Vol.XVI No. 7 September 1987 Second class postage paid at Dallas, Texas Postal identification statement, page 2
Published by Jim Cranshaw, N5FSL Monthly except July and August
Price $10.00 yearly Single issue $1.50 Published since 1972
(214) 286-1673

THE HORN SPEAKER

BROADCASTING THE BIG BANDS

BROADCASTING THE BIG BANDS

by paul C. Crum

Probably few of those persons who listened to the music of Guy Lombardo or Paul Whiteman on their Atwater Kents or Majestic "Mighty Monarchs of the Air," during the mid thirties, had any appreciable idea of the technical equipment required, or of those complexities of putting them on the air that were required of the young and adventuresome remote broadcast engineers of that period.

There are many now alive who enjoyed the thrill of sitting at their tables in night clubs or hotels in hushed expectancy as they paused in their dinners and watched the beginning of one of these broadcasts. Rows of musicians arranged in military precision, waited for the baton of the leader to signal their beginning.

It was my own good fortune to be a small and humble part of those times. As a remote engineer of that era, it was my privilege to assist by putting - and trying to keep - on the air those bands that made that period. As one of those remote engineers who worked these broadcasts, and had this thrill of anticipation many dozens of times, I once told a friend that each time I felt this hush at air time, and when the swell that followed came, it seemed that the hair on my arms bristled as I held the controls of my amplifier, blending the instruments as they rushed together in their mighty chorus that rose up and seemed to, like a powerful magnetic force, draw the dancers onto the floor.

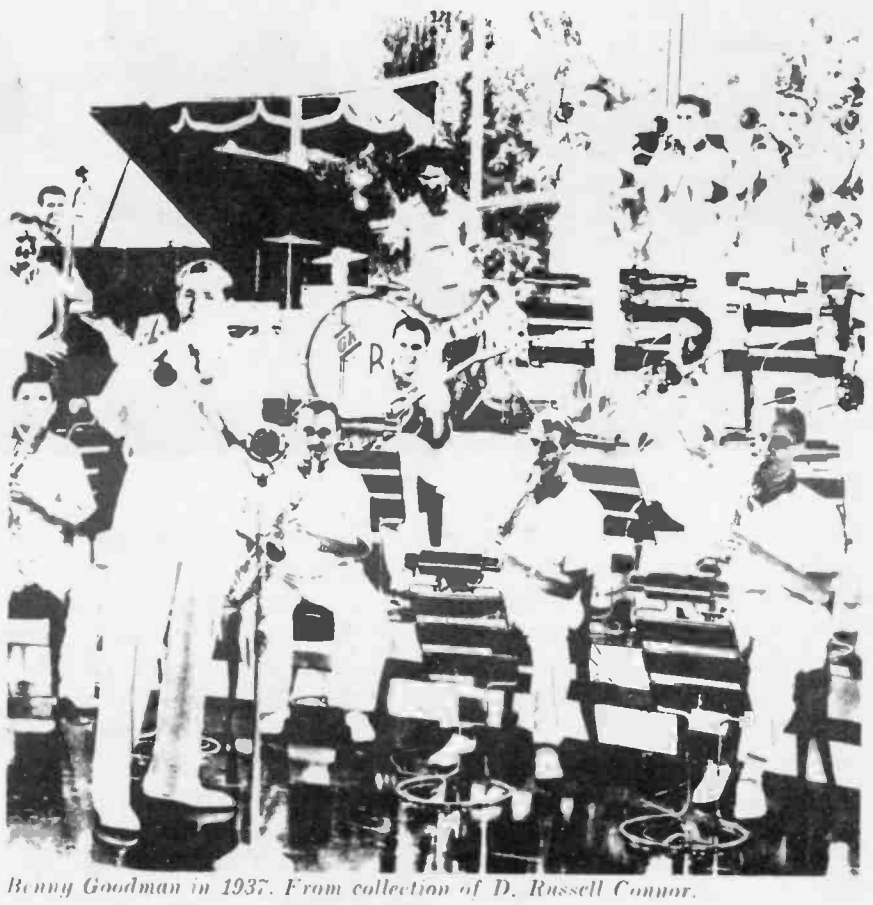
The music, itself, seemed to conspire to carry on the feeling. The theme finished, the band usually swung into a lighter and somewhat faster first number such as "Sweethearts on Parade," to establish the up beat mood for the dance. With no disjointed frenetic

Wayne King, "The Waltz King," played the Aragon Ballroom in Chicago on the north side in the early 1930s, while Lawrence Welk appeared at the Trianon in the south, in the heyday of big bands.

numbers included, such tunes as Glenn Miller's signature, "Moonlight Serenade" followed and almost always during the dance, the classic Cole Porter "Star Dust."

In the interest of my maintaining whatever moral integrity I am suppose to possess, I will confess that even we had our lighter moments and might even on - rare occasions - give out with a few less formal numbers such as Dorsey's "Boogie Woogie," followed by "Mairzy Doats, Flat Foot Floogie with the Floy Floy" and a soft seque into one of our slow serious numbers, "Who Slapped Annie on the Fanny with a Flounder?"

Receivers that used the new type 247 pentode output tube, with speakers whose field coils were energized by the tube's plate current flowing through them, while also acting as the filter choke,



Benny Goodman in 1937. From collection of D. Russell Connor.

Harry James in 1944. From collection of Leo Walker.

Top (from left to right) Wayne King, Ted Weems, Mark Fisher, Abe Lyman. Bottom: Cab Calloway, Harry Sosnik, Vincent Lopez and Ted Fio-Rita.

provided the thumping, booming bass popular during that period, that was not available only a few years earlier. Great strides had also been made in broadcasting equipment in general, with MOPA transmitters replacing the modulated self-excited oscillator transmitters common only a few years before. These now used crystal oscillators which permitted frequency accuracy much greater than the 500 cycles previously permitted. MOPA transmitters also made possible 100% modulation that was impossible with self-excited oscillators.

The receiver configuration had also made possible improved audio frequency response. As an earlier Horn Speaker article outlined, reasonably good frequency response was comparatively easy to obtain. Low frequencies were more difficult, due mainly to two things; the difficulty in coupling the speaker diaphragm to the air efficiently at low frequencies and the poor magnets that were available at that time. The use of electromagnets (the speaker field coils) and the use of large diameter cone diaphragms, produced the bass that had not been available before.

My own membership in this happy and adventuresome group came about through my employment at WGN - "The World's Greatest Newspaper," in Chicago. WGN was unsurpassed in either quality or quanity for dance band broadcasts at that time. Itself, projecting a signal that quite well blanketed the country, it fed a network of dozens of stations from coast to coast. All of the popular bands of the period sought Chicago bookings for on the air exposure provided by these broadcasts.

Experienced in originating and broadcasting these bands, WGN developed a technique and a system previously unknown. The harum scarum methods previously used to pick up dance orchestras, were discarded and a sophisticated and orderly procedure became the acknowledged standard of the industry.

Although my job was basically technical, and I liked these things that I was involved with in this operation, many of those things that remote engineers were involved with, were of a more personal, and sometimes dramatic, nature, many of them decidedly pleasant. Quite early I got some indication of these "interesting" possibilities when Pat, an older man, took me to the Palmer House Hotel for my breaking in session. Employees of such glamour spots were usually chosen for the appearance they presented to the patrons, in addition to their more utilitarian capabilities. The check room of the Empire Room of this hotel was "manned" by a bevy (I wonder why a group of attractive young ladies is so often referred to as a "bevy") of attractive leggy blondes. All of those who know me, will readily agree that I do not possess characteristics to cause the other gender to passionately pursue me. Yet my friend who obviously did possess many of these desirable characteristics, provided a simple, but effective introduction: "Girls, I'd like for you to meet a friend of mine. He just started at the station and I'd like for you to see that he is taken care of as well as you have taken care of me." I will say here that I was made to feel very welcome. Ingi, a lithe, leggy wench of pleasing configuration, greeted me even more warmly than the others and even extended me the hospitality of inviting me up to her apartment - I suppose she was going to make coffee, or something

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 address changes to; THE HORN SPEAKER, P. O. Box 53012, Dallas, TX 75253

- after we were off the air. I will add in all modesty that certain verbal inducements were made that made her offer of hospitality sound like one of those offers that "one can't refuse." Because my wife - although we were not married at the time - proof reads practically all of the manuscripts that go through this typewriter, I will hasten to add that I did not accept the invitation.

Each remote installation has as its basic unit, a line amplifier capable of supplying "zero level" to the telephone lines that carried the remote program back to the station. At that time, we were still using the old six milliwatt reference for zero level and used "VIs" instead of the "VU" meters now in use. Most of our line amplifiers were holdovers from the days when carbon button microphones were used and they required separate pre amps for each low level microphone.

Each of these preamplifiers required its own separate power supply, a box containing the necessary dry A and B batteries for the dry battery tubes. Particularly in those installations still using older type line amplifiers, the number of batteries required was quite considerable. Such a pickup using, for instance, a couple of dynamic and one condenser microphone, might require a dozen or more B batteries with low voltage batteries for the filaments. WGN's use of Burgess batteries, must have contributed very appreciately to the 1936 economy of Freeport, Illinois, home of this manufacturer.

Later on, newer commercial AC operated line amplifiers came into use. While these assisted greatly in that they contained their own built-in preamps and the separate array of these amplifiers with their batteries was not required, they brought other difficulties, when used in the Chicago loop. At that time, much of the loop area was still wired for DC, as per Mr. Edison. This required a dynamotor, called a rotary converter, which ran off 110 volts DC and gave 110 AC to the amplifier.

