmitter types. Also oil filled paper filter capacitors up to 3000 volts D.C. rating. Electrolytic capacitors rated at 450 VDC in various sizes. We check capacity on a B-K digital capacitor meter. We have variable capacitors, both old and modern, single, two and three gang. Most are receiving types, but we can remove plates to increase voltage breakdown, or make whatever value you need. We have a Boonton Q-meter and the B-K meter to make any value you need.

VACUUM TUBES: our tubes range in age from 1927 to 1970. Our selection includes new and used, tested radio, TV and transmitting types. We have around 5,000 tubes in stock from 4,5,6 7 pin, loctals, octals, 7 and 9 pin miniatures to Compactrons. Prices range from 25¢ each in quantities of 100 to \$10.00 each.

LABORATORY SERVICES: our services include copying circuit diagrams from old books and magazines, designing one-of-a-kind coils, inductors, and electronic assemblies. We will make replica parts, and replacement parts for antique radios and transmitters.

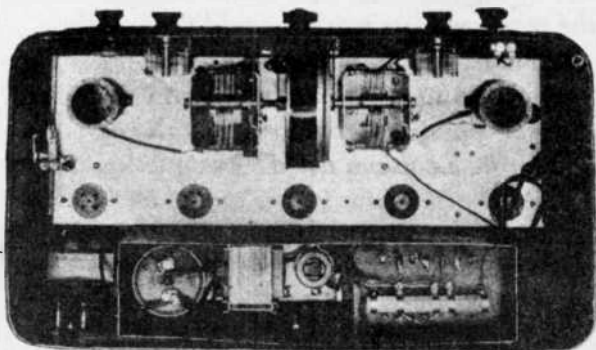
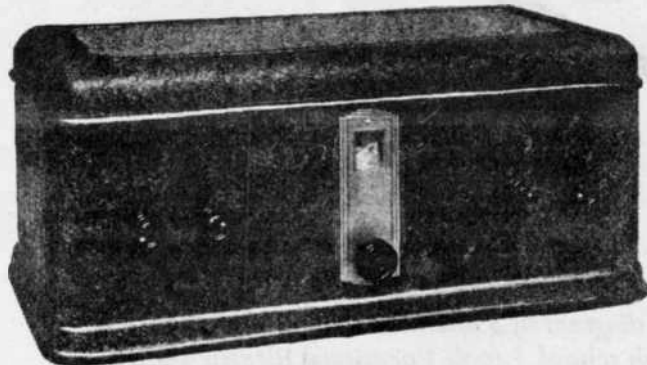
WD-11 ADAPTERS: we manufacture adapters and tube bases to replace WD-11 tubes. We can manufacture on special order many other types of adapters so that you can get your radio to play.

All prices are quoted F.O.B. Cutler, Indiana. Write for prices, availability, delivery and shipping information. We will try to increase your enjoyment in the radio hobby.

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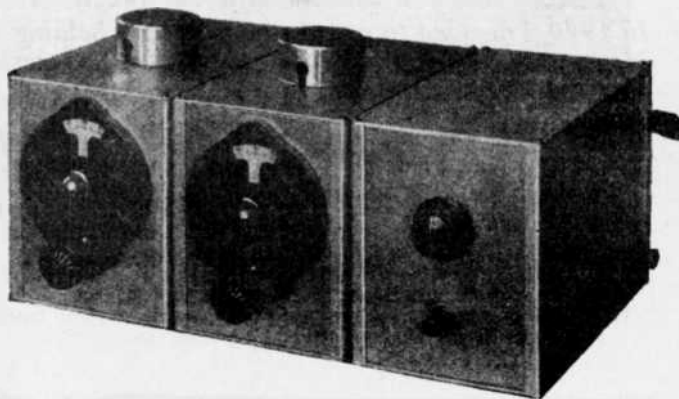
RADIO NEWS FOR JUNE, 1930

To Bring YOU The Thrills of Short-

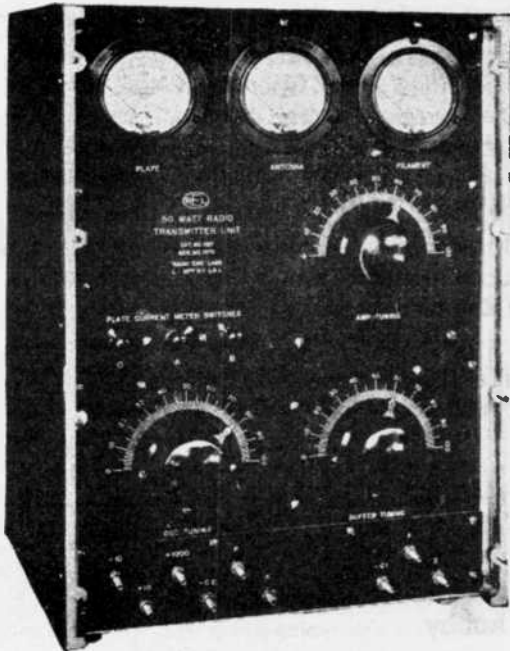


Two views of the Short-Wave and Television Laboratory's one dial a.c. operated short-wave receiver are shown above. The receiver has two tuned circuits, one a tuned radio-frequency stage employing a -24 a.c. screen-grid tube, the other a detector stage employing a -27 heater type a.c. operated tube. Plug-in coils, of course, are employed so as to enable the operator to change from one wave-band to another. The receiver proper is chassis-constructed allowing placement of bypass condensers, resistors, etc., underneath the chassis, while only the tuning elements and tubes are located above. To the rear of the chassis, as shown, is located the power supply unit. Special precautions have been taken in the construction of this unit to reduce the hum to a minimum by the use of husky chokes and electrolytic mershon condensers

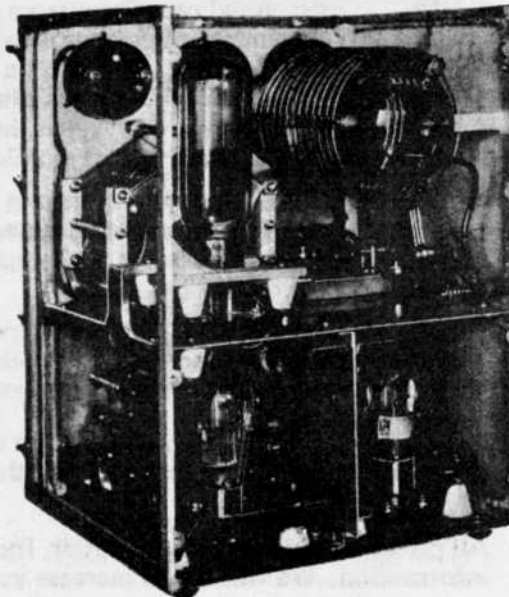
HERE are some of the short-wave transmitters and receivers, complete and in kit form, which you may use in listening to foreign stations. In America you can be a radio neighbor of Argentines, the Portuguese, the Armenians and the Greeks. Whereas, if you live abroad and are not enthusiastic about your local broadcasting, you may have the United States programs literally at your finger tips. The transmitters and receivers illustrated on these pages incorporate the very latest of design features, such as single tuning control, complete a.c. operation, portability and flexibility of wavelength range. Most of the receivers include a stage of tuned radio-frequency amplification employing the screen-grid tube.