Double button microphones that were used in early broadcast installations had all been replaced by more sophisticated devices for changing sound waves into electrical impluses, by the early thirties. On rare occasions, one of the older carbons was used. In addition to low level hiss being present in its output, the carbon granules in the microphone stuck together after a time due to the current through them. This was the same effect, known as cohering experienced in early coherer detectors. This made it necessary to go around and tap each microphone before each broadcast with a pencil to loosen the packed or "cohering" particles of carbon. Apparent fidelity of these older microphones was surprisingly good and we picked up one very well known string ensemble on such a microphone.

Two main types of newer microphones came into use. The condenser and the dynamic. The earlier of these was the condenser. It may be difficult for present day engineers to understand how early electronics evolved at all, for we had such primitive things as "condensers" rather than actual capacitors, and even measured frequencies by such primitive means as determining their number of cycles per second. Gad! How did we ever get on the air, when we did not even have a single megahertz? It is fortunate that we were not aware of our great technical limitations at he time, for if we had known this - in addition to the technical gymnastics required to keep these tempermental devices on the air - it might have proven too great a challenge to hurdle.

Although condenser microphones are common in modern equipment, and so small as to occupy almost no space, such microphones of the thirties were mechanical marvels that required the ultimate ability of a machinist to produce one. A finely polished plug was spaced .002 of an inch from a duralumin diaphragm and carried about two hundred volts across this gap. Tiny variations in capacity caused by sound waves "impinging" (for some reason, any sound wave worthy of mention, always "impinged" upon a diaphragm) upon a diaphragm, were amplified by pre amplifiers mounted in the cases of these microphones. Housings for these microphones were usually cosmetically dramatic. The RCA version shown in this article and called the "camera microphone" was enclosed in a metal case resembling early box cameras.

Western Electric used several type of mountings. One resembled a mantle clock. Others were hung on metal cylinders resembling stove pipes. Whatever the mounting, a two stage was always included with it, immediately adjoining the mike head. This was necessary because the extremely low output of the microphopne proper, could not not stand the lost in the cable before the first amplifier stage, and also because of the very high impedance, the capacity of the microphone cable would severely short out the higher frequencies. Condenser microphone were soon replaced by dynamic types and were used comparatively little until recent years

With the advent of efficient magnets that made possible their being placed in comparatively small, dynamic microphones soon came into general, and some form of them generally supplanted condenser microphones. Their much lower impedance, made possible connecting them with longer cords without bypassing the higher frequencies. Physical configurations of these dynamics varied greatly. One type was spherical in shape and was understandably called the "eight ball." Another more cylindrical in shape was called the "salt shaker." Although not generally used for remote broadcasts, another dynamic called the "velocity" or "ribbon" became very popular for studio use. As in most areas when persons come into it for the first and do not want to admit their lack of knowledge of it, those unskilled in dance band pickups, assure others that there is nothing to it. "Just set the microphone out in front where it can pick up all of the instruments and let go." Good luck!

Although I had the pleasure of making very extensive experiments with microphone types and placement early in our FM broadcasting, I had nothing to do with developing the "WGN Dance Band Technique," that

"Camera mike" with Ethel Waters

Rudy Vallee, left; Paul Whiteman, above; Ben Bernie, upper right; Jack Denny, below Bernie, and Guy Lombardo

became the standard of the industry and was already in use when I started at the station.

Most persons working in specific technical disciplines have sure ways of identifying one who claims expertise in that area, although he has no actual knowledge of it. Commonly, many of those persons who approach the matter, feel that they have suddenly come upon an idea that is completely revolutionary.

Frequently, men new to radio band pickups, after observing an orchestra pickup, are hit with the idea that those persons who have been in the industry have overlooked a very fundamental principle in determining microphone placement. Their "reasoning" goes that if a person were sitting in a particular location, he would, of course, hear it the way it actually sounded. Therefore, that is certainly where the microphone belongs – back in the audience – rather than up near the instruments. This premise is incorrect in that although people know this, the inanimate and soul-less mechanical microphone diaphragms do not respond to sounds quite like the hammer, anvil and stirrup of the human ear.

Although the setups may have been varied slightly, depending upon such things as the size of the group, instrumentation and acoustics of the location, dance band setups were organized into general sections, the rhythm, and the band or brass reeds and strings. In basic setups, the instruments of the band were grouped together. The reeds, which were usually saxophones, sat in a row along the front and lowest level of the stage. Occasionally, the saxes also switched to clarinets for special breaks. In a few bands, one or more violins came at times for special numbers or passages. On their occasional clarinet solos, the soloists stood and faced the microphone in front of the reed station. The brass which in smaller bands may have been two trumpets and a trombone, sat in a row behind the reeds, and one riser above their level. This placed their much louder instruments much farther from the band microphone and somewhat above it, reducing the level that reached the microphone.

The rhythm section section always had at least a bass drum, along with cymbals, traps, and upon occaision, even novelty devices such as a bulb horn. The drummer was usually somewhat isolated from the main group, either by position or distance. Many carried a gigantic stringed instrument, bass violin or "bull fiddle." Usually rather subdued, the bass moved along almost apologetically, until – when inspired by the demand of a special occasion, it broke forth on its own. Commanding breaks that established its own place in the orzanization came during such numbers as "Take the A Train," which gave the bass player a dramatic opportunity to demonstrate the special characteristics of the instrument.

The drummer was usually the showman of the band. It was expected of him that upon most occasions, he beat the living daylights out of the drum, giving off a wide variety of gadgets ranging from the cymbals to various contraptions around him. Pronounced variety and relief were occasionally provided by soft swishing sounds of his brushes, and punctuated by sharp clacking sounds of the smaller sticks on the snares.

While not a bass instrument, the piano was grouped in the rhythm section. Probably more band leader had the piano as their instrument, than any other instrument. Pianos were usually picked up by placing a dynamic microphone in the opening made by a slightly raised lid of the instrument. One notable exception that I remember was in picking up the piano of band leader Ted Fiorito. For this we used an "eight ball" dynamic directly under the piano.

(Continued next month)

Paul C. Crum
6272 North Cicero Avenue
Chicago, Illinois 60646

Technical Data and Description of a New

16-TUBE *SUPERHET*

(Hammarlund Super-Pro)

By S. G. Taylor

LISTENING POST TESTS

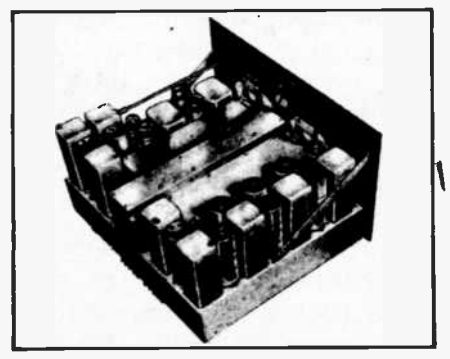
In the author's listening post, in an apartment house where the noise level is high, this receiver has daily been bringing in "Ham" phone stations from all points of the world—and s.w. broadcasters and commercials pound in at all hours of the day and night

IN the winter of 1934 the writer had an opportunity to conduct some "on the air" tests of an early laboratory model of the Hammarlund "Super-Pro." The intervening sixteen months have been spent by the engineers in refining each part and function to the highest possible degree with the result that the final receiver as recently placed on the market is an unusually complete job suitable for dependable use in every type of radio reception service above 540 kc., whether amateur, commercial, regular broadcast or short-wave broadcast.

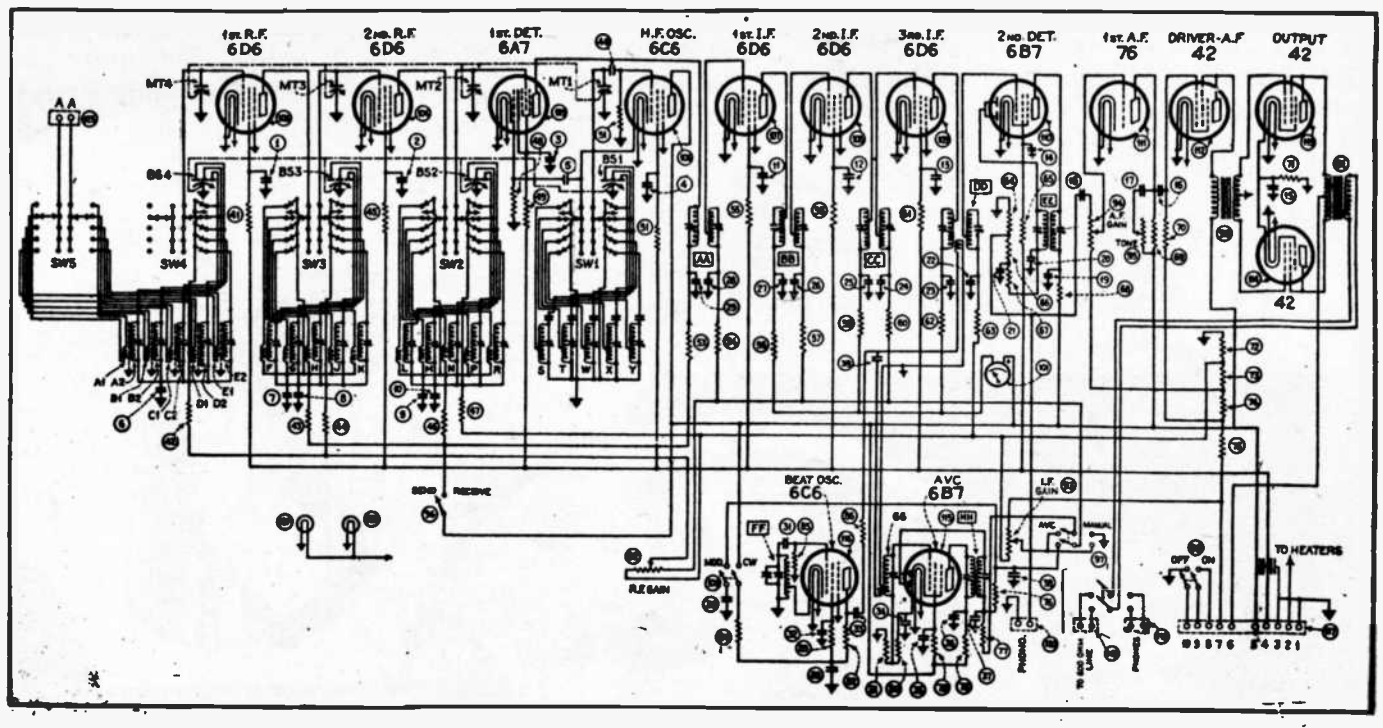
Excellent Fidelity

As a broadcast receiver it provides excellent fidelity together with a degree of sensitivity which represents the maximum that can be used even in good locations. Selectivity is variable ranging from a degree adequately broad to permit excellent fidelity of tone at one extreme, to a sharpness which results in decided side-band cutting at the other extreme. A very effective system of a.v.c. is included but in addition, by flipping a switch; the sensitivity may be controlled manually, and individual controls are provided for r.f. and i.f. sensitivity. This permits any desired balance of i.f. and r.f. gain with the result that the best combination for maximum signal-to-noise ratio is readily attained in any location. With the a.v.c. system in operation, these two types of gain are still subject to manual control to limit sensitivity to a degree permitted by the local noise level.

Primarily the "Super-Pro" is a communications type receiver. All of the features mentioned in connection with the broadcast range likewise apply to all the short-wave ranges. In all there are five bands providing complete coverage from 540 to 20,000 kc. In the three highest ranges, which combined cover from 2500 to 20,000 kc., electrical band-spread tuning is employed. The main tuning dial is used to adjust the receiver to the particular range to be covered then the fine tuning within that range is accomplished by the duplicate tuning control and dial just at the right of the center of the front panel. The bandspread is approximately the same on all frequencies and is equal to about 1 degree per 4½ kilocycles, or 70 kc. per inch of dial scale.



Sixteen tubes are employed, 14 of which are shown on the schematic diagram below. There are two stages of tuned r.f. amplication on all bands, four i.f. stages and three a.f. stages. The a.v.c. system employs a dual-purpose 6B7 tube as a.v.c. amplifier and rectifier. The first detector or mixer is a 6A7 and the r.f. oscillator is a separate 6C6. Another 6C6 is used as a beat-frequency oscillator. The power supply is a separate unit not shown here. It includes a 5Z3 rectifier and a (*Turn to page* 59)

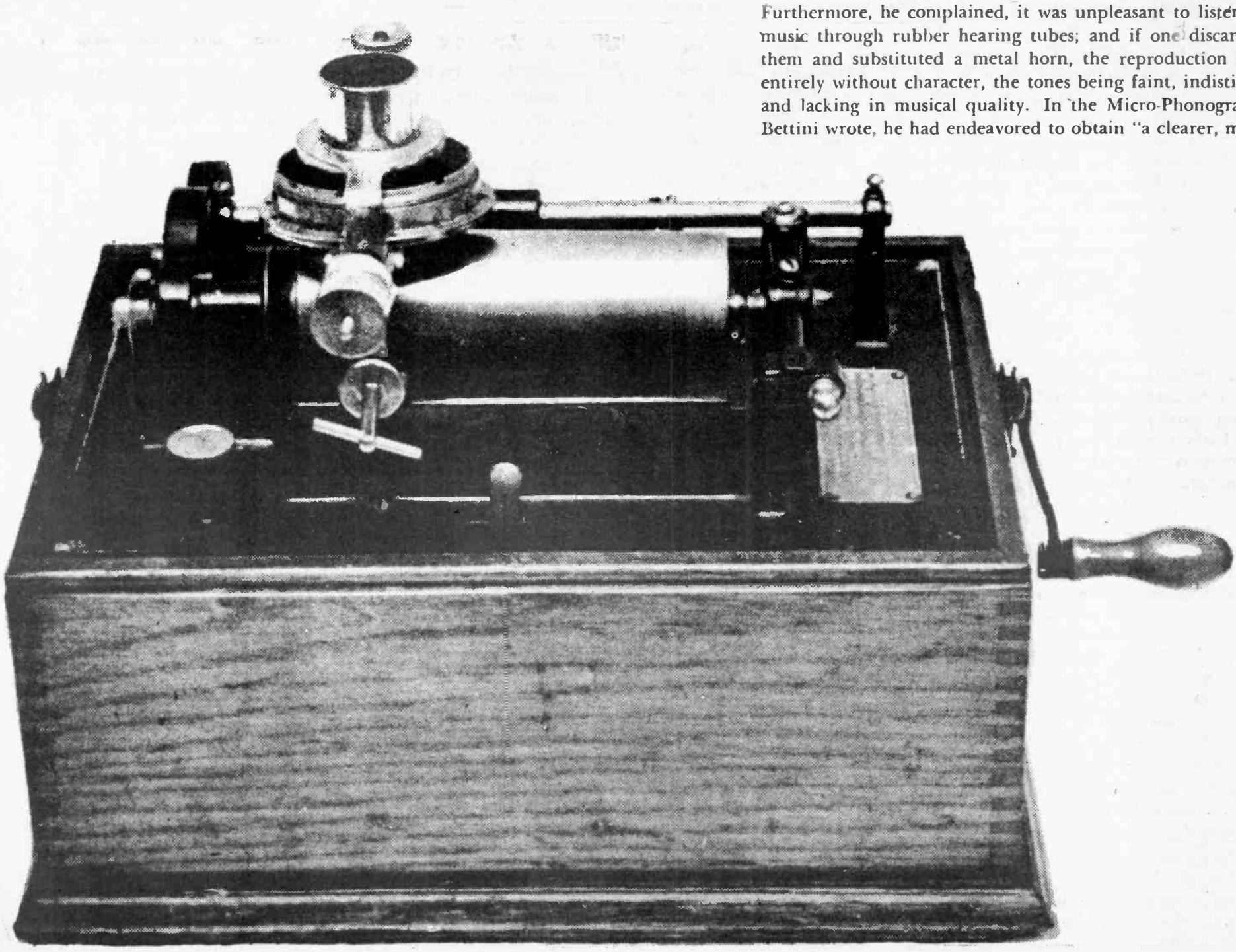


type IV rectifier for the grid-bias supply.

Front panel controls are sufficient in number to provide the utmost flexibility for all types of service. They include r.f. gain, fidelity—selectivity, main tuning, bandspread tuning, i.f. gain, a.f. gain, tone, and beat frequency pitch. In addition there are five switches: send—receive (standby), a.v.c.—manual, c.w.—phone, headphones—speaker and a.c. off-on.

The construction is unusually rugged throughout. The band-change switch was designed especially for this receiver. It is built in five sections, each completely shielded from the others. Each section consists of a double-pole, five-position unit in which silver-plated knives engage spring contacts of silver-plated bronze. Each of these contacts has six separate fingers to insure dependable and low-resistance connections. The switch has no stop and may therefore be rotated in either direction from one position to any other position.

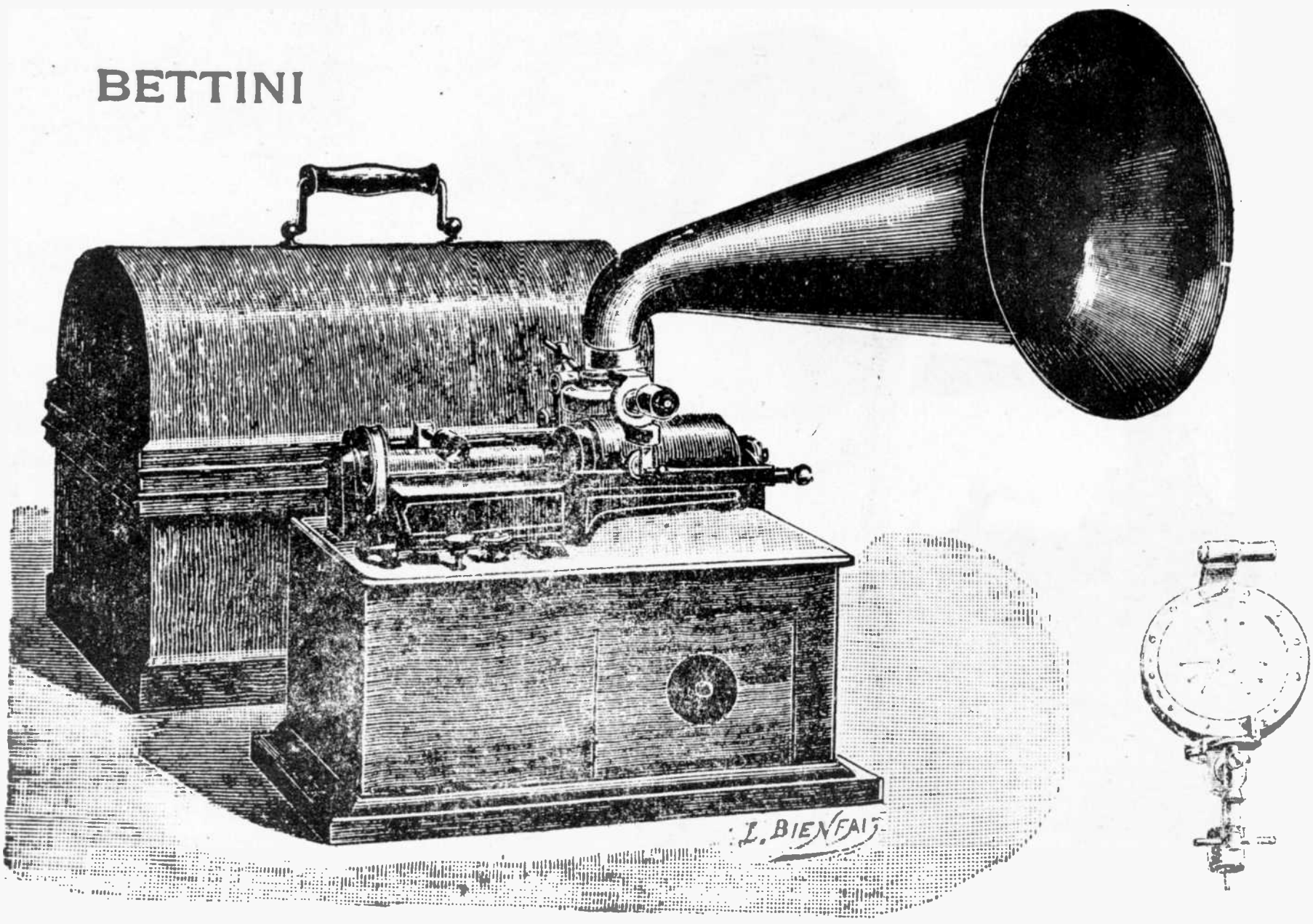
Controlled by this switch are twenty-five coils in separately shielded compartments of five coils each, thus the four coils for any given range are individually shielded from another. The five antenna coils are provided with electrostatic shields between their primaries and secondaries to avoid capacity coupling between the antenna and the first two. This makes the use of a good doublet antenna particularly effective and permits the fullest advantage to be taken of the characteristics of a good antenna, both from the standpoint of signal pick-up and noise reduction. The receiver is available in either rack or table mounting form. There is also a model available which includes a crystal filter.