One of the most popular short-wave receiver kits, placed on the market by Wireless Egert Engineering, Inc., is their S-W Four. This receiver, built in three sections as shown above, employs one stage of tuned radio-frequency amplification, a regenerative detector and two stages of transformer-coupled audio-frequency amplification. The radio-frequency amplifier stage utilizes a d.c. screen-grid tube thereby obtaining a high order radio-frequency amplification



The two photographs immediately to the right and left illustrate a 50-watt short-wave transmitter unit, manufactured by the Radio Engineering Laboratories, Inc., especially designed for aircraft use. The wavelength range of this transmitter is from 45 to 95 meters. The circuit of the transmitter employs a standard master oscillator which may be either crystal-controlled or self-excited

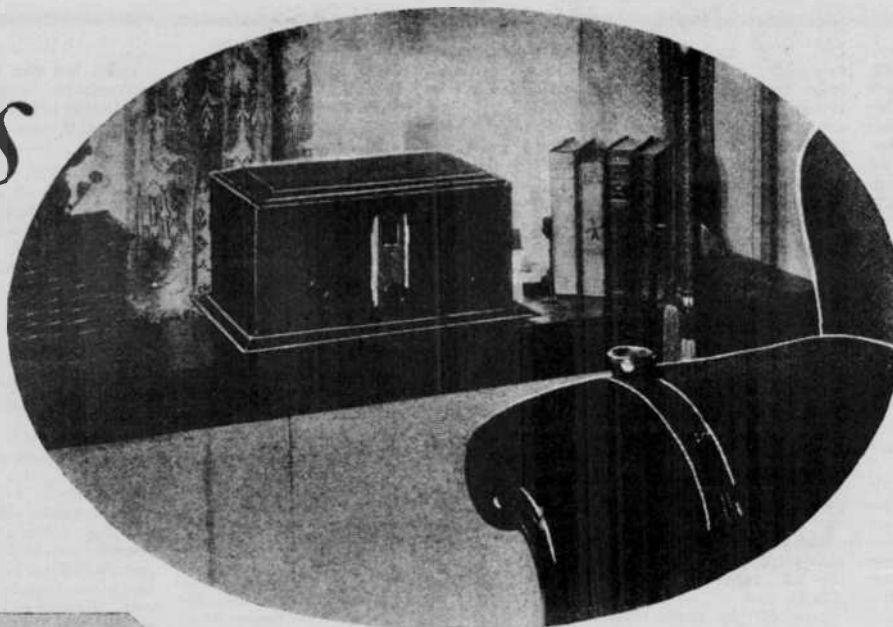


RADIO NEWS FOR JUNE, 1930

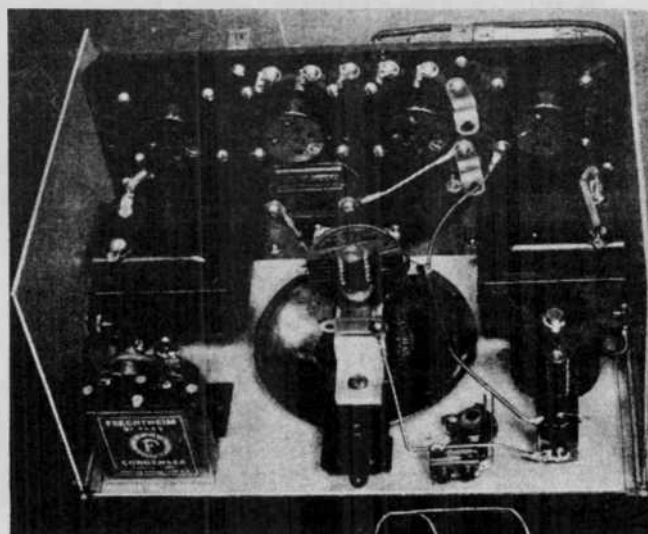
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Waves

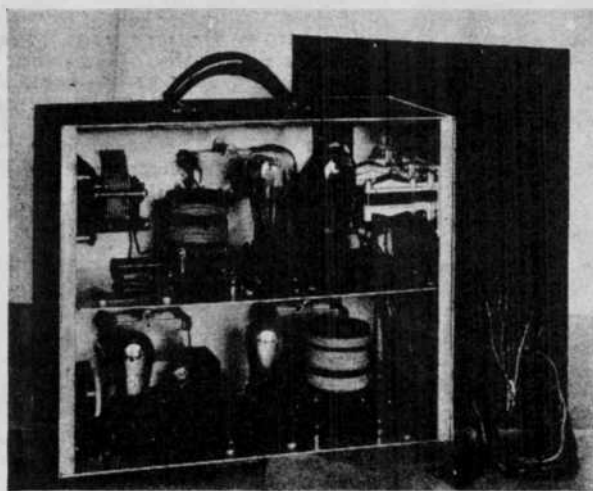
The National Company, Inc., has both an a.c. and d.c. short-wave receiver kit, known as the Thrill Box. This receiver employs an untuned stage of radio-frequency amplification utilizing a screen-grid tube and a resistance controlled regenerative detector. In addition to the two tuned stages there are two stages of transformer-coupled audio-frequency amplification



Another short-wave kit job, the Pilot A.C. Super Wasp, is also available for home assembly. Its manufacturer is the Pilot Radio and Tube Corporation. The receiver employs one tuned stage of screen-grid radio-frequency amplification, a regenerative detector and two stages of audio-frequency amplification. The two tuned stages are completely shielded, each one being housed in its own metal shield can



An inside view of the DeForest short-wave receiver is shown above. Four tubes are employed. They are: -22, -01A and two -12A tubes. The over-all dimensions of the receiver are: 8 inches long, 6 inches high and 5 inches deep