BETTINI, EARLY HIGH FIDELITY

In 1888 Bettini acquired an Edison wax-cylinder phonograph, one of the first that had been manufactured. Being a member of New York's high society as well as an Italian, he was a confirmed and enthusiastic opera-goer, and he listened to the phonograph with a trained, critical ear. What he heard did not please him. But instead of putting the phonograph aside and finding another diversion, Bettini surprised everyone by setting out o improve on Edison's apparatus himself. He had had no scientific training and had shown no special technical talent. Nevertheless, in 1889 Bettini was able to patent an "Apparatus for the Recording and Reproduction of Sounds" based on Edison's wax-cylinder phonograph but embodying several important modifications. He called his machine the Micro-Phonograph, and in June 1890 described it in a short article, which he wrote—being a good Continental—in French.

He began by detailing the defects of the early phonographs and Graphophones: one could never be sure of getting an audible impression in the wax cylinders; and even if one did, the quality of reproduction lacked the clarity of timbre that enables a listener to distinguish one voice from another. Furthermore, he complained, it was unpleasant to listen to music through rubber hearing tubes; and if one discarded them and substituted a metal horn, the reproduction was entirely without character, the tones being faint, indistinct, and lacking in musical quality. In the Micro-Phonograph, Bettini wrote, he had endeavored to obtain "a clearer, more



natural reproduction, with a volume sufficient to obviate the necessity of using hearing tubes" and he had tried especially to "avoid a metallic timbre" in the reproduced sound. His researches had taught him that the results he desired could not be obtained with the recording and reproducing elements supplied by Edison. Edison employed a crystal diaphragm with a single stylus projecting from its center; Bettini favored a mica diaphragm, and in place of Edison's straight stylus he substituted a "spider" with radial legs of varying length bearing against the diaphragm at a number of points and culminating in a single recording pin. He justified his innovations in this way:

> A diaphragm vibrates over its whole surface, but at varying degrees at different points. The study of acoustics teaches us that a diaphragm contains dead points where the vibrations will be feeble or nonexistent. If the stylus is anchored to only one point of the diaphragm [as in Edison's apparatus], that point may often be dead, or nearly so; such a diaphragm might sometimes make a good recording, but there would be many other times when it would record very imperfectly. Suppose, however, that a "spider" with legs of different lengths be anchored to a diaphragm at several points; two or three of these points may be dead points at times, and consequently incapable of transmitting sound vibrations, but the other legs will be able to actuate the recording pin nevertheless. The "spider" has other advantages: it transmits more force to the recording pin, and because of its many supports that pin is held more rigidly. To sum up, I catch the vibrations of a diaphragm at several different points, and with the aid of independent conductors I concentrate these vibrations on a single recording pin.

The results he modestly described as "perfect." The same "spider" principle was employed in the reproducing attachment, and with the same indicated results.

Sometime in the mid-Nineties, when pantographic duplication became feasible, Bettini began to offer cylinder recordings for sale. He published a twelve-page catalogue in 1897 and a thirty-two page catalogue in 1898—the latter listing over two hundred recordings of serious music (many by artists of celebrity rank) and another two hundred in the popular category. Bettini's performers included some from the Metropolitan Opera, among them the sopranos Frances Saville and Marie Engle, the tenor Dante del Papa, the baritones Mario Ancona and Giuseppe Campanari, and the basso Pol Plançon. Yvette Guilbert was represented by six songs; there were four cylinders by the violinist Henri Marteau; and there were dramatic excerpts read by Bernhardt, Réjane, and Salvini. Prices ranged from $2.00 to $6.00 per cylinder—at a time when other companies were offering cylinder recordings at fifty cents each.

Considering Bettini's prices and the small scale on which he operated, it is doubtful whether he sold more than a few hundred copies of any one recording. In no other way can the fact be explained that today Bettini cylinders are even rarer than Gutenberg Bibles or Shakespeare quartos. A group of them was discovered in 1945 in Mexico City—none, unfortunately, by singers of eminent stature—and sold to a collector in Boston. I know of no other authenticated Bettini cylinders in existence; * Gianni Bettini's own collection of "originals" was stored in a French warehouse in 1914 and destroyed by bombing during World War II.

Text from THE FABULOUS PHONOGRAPH by Roland Gelatt.

Large illustrations show Bettini reproducers on Edison machines.

Large illustrations enlarged and retouched from A GUIDE TO THE EDISON CYLINDER PHONOGRAPH and the 1898 COMBINATION CATALOG.

TRADE NAME: "Super-Heterodyne.
MODEL: Regular.
TYPE: Super-Heterodyne.
TUBES: Eight UV-199.
BATTERIES: "A," "B" and "C" furnished.
CONTROLS: Two.
AERIAL: Loop.
PRICE: $149 complete.
MANUFACTURER'S NAME: Bosserman Radio Laboratory.

TRADE NAME: "Super-Pliodyne.
MODEL: 9.
TYPE: Five stages of tuned radio frequency, detector and three stages of audio frequency amplification.
TUBES: Nine.
BATTERIES: "A," "B" and "C" needed.
CONTROLS: One.
AERIAL: Loop.
PRICE: $295.00 without accessories.
MANUFACTURER'S NAME: Golden-Leutz, Inc.

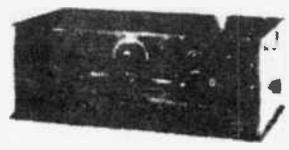
TRADE NAME: Super Reinartz.
TYPE: Regenerative circuit using a combination of the Hartley and Reinartz circuits.
TUBES: Three.
BATTERIES: Not furnished.
CONTROLS: Two.
AERIAL: Inside or outside.
PRICE: $57.60.
MANUFACTURER'S NAME: Elgin Radio Supply Co.

TRADE NAME: "Telomonic Three."
TYPE: Three stages tuned radio frequency; crystal or tube detector; two-resistance audio frequency; reflex, and one transformer coupled audio.
TUBES: Seven.
BATTERIES: Not furnished.
CONTROLS: Four.
AERIAL: Outside or inside.
MANUFACTURER'S NAME: Danziger-Jones, Inc.

TRADE NAME: Terafone.
MODEL: TA.
TYPE: Two stages of radio frequency, detector and two stages of A.F.A. using the Satterlee antennaless circuit.
TUBES: Five.
BATTERIES: None furnished.
CONTROLS: One.
AERIAL: None needed but will work on any type.
PRICE: $100.00 without accessories.
MANUFACTURER'S NAME: The Moon Radio Corporation.

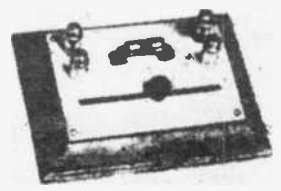
TRADE NAME: "Terlee Acme Reflex."
TYPE: One-stage tuned radio frequency, three stages of untuned detector and three stages of untuned audio; crystal detector.
TUBES: Four.
BATTERIES: None furnished.
CONTROLS: Two.
AERIAL: Outside or inside.
PRICE: $165.00 without accessories.
MANUFACTURER'S NAME: Terlee Electric and Manufacturing Company.

TRADE NAME: "Timson."
TYPE: Tuned radio frequency.
TUBES: Five.
BATTERIES: None furnished.
CONTROLS: Three.
AERIAL: Outdoor or indoor.
PRICE: $60.00 without accessories.
MANUFACTURER'S NAME: Terrio Radio Mfg. Corp.



TRADE NAME: Thermiodyne.
MODEL: TFS.
TYPE: Three radio, detector and two audio.
TUBES: Six.
BATTERIES: None furnished.
CONTROLS: One.
AERIAL: Indoor and outdoor.
PRICE: $140.00
MANUFACTURER'S NAME: Shepard-Potter Co.

TRADE NAME: Tuska Superdyne.
MODEL: 305.
TYPE: One radio, detector and two audio.
TUBES: Four.
BATTERIES: None furnished.
CONTROLS: Two.
AERIAL: Outside or inside.
PRICE: $350.00 without accessories.
MANUFACTURER'S NAME: The C. D. Tuska Company.

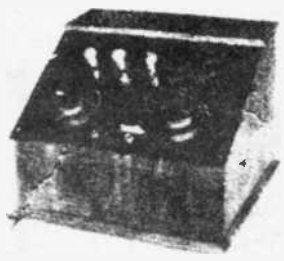


TRADE NAME: "Van Crystal Receiver."
TYPE: Fixed crystal (no tubes or batteries required).
CONTROL: One.
AERIAL: Outdoor.
PRICE: $3.50.
MANUFACTURER'S NAME: L. D. Van Valkenburg Co.

TRADE NAME: "Ware."
MODEL: W.
TYPE: Neutrodyne.
TUBES: Five 201A type.
BATTERIES: "A" 6-volt storage; "B" 90 volts.
CONTROLS: Three.
AERIAL: Inside or outside.
PRICE: $175.00 without accessories.
MANUFACTURER'S NAME: Ware Radio Mfg. Company.

TRADE NAME: "Ware."
MODEL: WU.
TYPE: Neutrodyne with built-in loud speaker.
TUBES: Five 201A type.
BATTERIES: "A" 6-volt storage; "B" 90 volts.
CONTROLS: Three.
AERIAL: Inside or outside.
PRICE: $300 without accessories.
MANUFACTURER'S NAME: Ware Radio Mfg. Company.

TRADE NAME: Ware Neutrodyne Receiver.
MODEL: T.
TYPE: Neutrodyne reflex.
TUBES: Three U.V. 199's
BATTERIES: May be contained in cabinet.
CONTROLS: Two.
AERIAL: Outdoor.
PRICE: $65 without accessories.
MANUFACTURER'S NAME: Ware Radio Corporation.



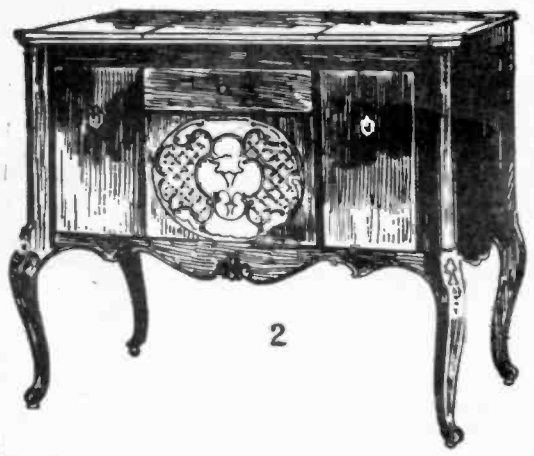
TRADE NAME: Ware Neutrodyne Receiver.
MODEL: TU.
TYPE: Neutrodyne reflex with built-in loud speaker.
TUBES: Three UV-199.
BATTERIES: Place in cabinet.
AERIAL: Outdoor.
CONTROLS: Two.
PRICE: $150 without accessories.
MANUFACTURER'S NAME: Ware Radio Corporation.

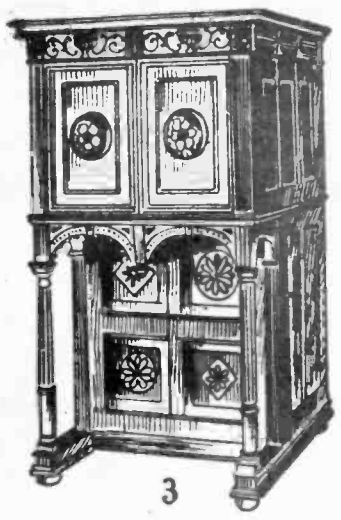
(Continued next month)

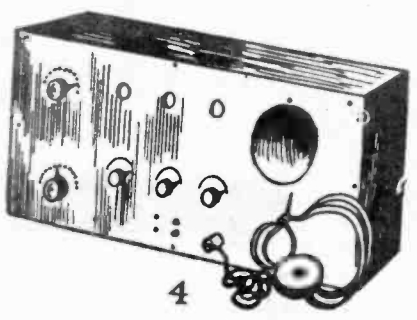
The New York Radio Show

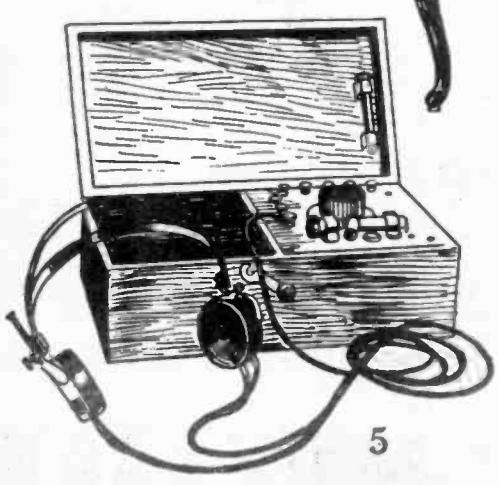
Radio News for April-May, 1922

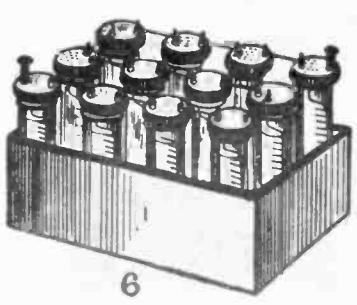

1

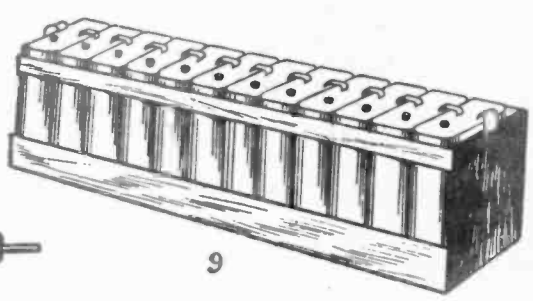

2


3


4

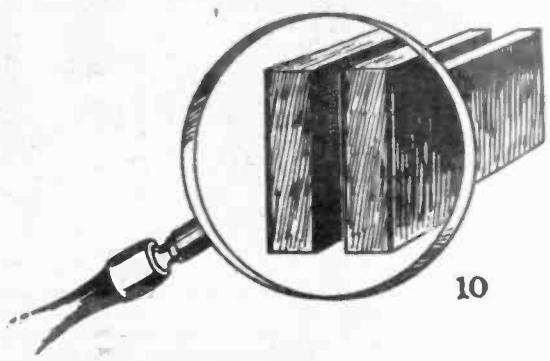

5

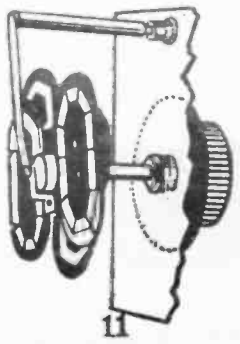

6

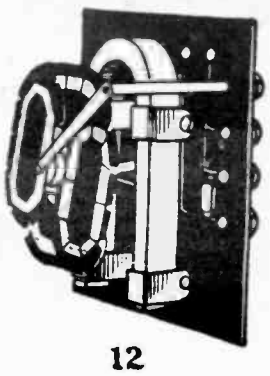

9


7


8


10


11


12

Figs. 1, 2 and 3 illustrate new types of receiving cabinets exhibited to the public for the first time at the Radio Show. Everything necessary for the reception and reproduction in loud tones of radiophone transmission is included in the handsome cabinet. Controls are greatly simplified. Figs. 2 and 3 also include a phonograph using the same loud speaker as the radio receiver, and Fig. 3 employs an electric blower to increase the sound. Fig. 4 is a simple and complete receiving set intended for the novice in radio. There are only two controls in addition to the filament rheostats. Loud speaker is built in the same cabinet. Fig. 5 is a complete and very compact receiver employing vacuum tube of recent design which requires no plate battery. Everything except the antenna is included in this small cabinet for the reception of the signals, and wave lengths ranging from 100 to 1,000 meters are obtained by single control.
Fig. 7 is the vacuum tube used in this receiver and Fig. 12 is a back view of the same receiver removed from the cabinet. The fixed magnet seen in Fig. 12 acts upon the flow of electrons in the tube and aids detection.
The variometer, which is clearly shown in Fig. 11, is of unusual design and very compact.
Figs. 6 and 9 illustrate two new types of storage plate batteries. These may be recharged.
Fig. 8 is a crystal detector enclosed in a vacuum to prevent oxidation.
Fig. 10 shows two kinds of panels, one with copper shielding inside the panel for prevention of body capacity effects and the other is made of fibre with bakelite veneer to reduce the cost.

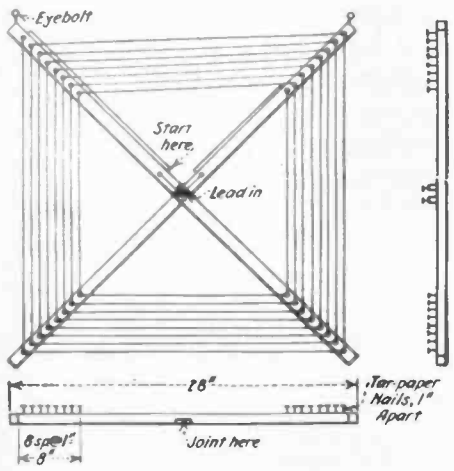
CONSTRUCTION OF A LOOP AERIAL.

I am presenting an indoor aerial which I made and designed. It is simple in construction and can be made for about seventy-five cents.

As there are some amateurs who do not have the opportunity to buy and erect large aerials, I think this one is just the thing.

Here are the directions to erect an indoor aerial:

Take two boards 6' long and 2" square wide, and 1" plane, and sandpaper them, then make your joint in the center. When this is done, nail them with tar paper nails, starting 1" from each end, as shown in the illustration.



Such a Loop Used With a Detector and Two-Step Amplifier With Regenerative Effect Will Pick Up Radio Concerts Easily Within About 12 Miles of a Station.

VINTAGE RADIO & PHONOGRAPH SOCIETY
AND
ANTIQUE WIRELESS ASSOCIATION

VRPS/AWA CONVENTION '87

Date: Fri, Sat, Sun. October 16, 17, 18, 1987

Place: Dallas, Texas
Holiday Inn Dallas-Southwest.