Another product of the Radio Engineering Laboratories, Inc., is their low-powered combination transmitter and receiver. A rear view of this apparatus is shown above. In the upper compartment is shown the transmitter which employs a type -10 tube in a conventional self-excited circuit. It is modulated either by another -10 or by a -50 modulator tube. Either phone or code transmission is permissible with this transmitter. The receiver of this combination, shown in the lower compartment, employs two tubes, one as the conventional detector circuit and the other as a first-stage audio-frequency amplifier



The DeForest short-wave receiver, shown above, covers a range of from 20 to 200 meters. As indicated, the coil unit plugs into a receptacle mounted on the top of the cabinet. Tuning is obtained by the single dial

Here is the outside or panel view of the Radio Engineering Laboratories, Inc., combination short-wave transmitter-receiver. Only one tuning control is required for the transmitter while for the receiver the regular tuning and regeneration controls are provided

ANALYSES of RADIO RECEIVER SYMPTOMS OPERATING NOTES

Kolster K-70, K-72, K-80, K-82, K-90. Noisy tuning, and circuit oscillation are frequent causes for complaint on these models. In some cases, tuning is very erratic. Invariably, the trouble has been found due to corroded condenser-gang rotor contacts. This may be corrected by cleaning the contacts and bending them to increase their tension. A pigtail should be installed between rotor shaft and chassis for a permanent repair.

When an inoperative receiver is encountered, which functions as soon as the A.V.C. 24A tube is withdrawn from its socket, but with distortion and no control of volume, check the 2-meg. A.V.C. gridleak for an open-circuited condition. In the models 90 and 92, the normal value for this resistor is 1 meg.

An insensitive receiver with almost total inoperation on the less powerful stations is usually the result of excessive control-grid bias on the R.F. and I.F. tubes. In some very few cases, replacement of the A.V.C. tube will overcome the trouble, especially with a tube having low emission, since the lowered plate current will produce a lower voltage drop across the 2-meg. resistor connected from the plate of the A.V.C. tube to ground. However, it has been found necessary in the majority of instances, to reduce the value of this A.V.C. plate resistor to 1 meg. or even lower, so as to decrease the voltage drop and consequently the control-grid bias on the R.F. and I.F. tubes. It is inadvisable

to employ a resistor whose value is lower than 0.5-meg. as the plate load resistor, since (a) the inability to properly control volume and (b) insufficient A.V.C. action will be noted. It has been found best to reduce the value of both the A.V.C. plate resistor and grid resistor, until satisfactory operation results.

When the receiver operates at maximum volume but with a certain degree of distortion, with the volume control being ineffective, check the continuity of the A.V.C. grid circuit with respect to chassis. This requires an ohmmeter capable of measuring resistance values to at least 1 meg. Leakage in the insulated terminal brackets employed in the A.V.C. grid circuit is the cause for the condition described.

Highly distorted reception at any volume level, with the attendant circumstance of no A.V.C. action, is due to an open-circuited A.V.C. grid-coupling condenser—a 500-mmf. unit connected between the plate of the I.F. tube and the grid of the A.V.C. 24A.

One of the most common complaints with these models lies with the time lag of the volume control. By this is meant that a moment or two is required for the volume to build up or vice versa, as the volume control is manipulated, unless the latter is rotated very slowly and deliberately. The trouble is overcome to some extent by decreasing the value of the A.V.C. plate resistor as mentioned above; but by replacing the R.F. and I.F. grid filter con-

densers with lower-value units, but not lower than 0.01-mf., the condition is partially remedied. Lowering the value of the grid filter resistors will also lower the time constant of the A.V.C.

In the models K-70, and K-72, when an inoperative receiver is serviced and plate and screen-grid voltages on all tubes but the A.V.C. tube are found lower than normal, and a reading of more than 250 V. is obtained on the cathode of the A.V.C. tube rather than the normal 50 V., check the 200-ohm section of the voltage divider for an open-circuit.

Circuit oscillation, motorboating, and the condition wherein rattling sounds are produced upon vibration of the chassis or when weak stations are tuned-in, have been traced to poorly grounded coil shields resulting from loose or oxidized shield rivets. The remedy is obvious, we hope.

Lyric SA-91, SA-99, 900. These models are frequently serviced for the complaint of no inter-station noise suppression. The silent tuning system operates by biasing the 1st-audio 57 to cut off when no signal is being received. When it is found that adjustment of the manual noise-suppressor control produces little, if any at all, effect upon inter-station noise, look for a leaky or short-circuited 1st-audio cathode bypass condenser, a 10-mf. electrolytic unit. The failure of this condenser not only produces the symptoms de-

scribed, but also introduces a highly microphonic condition which can be eliminated only by slightly de-tuning the station selector.

Lyric SA91, 99, 900. The complaint of circuit oscillation, particularly at the higher frequencies, has been found to be caused by an open-circuited 0.5-mf. condenser bypassing the R.F., first detector and I.F. screen-grid circuits and oscillator plate circuit. This unit is of the usual tubular type, the open circuit being produced by poor internal contact of the pigtail leads.

When these receivers are serviced for an inoperative condition and the plates of the 80-type rectifier heat excessively, check the I.F. transformers for a short-circuit between the primary winding and shield. These transformers are of the thimble type. In some cases, insufficient insulating compound within the assembly, or loosening of the compound due to heat, causes the primary winding to contact the shield can. Replacement is not always essential as the transformer may be removed from the can by the application of some heat, and replaced after the shield has been lined with a sheet of insulating paper.

Lyric SA-120, 1200. Failure to obtain inter-station noise suppression, as with the model SA-91, may be traced to a leaky or short-circuited 1st-audio cathode bypass

condenser, a 5-mf. electrolytic unit. A highly microphonic condition will also result when this condenser breaks down, as well as a motorboating hum that is heard as soon as the manual noise-suppressor control is turned even slightly counter clockwise.

The complaint of reception cutting off sharply, and the presence of circuit oscillation and motorboating throughout the entire tuning range have been frequently traced to an open-circuited screen-grid bypass condenser, a 0.5-mf. tubular unit.

Lyric SA-133, 1300. When these receivers are serviced for a loud hum which develops as the tubes reach their normal operating temperature, and the grids of the 2A5 tubes glow red, check for a grounded R.F. choke in the high-voltage secondary circuit.

A loud, disturbing arcing that is heard at high volume levels is caused by the voice coils arcing over to the field-magnet pole pieces. If cleaning and re-centering the voice coils do not overcome this difficulty, try connecting a 50-ohm resistor from the ungrounded side of the output transformer secondary to ground. Should this cut volume down too much or the arcing-over is still present, decrease or increase the value of this resistor, as the case may be.