Featuring-
Old equiopment contest. A total of 18 Categories with trophies and ribbons for winners in each category

Auction of over 300 lots - Saturday .

Swapfest - Sunday morning.

Technical session Saturday.

Cocktail Party and Banquet with awards of trophies and ribbons - Saturday night.

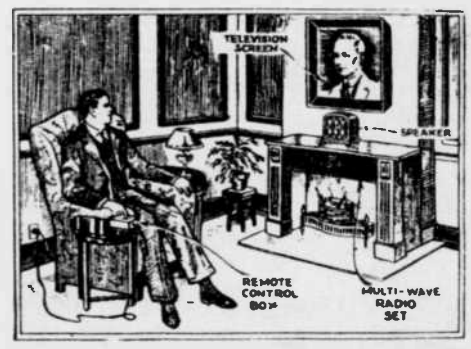
Chances on excellent prizes for all who register in advance.

For Registration Form, Map, Program, etc. contact:

VRPS/AWA CONVENTION '87
Mike Sherman, Convention Manager
P. O. Box 165345
Irving, Texas 75016

Or Call Toll-free 1-800-527-9250 (outside Texas only)

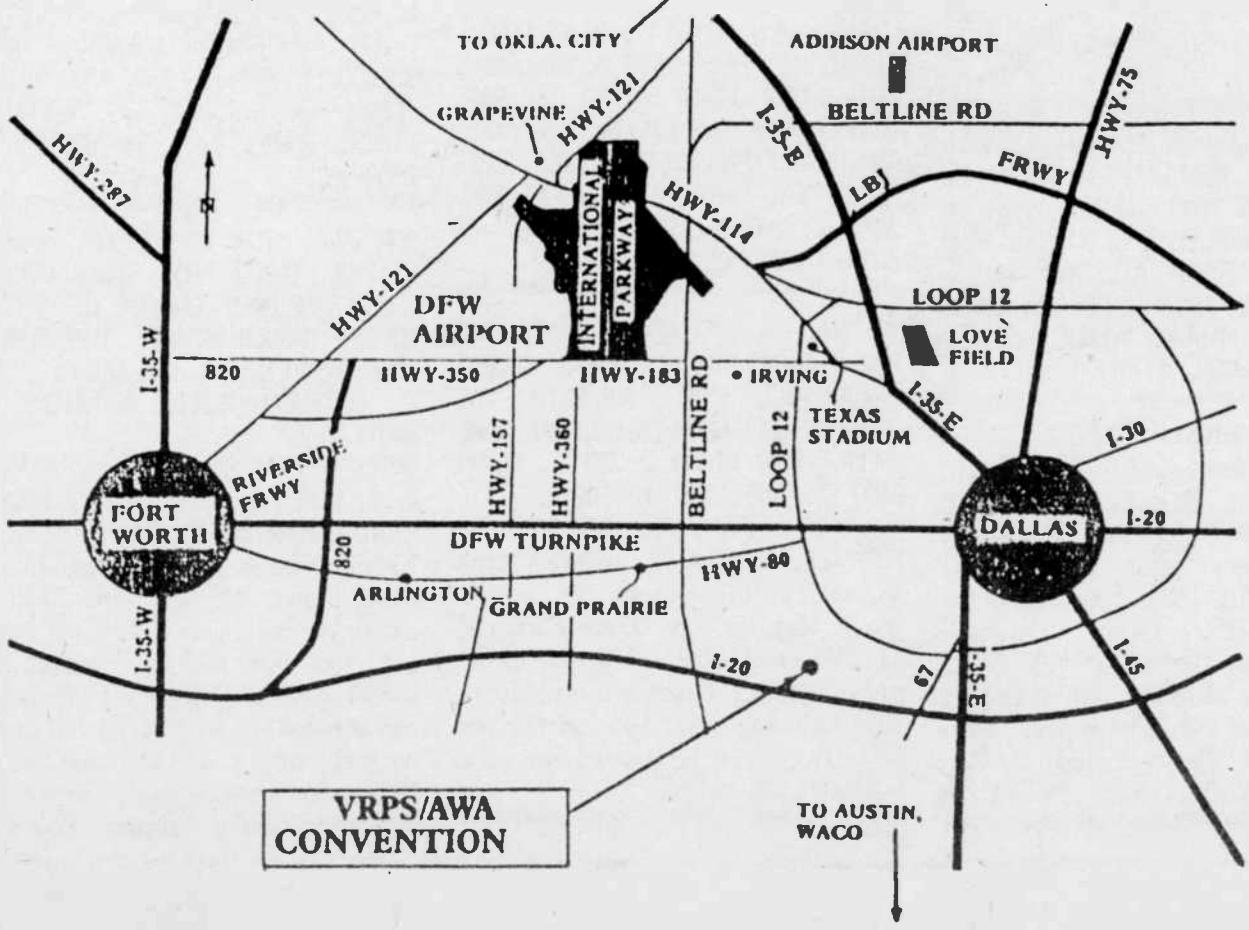
"I think I found the trouble lady—you forgot to plug it in!"



The television receiver of the near future. Remote control buttons are used to select any type of picture with its accompanying sound. A suggested layout is shown here.

February, 1932

LOCATION MAP



flea market

FOR SALE

ANTIQUE BEEHIVE WHITE INSULATORS - $1.00 EACH —— HEAVY DUTY T.V. REPLACEMENT TRANSFORMERS, NEW BOXED AT $20.00 EACH. —— 50 YEAR COL-

LECTION OF VACUUM TUBES LOW LOW PRICES. INQUIRE M. LEVY, 101 EAST DRIFTWOOD #44, FBG, TX 78624 TEL (512) 997-2534.

50 YEAR COLLECTION HARD TO FIND TUBES: LOW LOW PRICES, INQUIRE, M. LEVY, 101 EAST DRIFTWOOD #44, FBG, TX 78624.

TRANSFORMERS— POWER— HEAVY DUTY— T.V. AND RADIO REPLACEMENT TYPES, STANCOR AND MERIT, NEW BOXED AT $20.00 EACH. LARGE COLLECTION VACUUM TUBES, LOW, LOW, PRICES. INQUIRE M. LEVY, 101 EAST DRIFTWOOD #44, FBG, TX 78624, TEL. (512) 997-2534.

FOR SALE— RIDERS MANUALS, ABRIDGED (VOL. 1-5) AND VOL. 6 THROUGH 16 $275.00. VOL. 9, 10, 14 $20.00 EACH. ANTIQUE RADIO SERVICE, O. H. McDONALD, 2535 WEDGLEA #124, DALLAS, TX 75211.

ELECTRON TUBES: Receiving, transmitting, microwave.. all type available. Large stock. Next day delivery, most cases. Daily Electronics, P. O. Box 5029, Compton, CA 90224 (213) 774-1255.

TUBES AND POWER REPLACEMENT TRANSFORMERS... LOW LOW... PRICES: MINIATURES AT $1.00.... OCTALS AND LOCTALS AT $2.00.... INQUIRE ON OTHERS...., M. LEVY, 101 EAST DRIFTWOOD # 44, FREDERICKSBURG TX 78624. TEL. (512) 997-2534.

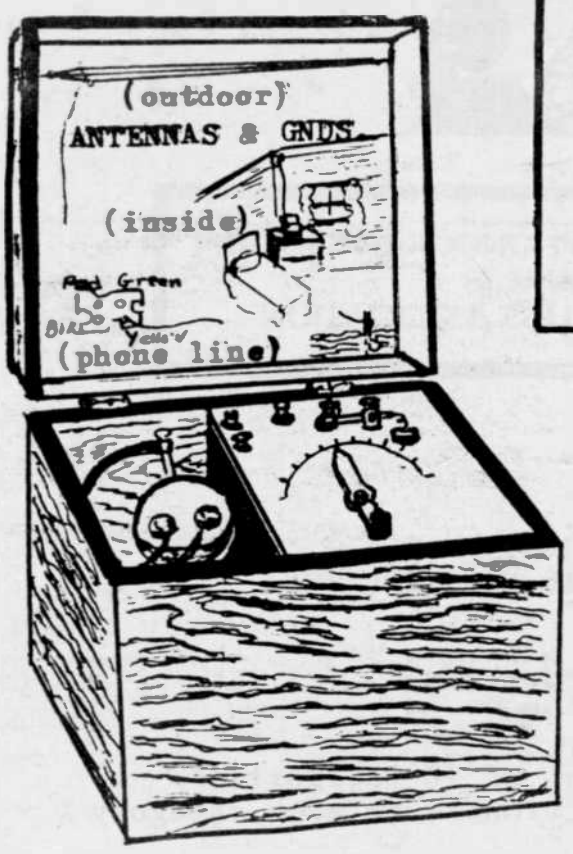
RADIO RELATED TIE CLASPS, LAPEL PINS, R.C.A. - G.E.- PHILCO, ETC. FULL ENAMEL EMBLEMS. SEND S.A.S.E. FOR LIST. YOU WILL BE GLAD YOU DID. MR. MICHAEL S. SABODISH, SR., 11-A MATAWAN AVENUE, CLIFFWOOD, NJ 07721.

INDIANA HISTORICAL RADIO SOCIETY information and membership application send SASE to: IHRS, 245 N. Oakland Avenue, Indianapolis, IN 46201

FREE —— FOR NEWLY ISSUED FLYER, no. 187. Send 2 stamp SASE to: Olde Tyme Radio Company, 2445 Lyttonsville Road, Silver Spring, MD 20910.

SUBSCRIBE TO "antique Radio Collectors Newsletter," 6 issues for 1987 are $7.50, sample copy $1.00. Antique Radio Laboratories, R 1, Box 41, Cutler, IN 46920.

STROMBERG CARLSON MODEL 601, 6-01A's INCLUDED, HAS VOLTMETER IN PANEL, $175.00. —— KELLOGG MODEL 510 WITH TUBES. TOP OF THE LINE 1928, . $175.00 —— LYRIC 7 TUBE MODEL 60, $100.00 ———— RAY MINER, 1215 B. FT. MADISON, IA 52627 —— (319) 372-1271.



CRYSTAL RADIO CONSTRUCTION details: 1915 Bureau of Standards, 1922 Aeriola, Supertone, Radiogem, loop antenna, carborundum, shortwave, loudspeaker, plus antennas, wavetraps, odd detectors, antique crystal radio amplifiers- everything $2.00. Smelser, 1030 North Main, Springfield, MO 65802.

ROTARY SPARK GAP, medium power. Works fine. $95; Hallicrafters S-85 Receiver. Excellent. $85; Three coil mount with honeycomb coils. $45; Bodine loop antenna. Beautiful. $75. All plus UPS. Paul C. Crum, W9LC, 6272 N. Cicero Avenue, Chicago, IL 60646. 1 (312) 282-3033

FOR SALE —— JULIETTE VOICE OPERATED MIKE NOS $6.00. — ANTENNA SW. DPDT CONTACTS MTD. ON 1X1 SQ 2 IN. HIGH CERAMIC POST 4"X6" OLD, BUT GOOD CONDITION $10.00 —— ARGONNE AR-81 DUEL NEEDLE TURN OVER PHONO CART. FOR 33 OR 78 RPM $4.00. ADD SHIPPING. SASE FOR PARTS LIST. ENGLAND, 98 MONTAGUE, ZANESVILLE, OH 43701.

RADIO RELATED TIE CLASPS AND LAPEL PINS— ALL NEW LISTS— MANY NEW ITEMS— PUT YOUR FAVORITE RADIO ON A 2 1/4 INCH PLASTIC BUTTON. SEND L.S.A.S.E. FOR DETAILS AND ILLUSTRATED LIST. MR. MICHAEL S. SABODISH, 11- A MATAWAN AVENUE, CLIFFWOOD, CLIFFWOOD, NJ 07721.

CONSOLE RADIOS: CROSLEY MOTOR DRIVEN art deco, Zenith Black Dial, Majestic 91, Majestic 131, Zenith Super IX. All for $350.00 negotiable. Battery sets: Echophne V3 $150. Crosley 52-S hard to find, restored $125. Phonos: Columbia Eagle $250, Columbia QQ $250. Trade: Grebe CR12 for AR10, Ozarka portable for what have you? Craig Ball, 10101 Oak Hollow Circle, Austin, TX 78758. (512) 835-7292.

Hi, I'm Newt, and I've been making radio circuits since the late 1930's (see Breadboard AMer Is A GOlden OIdie, Jan 78, ELEMEN. ELECTR.), and have developed circuits for EKI and MFJ as well as have taught radio in the army & at private trade schools. I am author of COLOR TV SERVICING and CB & 2-WAY RADIO REPAIRING, publ. Nelson Hall, Chicago. Now I am too old to find work, and am somewhat disabled, yet don't get a cent from VA or SSI. In order to complete qualifying for social security, I am selling hobby electronic plans. Newt Smelser, 1030 N. Main, Springfield, MO 65802.

LUMP SALE - OVER 12,000 RECORDS - VICTROLAS, OLDIE RADIOS, RECORDERS WIRE TAPE MONO STEREO 8 TRACK TRANSCRIBERS MICROPHONES SPEAKERS AMPLIFIERS MONO STEREO 5 CADY TUBES ASSORT NEW PARTS — HARLIE M. COX, 3427 W. HOLLY ST., PHOENIX, AZ 85009 (602) 278-1461.

FOR SALE: A. J. EDGECOMB NAVY TYPE TUNER FROM "THE WIRELESS SHOP." CIRCA 1917. MINT. AUTHENTIC TAG FROM THE GREENWOOD COLLECTION. MAKE OFFER. F.A. NICHOLS, 720 E. ELDORADO ST., APPLETON, WI 54911.

FOR SALE, AERIOLA SR. receiver type RF, with original paper in cover. One I, Radiola type AC manufactured by Westinghouse, original metal plate in lid. Cases are excellent. Selling as is, two units for $200.00. Cleon L. Boothe, Box 235, Cohocton, NY 14826.

ANTIQUE RADIOS, three single tube DC sets, regeno three #140, one partial 1 tube set, one radio device?, three unique speakers. All for $300.— RADIO, 29 SOUTH AVENUE, WHITMAN, MA 02382.

10T4 GE TV 10 inch 1949 complete. Trade for 2 wood cabinet table radios 1 must be an RCA complete. George Arth, 2412 Washington, Lexington, MO 64067

ZENITH TRANS - OCEANIC collection, all are AC tube type. Chassis types 6A40 (2), 7G605, 5G740 (2), 5H40, $300 for all six. Eugene E. Folger, RADIO, 29 South Avenue, Whitman, MA 02382

HOWARD TABLE MODEL RADIO model 575 and other table models. Two 1917 WWI books. Russell Schoen, E 7340 Nietzhe Road, Clintonville, WI 54929.

EDISON C2 RADIO / PHONO, 1928, good cond. Manual and warranty card present, not running, needs work, $400. Eugene E. Folger, RADIO, 29 South Avenue, Whitman, MA 02382.

RADIOS, TV's, related items. Send SA2SE for list. John Kendall, P. O. Box 436, Fallston, MD 21047.

BLACK and WHITE new yokes and flybacks 2 thru 167 — $15. postpaid— Don Aldred, 39 East 8th Street, Jacksonville, FL 32206.

NC 183D WITH SPEAKER $65, PRECISION E-200-C SIGNAL GENERATOR $20, PHILCO 112 CHASSIS $30 WITH ALL 11 TUBES. JOE WATSON, 3300 ARROWHEAD CIRCLE, ROUND ROCK, TX 78681 (512) 255-7962.

FOR SALE: TUBE COLLECTORS. A LONG LIST OF TUBES FROM EARLY 1920'S. SOME RARE ONES ON THE LIST. LIST NOT THE GARDEN VARIETY TYPE TUBES. SASE FOR LIST. F. A. NICHOLS, 720 E. ELDORADO STREET, APPLETON, WI 54911.

P. S. ELMER O. OSTERHOUDT OF MODERN RADIO LABORATORIES, MRL, of California passed away a couple of weeks ago. He was the leading authority on crystal sets and vacuum tube old radios. Through his encouragement, MIDCO was founded, and hopefully will carry on where he left off since starting MRL in 1932. For more details, write the following family member: Mel Os-

terhoudt, 11 Summerwalk Ct., Nuport Beach, CA 92663.

FOR SALE; UNUSED AND USED TUBES, capacitors, speakers, phono cartridges and needles. C. Elmer Nelson, 11 S. Church Street, Princeton, IL 61356.

AK MODEL 10 BASEBOARD RADIO WITH HORN, $500.00 PP. SEVERAL battery sets and interesting horns available. Am looking for a Victor Theramin. George Anglin, 938 E. Prince Road, Tucson, AZ 85719. (602) 887-2899.

RIDERS 1 TO 23, RIDERS TV MANUALS, old radio parts, over 6,000 tubes, old radios mostly battery sets. Will sell or trade. Call evenings. (412) 628-4030. Ask for Tom Cowles, 325 S. Pittsburg Street, Connellsville, PA 15425.

WEBCOR MODEL 80 WIRE RECORDER with operating instruction book, service instruction book, tags, spools of wire. Webcor model 228-1 wire recorder "Electronic Memory" dictation machine with original plastic dust cover and spools of wire. Make offer. John Schellkopf, 1344 Goucher Street, Pacific Palisades, CA 90272.

BEAUTIFUL, COLORFUL, ENAMEL radio-related tie clasps and label pins with emblems of Philco, G.E., R.C.A. and others. Must see to appreciate. Send a L.S.A.S.E. for completed illustrated list. Mr. Michael S. Sabodish Sr., 11-A Matawan Avenue, Cliffwood, NJ 07721.

THORDARSON YOKES AND FLYBACKS- 2 thru 167 $15.00 each. postpaid, Don Aldred, 39 East Eighth Street, Jacksonville, FL 32206.

IF YOU DID NOT SEND FOR MY TIE TAC AND LAPEL PIN LIST YET - HURRY - 125 SATISFIED CUSTOMERS FROM 9 CLUBS CANNOT BE WRONG. SEND A L.S.A.S.E. FOR ILLUSTRATED LIST TO: MICHAEL SABODISH SR., 11-A MATAWAN AVENUE, CLIFFWOOD, NJ 07721.

FOR SALE; UNUSED AND USED TUBES, CAPACITORS, cone speakers, phono cartridges and needles, used tubes from 40 cents up. C. Elmer Nelson, 11 S. Church Street, Princeton, IL 61356.

FOR SALE: "MARY-O-DYNE" - 1925 5 TUBE, TRF BATTERY OPERATED MODEL 512C (AMBER MFG. CO. N.Y.C.) — PHILCO MODEL 37-611 1936 — MAJESTIC - MODEL 381 - "PIRATES CHEST") — VIBROFLEX WIRELESS KEY — R.C.A. HORN SPEAKER MODEL UZ1325 — DeFOREST LOOP ANTENNA — ALL FOR $275.00 ——— C. D'ALESSIO, 136 CHANGEBRIDGE ROAD - K4, MONTVILLE, NJ 07045. (201) 263- 4747.

ATTENTION IOWA COLLECTORS!! SMALL COLLECTION OF RADIOS FOR SALE. WILL SELL ENTIRE LOT ONLY FOR A BARGAIN PRICE. SEND S.A.S.E. FOR LIST AND PRICE TO: MICHAEL D. WEEKS, 1103 PATRICK COURT, #209, WATERLOO, IA 50701.