BERTHAM M. FREED.

RADIO, ELECTRONIC ITEMS FOR SALE

MASTER Piece VI McMurdo - Silver Corp. in custom walnut cabinet, 47 1/4 in. h., 44 in. w., 15 1/4 in. deep, orig. book with it & alignment instructions, 21 tubes in the radio, works good. Taking bids on this radio, picture \$1. Taking bids on it. Dennis Devine, 722 E. Pierce St., Co. Bluffs, Iowa 51501. (712) 323-5233 (12)



PUETT ELECTRONICS

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OLD TIME
RADIO SHOWS



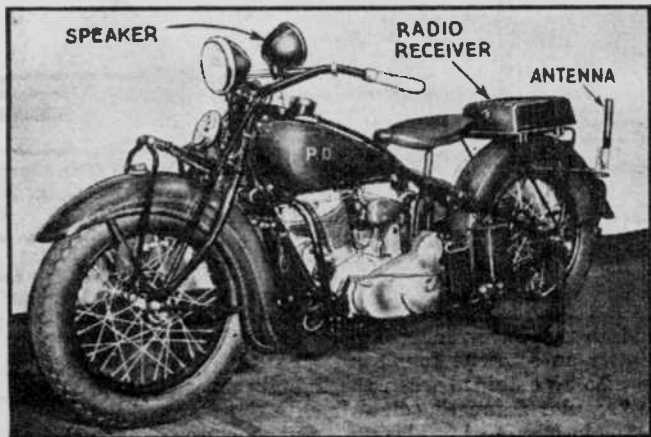
THE ANTIQUE RADIO RESTORATION HANDBOOK
RADIO NEWS
SHORT WAVE Radio Manual
RADIO APPARATUS
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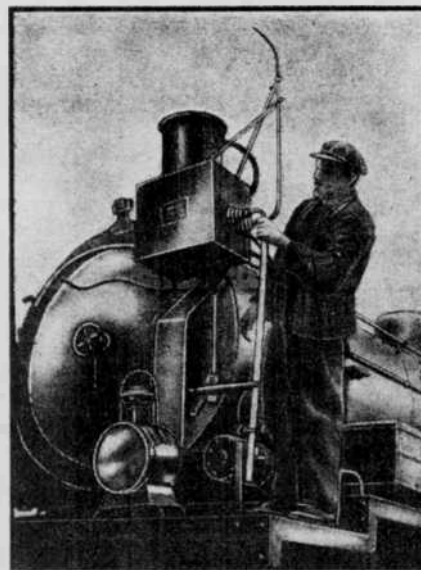
DEVELOPMENTS IN SHORT-WAVE RADIO

S.-W. MOTOR-CYCLE POLICE

YOU see illustrated, below, the newest in radio-equipped motorcycles (a bicycle of course may be similarly equipped) for the minions of the Law. This is the "1937" set-up; but what will "1938" offer? In many parts of the United States large areas are policed ex-

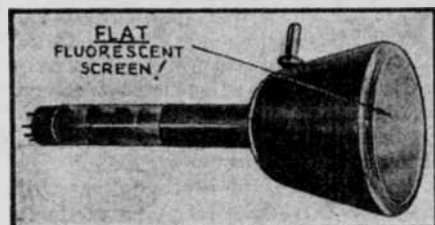


clusively by motorcycle policemen who, in an emergency, whiz from place to place in almost nothing flat! A few seconds saved may mean apprehension, for, TIME is crime's greatest foe! A practical 2-WAY RADIO SYSTEM, such as RADIO-CRAFT'S artist has shown, in colors, on the cover of this issue is to be desired as a means of almost instantly receiving AND TRANSMITTING vital police data. An ultra-short wave "transceiver" (2-way radio set), with a microphone that operates reversibly as a loud-speaker (see November RADIO-CRAFT, pg. 272), is depicted. This magazine predicts that soon, perhaps by this time next year, some such set-up will be in operation; just as, throughout the country, 2-way "radio prowl cars" are now in use. It is impossible to stress too greatly the importance of 2-way radio equipment as a means of maintaining immediate and continuous contact between police agencies.



TRAIN S.-W. RADIO

FRANCE now has short-wave transmitting and receiving equipment installed on trains in service between Rouen and Paris. As shown, above, a doublet antenna system is installed on the locomotive. The system was instituted as a means of affording communication, almost instantly, between train crew and signal stations nearby but beyond sight or sound. It's said to be working perfectly. Although such communication facilities may be desirable on passenger trains, the major merit of the present set-up is in freight service.

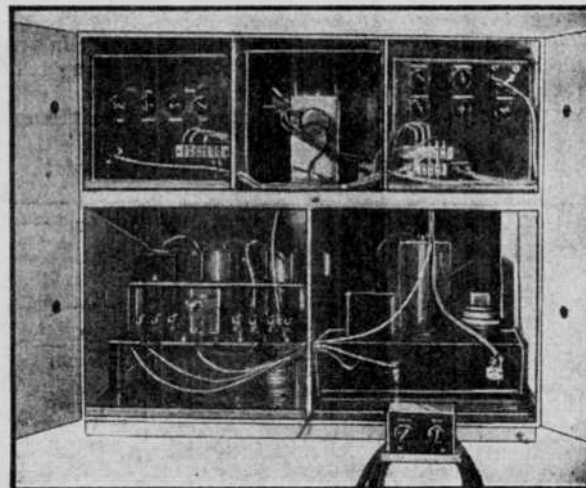
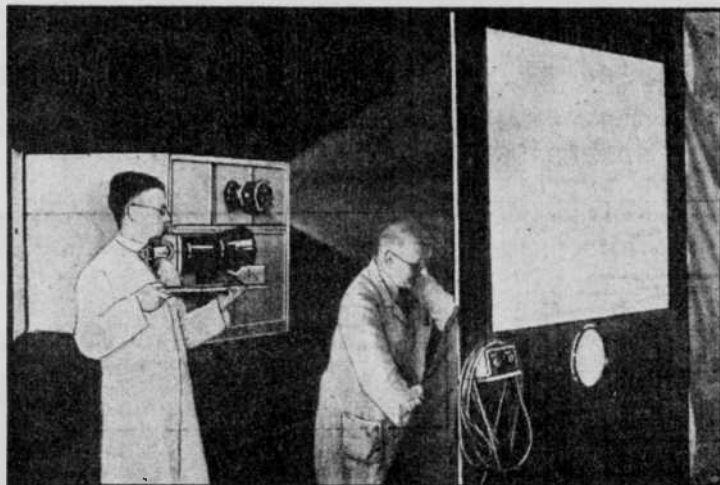


NEW HIGH-INTENSITY CATHODE-RAY TUBE EFFECTS TELEVISION THEATRE

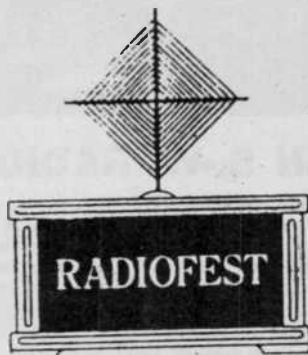
BERLIN (Germany) movie theatres plan to present, as an intermission novelty, televised news events in screen size. An entirely new design in cathode-ray tubes has made this possible. The Telefunken Co. has accomplished the seeming impossibility in producing a cathode-ray tube (shown at upper left) that, with 20,000 volts, is so intensely bright it cannot be observed, at the flattened end, without injury to one's eyes; and permits enlargement through the usual lens system to a screen size of 3 x 4 ft. Previously, too, cathode-

ray tubes were curved on the end to withstand the several tons (total) pressure exerted by the outside air. As this curvature was a serious source of aberration in projection-type television, a new glass, developed in the United States, is used; and ground absolutely flat! Front and rear views of the theatre unit appear below.

The new "high-intensity" type cathode-ray tube that makes this "television theatre" possible, with definition of better than 400 lines, if desired, is shown in hand (left), and housed (right).

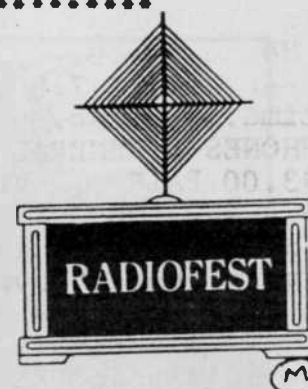


club news



.....

THE
 ANTIQUE RADIO CLUB OF ILLINOIS
 AN AFFILIATE OF
 THE ANTIQUE RADIO CLUB OF AMERICA
 IN CO-OPERATION WITH
 THE INDIANA HISTORICAL RADIO SOCIETY
 AND
 THE MID-AMERICA ANTIQUE RADIO CLUB
 PRESENTS



RADIOFEST '83

AUGUST 13, 1983 at the HOLIDAY INN,
 345 RIVER RD, ELGIN, ILL. (Route 31 South, exit from the I-90
 Northwest Tollway--turn left at first stop light).

THE PROGRAM

- I. ALL DAY SWAP-SELL SESSION
- II. SEVERAL TECH SESSIONS INCLUDING: " HOW MUCH IS THAT OLD RADIO WORTH?"
- III. RADIO CONTEST--CATAGORIES
 - CLASS I--REGENATIVE RECEIVERS
 - CLASS II-- TRF RECEIVERS
 - CLASS III--CRYSTAL SETS--1920 TO PRESENT
 - CLASS IV--CATHEDRAL SETS
 - CLASS V--PRE-1920 RECEIVERS
 - CLASS VI--CONSOLES
 - CLASS VII--ZENITH RECEIVERS--1922 TO PRESENT
 - CLASS VIII--ADVERTISING

CONTEST ENTRIES MUST BE IN THE CONTEST ROOM BY 11:00 A.M.

- IV. SATURDAY NIGHT: BANQUET AND AWARDS PRESENTATION PLUS AN INTERESTING PROGRAM.

.....

REGISTRATION: PRE-REGISTRATION \$2.00--REGISTRATION ON THE DAY OF MEET \$3.00

BANQUET TICKETS: \$10.50

MOTEL ROOMS: HOLIDAY INN IS OFFERING US A 10% ON ROOMS-- CONTACT THEM AT THE ABOVE ADDRESS OR CALL 312-695-5000 AND REQUEST RESERVATIONS FOR RADIOFEST '83.

.....

EARLY BIRDS--ENJOY A RECEPTION FRIDAY EVENING HOSTED BY ARCI STAY OVER SUNDAY AND ATTEND THE SANTA FE HAMFEST (ONE OF THE LARGEST IN THE COUNTRY) DIRECTIONS AT THE MEET.

.....

YES, I PLAN TO ATTEND THE MEET

YES**NO** I PLAN TO ATTEND THE BANQUET

MAKE BANQUET AND PRE-REGISTRATION CHECKS TO: ARCI AND SEND TO: JOE WILLIS--525 OAKDALE #524--CHICAGO, ILL. 60657

IF POSSIBLE, PLEASE REPLY BY APRIL 30th.

PILOT SUPER-WASP

Complete with 11 tubes, ready to operate (no kits in factory built form only)



The 1932 SUPER-WASP—the latest model of the internationally famous receiver for short wave and broadcast reception. On the short waves it is a double superheterodyne of eleven tubes, working on two intermediate frequencies: 550 kc. and 175 kc. Has full throated dynamic speaker. Brings in the foreign stations with unbelievable volume.

letters

Dear Jim,

Do you have any information about a Northland radio, manufactured in Minneapolis, Minnesota. This unit is in a desk type cabinet and has a woodsey scene printed on the

bakelite front panel of the radio portion. This is a beautiful unit but the tuning condensers were made of cast aluminum and have fallen apart (strange). Also both audio transformers are open (primary and secondary). It has a built in horn speaker.

I got this unit at an auction earlier this year, it has all OLA tubes in it.