CRYSTAL radio sets, plans, parts, books, kits. Catalog $1.00. MIDCO, 660 North Dixie Highway, Hollywood, FL 33020.

WANTED

CATHEDRAL RADIOS, MUST BE NICE AND WORKING CONDITION, WILL PAY TOP DOLLAR. ALSO WANT OTHER UNUSUAL AC RADIOS. HAROLD PERKINS, 4468 SUN VALLEY DRIVE, LAS VEGAS, NV 89121.

WANTED: CROSLEY MODEL 59 CHASSIS IN ANY RESTORABLE CONDITION TO COMPLETE MY CROSLEY GRANDFATHER CLOCK RADIO. BURNETTE B. KERCHNER, 27 WILLOW ST., LENHARTSVILLE, PA 19534. PHONE (215) 562-8772.

SX-28, SX-71, COLLINS 51J RECEIVERS, A-K CATHEDRALS, A-K HORN SPEAKER. JOE WATSON, 3300 ARROWHEAD CIRCLE, ROUND ROCK 78681 (512) 255-7962.

WANTED, PREMIUM PRICE PAID for Tower Adventurer sailing ship speaker, also for similar smaller ship speaker, made by Jodra. Gordon Wilson, 11108-50 Avenue, Edmonton, Alberta, T6H 0H9 Canada.

WANTED- RADIO TUBES w/tip type as WD-11, UV-201, etc., Equipments & Sound systems from Western Electric, Langevin, Jensen, Altec, JBL, Tannoy, McIntosh, Marantz, Dynaco — Tel.: (818) 576-2642. David Yo, P. O. Box 832, Monterey Park, CA 91754.

WANTED: PEERLESS DYNAMIC 9" speaker Model 19 AR-60. Early Canadian Radio Magazines. Radio News 1919, 1921, 1922. Radiola 20 chassis-good audios. Good driver for Saal speaker. Ron McNeill, Box 472, Yorkton, SK, Canada, S3N 2W4.

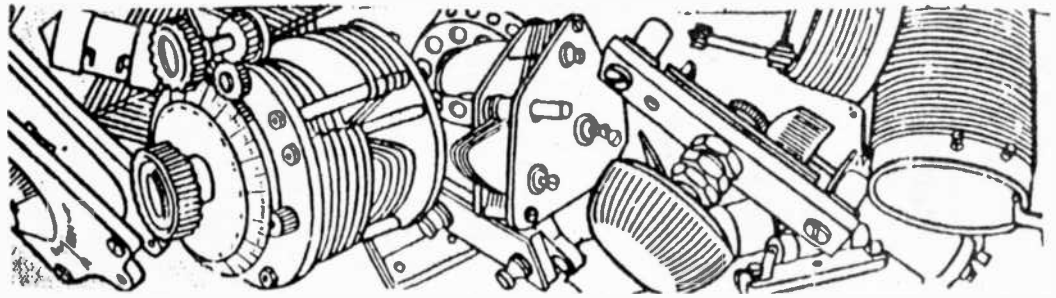
WANTED: SEPARATE DETECTOR AND AMPLIFIER. UNITS USED WITH GREBE CR9. WOULD APPRECIATE OFFERINGS OR LETTER FROM GREBE SPECIALISTS. CHESTER FRANZ, ONE CHAROLAIS DRIVE, BAY, MO 65041.

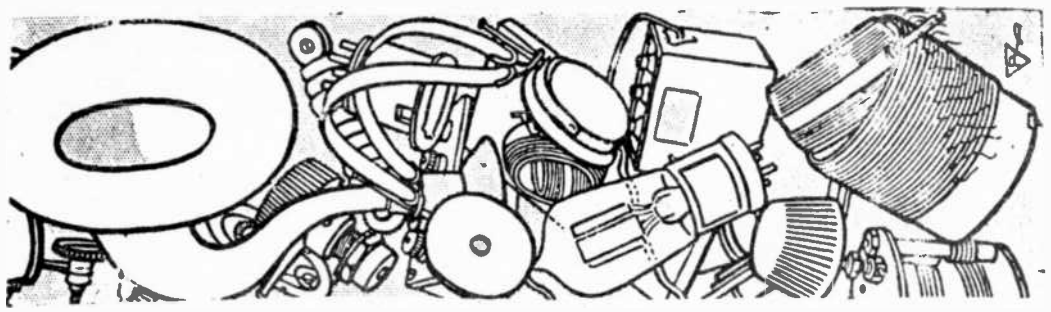
MANUAL OR REPRINT FOR HALLICRAFTER SX-88, SX-42, S-36 and S-27 type knobs. Call or write (612) 352-3500. Vernon Freichels, 1025 Pleasant Street, Sauk Centre, MN 56378.

WW2 AIRCRAFT RADAR H2X, MICKEY PHILCO AN/APS-15, W. E. AN/APQ-13— NEED PIXS, SCHEMATICS, TECH., ORDERS, ETC. B. C. VINTAGE FLYING MACHINE, P. O. BOX 18099, FORT WORTH, TX 76118. (817) 282-3825.

WANTED——— MARCONIPHONE VIII CABINET OR PHOTO OF ONE. GORDON WILSON, 11108 - 50 AVENUE, EDMONTON, ALBERTA CANADA, T6H 0H9.

CAPEHART BC- SW- PHONO LATE 30'S OR EARLY 40'S. MODEL THAT TURNS RECORD OVER. RCA BC-SW PHONO LATE 30'S OR EARLY 40'S MODEL THAT HAS 22 TUBE CHASSIS AND 16" SPEAKER. TURN TABLE 78- 45- 33 WITH GOOD SPEED ADJUST. WILL PAY TOP $ FOR GOOD CONDITION. SEND INFO TO: JOHN C. BALDWIN, 210 KAWEHI PL., KULA, HAW 96790 (808) 878-6374.

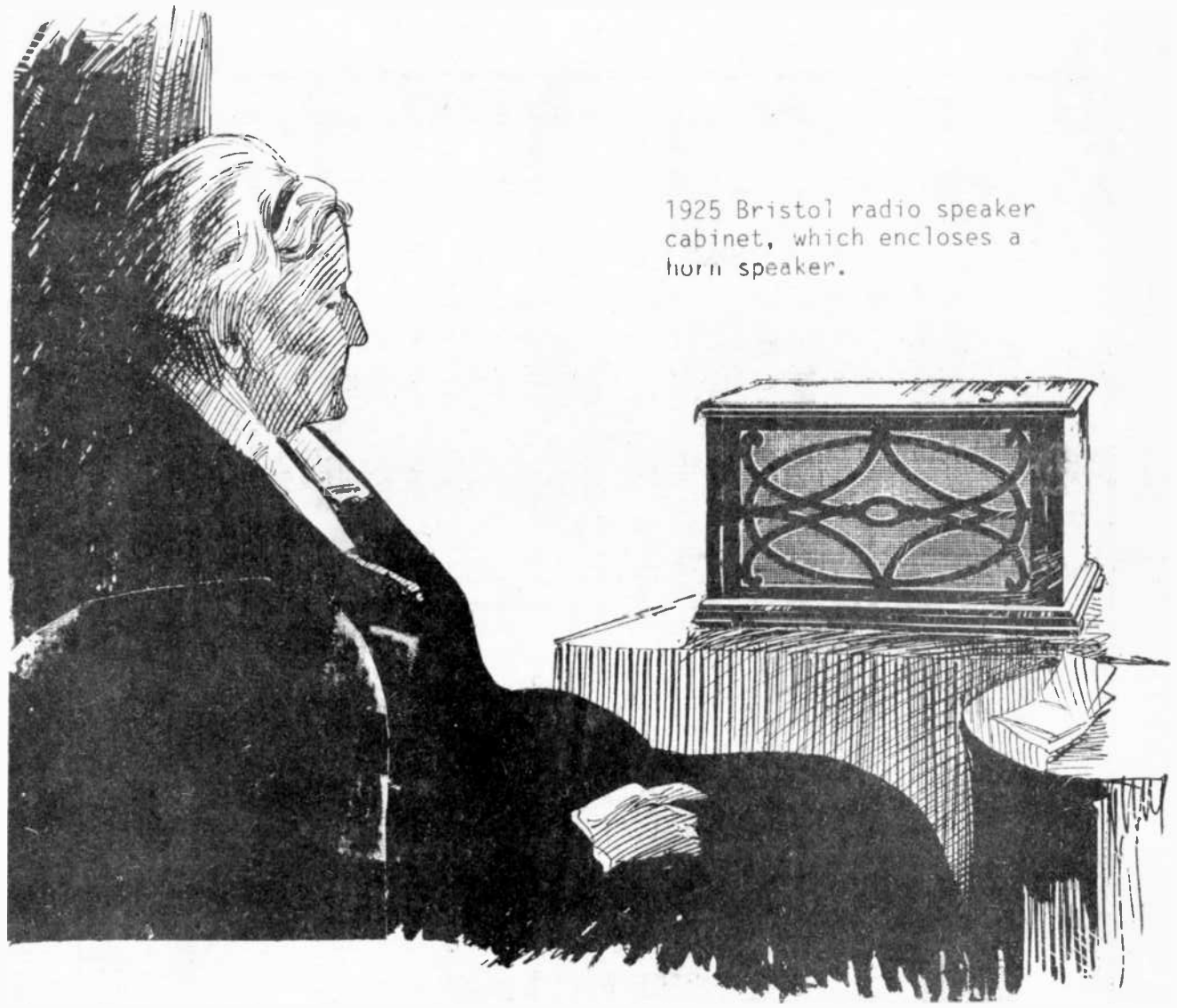




September

THE HORN SPEAKER

1987



1925 Bristol radio speaker cabinet, which encloses a horn speaker.