Thank you,
Lawrence C. Steeno
2728 42nd Street
Two Rivers, WI
54241

WINTER SEASON 1983 --- OLDE TYME RADIO COMPANY ---- 2445 Lyttonsville Road, Silver Spring, MD 20910. (301) 585-8776. -- After 7:00 p.m. local time. No. 183 - 1. HEADPHONES .GENERAL SERVICE --- \$3.00 PAIR . VINTAGE pair \$6.50. - 2. OLD STYLE REPLACEMENT SPEAKERS both ed and pm. Sizes vary from 2" ovals to 10" rounds. Send us your needs for quote. - 3. ELECTROLYTIC CAPACITORS . 60 UF at 250V 50 cents ea or 3 / \$1.00 . Many types -send us your needs and we will send quote . 40 uf (small size axial leads) 220V \$1.00 ea or 3 / \$2.75 . Screw base (large) 40 x 40 uf at 450V \$3.00 each . cap. bonanza 20pf to 0.1 uf 25 / \$1.00 - 4. WIRE DEPT. . 6 COND. AK style battery cable \$1.25 / ft. . 5 cond. AK style battery cable \$1.00 ft. . Brown silk type power cord .30 / Ft. . #20 magnet wire double cotton wrap 80 ft. roll \$3.50 . Single conductor green cloth covered wire- for olde tyme radio coils .20 / ft. . Single conductor black cloth covered olde tyme radio hookup wire 12 cents / ft. . Single conductor # 18 bare copper wire (stranded) .25 / ft. - 5 VOLUME CONTROLS 1/4" SHAFT 10 ohm to 1.0 meg. \$1.25 ea or 3 / \$3.00 - 6 Escutcheon screws- guage length respectively 0-1/4", 0-3/8", 1-1/4", 1-3/8", 2-1/4*", 2-3/8" 10 for 50 cents. BRASS, FLAT OR ROUND HEADS *round head only - - 7. Exact replacement Radiola II or VIII leather handle. only \$4.50. - 8. OLDE TYME RADIO TUBES tubes from the 20's thru the 60's used / tested or new. Write for quote. - 9 COILS ANT, RF, OSC and IF manufactured by Meissner, Caron, Miller, etc. \$3.50 ea. Special or multiple band coils higher-write. -10. Slip over coils for ant. and-RF

coils. Provide us with diameter of your defective coil form \$1.50 each. - 11. USED POWER TRANSFORMERS Send us make and model of radio. Also need size of old transformer. We will quote. - 12. We cannot provide WD-11's but we can provide WD-11A's made with 864's in WD-11 bases. Work better than WD-11. \$15.00 each or 2 for \$25.00. - 13. DIAL LAMPS - any type. 25 cent each or 5 for \$1.00. - 14. Crystal set items .galena xtals \$1.50 each . xtal detector ass'y w/xtal \$3.50 each . unmounted xtal detector ass'y without xtal \$2.00 each. - 15. Headphone replacement cords (black) . Brandes and Baldwin types \$4.35 each . Olde tyme speaker replacement (black \$3.50 ea, bwn \$4.00 ea) cords . pin jack 25 cents each or 5/\$1.00 -16. Schematics for sets manufactured from 1920 thru 1946 \$1.50 for complete data package \$2.50. We also have schematics and data for some early TV sets. Complete data package \$3.00 to \$5.00, depending on number of pages. Write- we will quote. - 17. Olde tyme instrument knobs 25 cents each or 5/\$1.00 - 18. Fahnestock clips 15 cents each or 8 for \$1.00 - 19. Stancor output transformers primary imp. 2,000 ohms secondary imp. 3.2 ohms. Good for matching triode to speaker. \$2.50 each. - 20. Olde tyme phone plug. Will accept headphone tip jacks. \$1.85 each - 21. RESISTOR LINE CORD REPLACEMENT KIT . TYPE RLC-1 FOR 4 TUBE SETS WITH (2) 6.3V PLUS (2) 25V TUBES \$3.50 EA . TYPE RLC-2 FOR 5 TUBE SETS WITH (3) 6.3V PLUS (2) 25V TUBES \$4.50 - 22. Padder capacitors for BC superhets \$1.25 each OR 2 for \$1.75 - 23. Olde tyme spaghetti assorted sizes and colors. package\$3.00 -24. Tie down term-

inals- 3 terminals 10 cents each or 15 for \$1.00 - 25. OLDE TYME AC PLUGS. These hard to find old style AC plugs only \$1.10 ea or 2 for \$2.95 Get them while they last. - 26. Olde tyme toggle switch with short bat with ball \$1.85 each. Good for AK-37, etc. Radiola 17, 18, etc. - 27. SPEAKER GRILL CLOTH, 2 PATTERNS.. \$3.25 SQUARE FOOT. SEND FOR SAMPLE. - 28. WHITE TUBE CARTONS- type A size 2x2x6 20cents ea type B 1 1/2 x 1 1/2 x 5 18 cents ea type C 1 1/4 x 1 1/4 x 3 3/4 16 cents ea type D 1x1x3 15 cents ea-- Discounts given when ordering large quantities. - 29. AUDIO TRANSFORMERS We now have a sttock of Stancor A53C audios, but due to high procurement costs we are forced to set the price at \$12.00 each. IF YOU DON'T SEE IT, ASK WE HAVE MUCH MORE, BUT CAN NOT LIST EVERYTHING IN THIS FLYER. OUR SHIPPING POLICY ----- We ask that you send sufficient funds to cover shipping and handling costs. Handling charge is levied to cover the cost of jiffy bag, boxes, gasoline (10 miles each way to UPS). Overages if under \$1.00 will be credited to future orders or refunded if requested. Overages over \$1.00 will be returned with your order when it is shipped. Unless specified otherwise, orders weighing 1 lb. and under will be mailed. Orders over 1 lb. will be shipped by UPS. When making inquiries, please send S.A.S.E. and give invoice numbers when possible. OLDE TYME RADIO GUARANTEE Anything we sell is unconditionally guaranteed. If not satisfied, just return it and your money will be returned to you at once. SERVICING RECEIVERS FOR OVER 30 YEARS PHONE (301) 585-8776 after 7:00 p.m. local time.

Dear Sirs,

I was informed that some of your readers consist of people who have hobbies and interest in old radios.

I have owned an old Majestic floor model radio for many years and recently decided to try and have it repaired. The shop that I took the radio to had a fire which destroyed everything, including the chassis of my radio. However, I still have the cabinet. I was wondering if it would be possible through your newspaper in locating a chassis and speaker for my cabinet.

The information that I took off the plate in the cabinet reads: Majestic Radio Receiver. Model 90, Grigsby Grunow Company, Chicago, U.S.A.

I think it's about a 1935. Any help or advice would be greatly appreciated. Thank you.

Gus Galiardo
P. O. Box 1719
Burney, California
96013

Dear Jim,

A fellow collector has found several small glass bottles that are 4 1/2 inches high and 1 1/2 inches at the base. They look like the small old fashioned milk bottles.

Embossed in the glass is the signatue of Thomas A. Edison. Also on the bottle are the words "Edison Battery Oil," plus the company's address.

We would like like to know all we can about these bottles. Never heard of "battery oil." Are they valuable?

George Friedrich
7162 Jacqueline Ln.
Custer, Wisconsin
54423

Dear Jim,

I just had something happen to me that made me very angry and mad. I answered a wanted ad for a fellow collector for a coil wanted and date on a tube tester. I wrote to this collector and told him that I could supply the parts and give him a price. I got a check from him. 10 days later I got a letter from demanding to know where his parts were and what did what did I do with his check? If you order something allow at least 30 days before you write a nasty letter.

Thank you,
Frank Krantz
100 Osage Avenue
Somerdale, NJ
08083

Sir:

I would appreciate your renewing my subscription to THE HORN SPEAKER for another year. I enjoy this magazine very much even though I am ignorant of electronics. I understand from college physics, etc., the principles of electronics, but nothing about the practical application of such. I don't understand my fascination unless it's nostalgia, but it's there.

I do have a favor to ask. Could you refer me to someone whom I could correspond with who is interested in or has printed materials concerning commercial and shortwave broadcasting schedules of the 20's and 30's and forties? I was a child in the forties but I can remember well many of the programs such as The Telephone Hour, Voice of Firestone, Swinging Sam (Coca Cola), etc. Do you suppose I would get a response if I placed an ad in THE HORN SPEAKER?

I do have a wonderful mint 1926 nine tube radio, but cannot find anyone to help me repair it if it needs such (and to get a power source (A, B and C). Many thanks.....

Sincerely,
Edward T. Hall
1810 Monroe drive, N.E.
Atlanta, Georgia 30324

CLASSIFIED

* FOR SALE *

RCS- 728 POWER SUPPLY for battery radios now available in kit or assembled form. Gary Schneider, 9951 Sunrise Blvd., #R-9, North Royalton, OH 44133.

W. E. 10D HORN, WORKS -- \$75.
Radiola UZ-1325 horn, not working -- \$20. Philmore crystal set, works -- \$30. Four 00-A's, good filaments -- \$10. Two filaments on top 401-A's, work -- \$20. Sterling R-401 tester -- \$15. Mohawk battery receiver, 1926, works -- \$30. Murdock 1913 varible condenser -- \$40. Shipping extra. S.A.S.E. Harrison, 1021 Falcon Drive, Columbia, MO 65201.

FOR SALE- CATHEDRAL, BATTERY and A.C. radios. Send SASE with two stamps. J. Albert Warren, Box 279, Waverly, PA 18471

E. H. SCOTT, PHILHARMONIC FM-AM Chippendale cabinet, AW23, Metropolitan, projection TV. Beautiful Brunswick Panatropé radio phonograph, Victor 10-50 phonograph, Radiola 67, RCA model TLS864 commercial projection TV circa 1948, Joe Halser, 2222 South K.K. Avenue, Milwaukee, WI 53207 1-414-744-8825

IF YOU'RE NOT ON OUR MAILING list, you'll miss our great new Spring Catalog. Tubes, radios, books, service literature and many one-of-a-kind items. Send several first class stamps now for our next several catalogs. THE OLD RADIO PLACE, 616 NELSON ST., ROCKVILLE, MD 20850

52 YEARS EXPERIENCE in radio service, repair, design and laboratory service. How can you trust your radio with anyone else? James Fred, Cutler, IN 46920

PARAGON RA-10, Clean. Absolutely beautiful \$650.00; Trav-ler poprtable with loop in lid \$150.00; Crosley 51. Immaculate \$95.00; Workrite Super Neutrodyne. Looks good, not tested \$50.00; Shure broadcast "big band" type cardoid mike \$45.00. All plus UPS. Paul C. Crum, 6272 N. Cicero Avenue, Chicago, IL 60646. (312) 282-3033

RADIO SERVICE MANUALS, RIDERS, HOWARD SAMS, RCA, PHILCO, ZENITH. PLUS OTHERS. SASE FOR LIST SM83, KRANTZ, 100 OSAGE AVENUE, SOMERDALE, NJ 08083

OLD RADIO PARTS ASST. \$20.00 prepaid. Round temple speaker \$12.50. Airline chassis w/tubes, round dial \$10.00
Wanted: SQUARE BASE FOR M4 MAG. HORN. Wanted: chassis for Grebe Synchronphase. JOHN MARTIN, 817 COOK AVENUE, BILLINGS, MT 59101

(1) PYE RADIO MADE IN Cambridge England 1928. (1) Crosley 51, 2 tube radio. (1) RCA Radiola Super 8. Russell Schoen, R. #1, Box 224, Clintonville, WI 54929

300 ISSUES OF LATE 1940'S and early 1950's magazines, Radio Electronics, Radio and Television News, Radio Craft, Radio Television Electronics, .75 each F.O.B. Nashville, Larry Chambers, 5026 Suter Drive, Nashville, TN 37211

WANTED

WANTED: 21 INCH OAK OR MAHOGANY MUSIC MASTER BELL. CONDITION NOT IMPORTANT. CHARLIE STEWART, 900 GRANDVIEW AVENUE, RENO, NV 89503

WANTED: ATWATER KENT CONDENSERS variable, detector and amplifier tube panel and filament control and switch panel. William L. Compton, 11 Harbor Woods Drive, Clearwater, FL 33519.

WANTED: SCOTT COIL SHIELD CANS (late copper type). Musicmaster radio in deluxe cabinet; Philco Pup radio. Dick Howe, 9318 Wickford, Houston, TX 77024.

WANTED: SE950, SE143, SE1400 and other SE series sets, type B amp.. BC131, BC161, and other BC series, SCR equipment, Leutz, Norden Hauck, any GR parts, VT1, VT2, VT5 tubes. Incomplete sets OK. Also Grebe CR equipment. Ray Garner, Route 1 Box 320, Big Sandy, TN 38221.

RCA VICTROLA CREDENZA 8-30. EDISON OPERA. HMV 202, 203. Western Electric tubes, amps, mixers, consoles, networks, drivers, tweeters, horns, speakers, parts. Tel: (213) 576-2642. David Yo, POB 832, Monterey Park, CA 91754.

WANTED BY ART DECO RADIO DEALER in France, mirrored sets, colour bakelite, chrome or any interesting items, in very good condition only from years 1930 to 1950. Highest prices paid as well as crating and freight. Write with photo to 1900-2000 Gallery-8, Rue Bonaparte, 75006 PARIS-FRANCE

COLLECTOR INTERESTED IN PURCHASE OR TRADE FOR EARLY PARAGON AND ADAMS MORGAN EQUIPMENT AND LITERATURE. ALSO WANT EARLY YEARS WIRELESS AGE, QST, RADIO NEWS. PLEASE CONTACT R. S. RENNE, 1020 IDLEWILD, DIXON, IL 61021 OR (815) 288-4701 AFTER 5 P.M.

WANTED: EARLY BATTERY RADIO PARTS, ALSO JUNKER PANELS/ BASEBOARDS FOR STRIPPING. BROKEN PANELS OK, BUT DO NOT WANT ANY CABINETS. SEND LIST AND PRICES TO: BOB, W6ME, 4178 CHASIN STREET, OCEANSIDE, CA 92056

This Month's Bargains From ARS

GET THEM WHILE THEY LAST. ALL ITEMS SUBJECT TO PRIOR SALE.

RIDER MANUALS VOLUMES XV, XVII, XVIII just \$7 ea.

RIDER RADIO INDEX BOOKS VOLUMES XI, XI-XII just 25¢ ea.

RIDER TV INDEX 10¢

RIDER: HOW IT WORKS (Radio or TV) 25¢

RIDER: SPECIAL SECTION TO VOLUME IV 25¢

ARS' RADIO MATH FOR COLLECTORS now just 25¢

Supreme Publications

MOST-OFTEN-NEEDED RADIO AND TELEVISION MANUALS just 50¢ ea.

RADIO		TV	
1941	1950	1949	1962 Late
1942	1960	1950	1963
1948	1961	1951	1964 50¢
1950	1962	1953	1969
1951	1963	1954	1969 Color
1952	1964	1955 Early	1970 Color
1953	1965	1955 Late	TV Servicing Course
1954	1966	1956	
1956	1967-69	1957	
1958	Auto Radio	1958	
Practical Radio for War Training		1959 Early	
		1959 Late	
		1960	

ROYAL MANUAL TYPEWRITER circa 1930's just \$19.

ANTIQUE BRASS FIRE EXTINGUISHER JUST \$9.

TEN POUNDS OF TECHNICAL BOOKS, MAGAZINES AND SERVICING INFO. for \$4.

TEN POUNDS OF RADIO/ELECTRONIC PARTS: METERS, PLUGS, RESISTORS, SPEAKERS, SWITCHES, TRANSFORMERS, ETC. \$8.

TWENTY POUNDS OF OLDER BOOKS (pre 1940) \$8

TEN POUNDS OF TOOLS (screwdrivers, pliers, saws, etc.) \$8

TWENTY ASSORTED SAMS PHOTOFACTS \$5.

FIVE AC LINE CORDS for 75¢

PUSH BUTTON TELEPHONE WITH RINGER, CORD, PLUG \$19

ROTARY DESK TELEPHONE WITH RINGER, CORD & PLUG \$8

FIVE VERY OLD PHOTOGRAPHS SHOWING INTERESTING SCENES INCLUDING OLD CARS, ETC. \$1

SUPREME PUBLICATIONS COMPLETE INDEX Covers radio and TV. \$4

ONE HUNDRED ASSORTED RESISTORS INCLUDING WIRE WOUND \$1

OLD WALL CLOCK \$4

TEN POUNDS OF HARDWARE: Screws, bolts, nuts, brackets, rivets, washers, screw eyes, springs, etc. \$8

COILED PHONE CORDS, five for \$1

COAXIAL ANTENNA CABLE 100 ft. for \$5

ANTIQUE RADIO "LOOK" COOKIE JAR. BRAND NEW UNUSUAL ITEM. \$15.

TAKE ADVANTAGE OF THESE SUPER BARGAINS NOW. NO CHARGE FOR DOMESTIC POSTAGE - IF YOUR ORDER TOTALS MORE THAN \$5. PLEASE ADD \$1 IF YOUR ORDER IS UNDER \$5.

NAME _____
 ADDRESS _____
 CITY _____ STATE _____ ZIP _____

ARS electronics
 646 Kenilworth Terrace
 Kenilworth, Illinois 60043

-Please send me the latest ARS catalog. (Free with order, 40¢ otherwise) US FUNDS ONLY. ALL ITEMS SUBJECT TO PRIOR SALE. OFFER EXPIRES 5/3/83.

classified ad

Please print and punctuate. Clip and Mail

Box 53012, Dallas, Texas 75253

THE HORN SPEAKER

Classification _____

10 cents per word

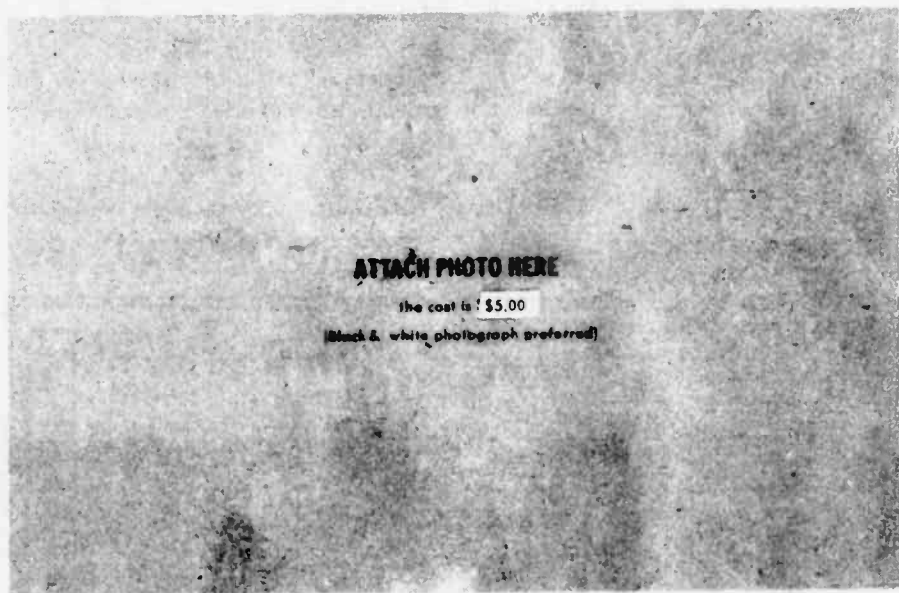
Number of words _____ Number of issues _____ Amount Enclosed _____

Important: Box number ads require name and address of advertiser for our confidential files.

THE HORN SPEAKER

PHOTO AD

**SELLS
THE EASY INEXPENSIVE WAY**



A series of horizontal lines for writing an advertisement, consisting of 10 rows and 4 columns.

\$5.00

Box 53012, Dallas, Texas 75253

Classified ad only 10 cents per word. Photo ad \$5.00 extra.

APRIL

THE HORN SPEAKER

1983



1923

MR. GLENN MC CROCK
9224 WEST SIXTH
STORM LAKE IA - 50568
**5983
73