

Indiana Historical Radio Society

BULLETIN

Vol 5

DECEMBER 1976

NO 4

Radio Message From Mars



Merry Christmas! Happy New Year!

MEETING AT GREENFIELD, IND.

Harry Martin and his wife hosted the fall meeting of IHRS at Greenfield on Saturday, Oct. 10th. The session was well attended in spite of the rain that lasted all day. The meet was held in the shelter house in Riley Park. Emphasis was on early crystal sets and over 60 were on display. There was a swap session during the day and a number of sets changed hands. The annual election of officers was held. Fred Prohl, retiring president, conducted the meeting. Ed Taylor, retiring treasurer who has served in this capacity since the beginning of the society, was given applause. Del Barrett told the group about the progress of the Auburn-Cord-Duesenberg museum in Auburn, Ind. where IHRS is setting up a display of early radio gear. Much interest among the membership is being displayed, since many thousands visit this automobile exhibit each year.

NEW OFFICERS OF IHRS FOR 1977



Walt Sanders, Sec., Don Johnston, Treas.,
Harry Martin, Historian, Gary Vierk, Pres.,
Ross Smith, V. Pres. (not present)



Glen Rovers at the Swap Tables



Crystal Set Display at Greenfield, Indiana

Antique Wireless Association

The Antique Wireless Association was founded in 1952 by a group of amateur historians and collectors bent upon exploring and preserving the history of wireless communications.

There are more than 1,200 members in the Association world-wide. Among them are leading scholars, statesmen, scientists and industrial leaders and scores of old time pioneers in the practice of telecommunications, from Marconi ship and shore operators to hundreds of amateur radio operators who earned their expertise in the days of the spark gap and the coherer. In addition there are scores of knowing antiquarians who have saved from oblivion literally thousands of artifacts from earliest wireless days, more than 28,000 of which have found a place in the Antique Wireless Museum, now newly located in East Bloomfield, New York, near Rochester.

The Association is chartered by the State of New York as a non-profit corporation and enjoys full membership in the American Association of Museums. The A. W. A. sponsors annual historical conferences attended not only by members but by leaders in the nation's communications industry. Three of its national conferences have been held, by invitation, at the Ford Science Museum, Dearborn, Michigan, the Franklin Institute, Philadelphia, and the Smithsonian Institute, Washington. Like invitations by other national scientific bodies have been tendered. Programs and other assistance are also made available to a number of state and regional historical radio groups, to national associations of old time wireless operators and to regional wireless museums.

The Antique Wireless Museum itself sprang from a nucleus of thousands of pieces of wireless equipment collected over 22 years by Bruce Kelley, W2ICE, AWA's present secretary – an industrial engineer and wireless enthusiast. With generous donations from fellow collectors, the Museum has grown to first rate stature. Housed originally in a reconstructed carriage house in Holcomb, New York, near Rochester, it now has been transferred to much larger and more secure quarters in a newly-restored 136-year-old Academy building owned and shared by the Town of East Bloomfield Historical Society.

The Museum is the center of research in the Association's development of the history of wireless and giving it wide circulation in a unique series of tape-and-slide presentations which are shown at the several annual meetings of the Association and made available to AWA regional groups and professional and industrial organizations. Typical of these presentations are graphic and dramatic accounts of lives and accomplishments of the men of wireless –



View of Armstrong Room in AWA Museum

Marconi, Armstrong, Pickerel and others. A recent project is a tape-slide-show on the history of amateur wireless involvement in famous arctic and antarctic explorations.

The new Museum quarters in the East Bloomfield Academy Building feature a large general exhibition hall plus complete replicas of early wireless stations, a vast vacuum tube collection and scores of wireless components. The Museum's resources include a large and comprehensive library of books, periodicals, photographs and documents – basic to its research and the sharing of this knowledge with others.

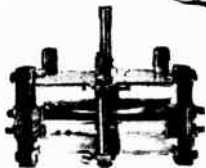
A substantial part of AWA operations is the quarterly publication of *The Old Timers Bulletin* which keeps members apprised of the results of continuing research, presenting important papers on scores of historical subjects contributed by members who had a part in the making of that history. The *AWA Bulletin* is received automatically by AWA members and goes to many technical and general libraries.

Applications for membership are invited from among those who have the same serious interest in AWA objectives as those who have furthered its work and who are today shaping its future. For details write: Lincoln C. Cundall, W2QY, 69 Boulevard Parkway, Rochester, New York 14612.



INDIANAPOLIS

2nd Annual Mid Winter swap Meet and Flea Market of Old Radio gear will take place at The Indiana Vocational College, (Ivy Tech) 1315 E. Washington Street Indianapolis (just east of Downtown on US40) WHEN-Saturday Feb 26 at 11AM Every one asked to bring extras for sale or trade. Plenty of indoor space with convenient space to parking lot off street west of bldg. Business meeting at 1PM. See You at Indy



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TREASURER***

After 5 years at this job Ed Taylor has decided to take a rest. Ed is a founding member of the IHRS and has helped shape it's policies and procedures. He also contributed much of the advertising material used in the Bulletin over the years. Ed deserves a word of thanks from all of us for the fine job he has done. Congratulations Ed.

Beginning in January please send all dues to the INDIANA HISTORICAL RADIO SOCIETY in care of Treasurer, Don K. Johnston, Box 218A, Windfall, IN 46819. Don will be handling the finances of the IHRS. 1977 dues are now being accepted. Membership for the year is only \$6.00. Mail your check now.

BULLETIN***

Send all Bulletin material to Glen E. Rogers, 1005 S. 18th St., Lafayette, IN 47905. Advertising is free to all members. Material for the next Bulletin must be received no later than March 10th. The Editorial Staff is available at anytime for comments and criticism. Please contribute to the Bulletin.

SECRETARY***

All general correspondence and mambership applications will be handled by Walt Sanders.

HISTORIAL***

If you have any historical information that you feel would be appropriate for the Society Scrapbook please contact Harry Martin. We want information about our members that is newsworthy. If you have taken any photo at our meets we could use them.

VICE PRESIDENT***

Ross Smith will be handling all Corporation Business.



Auburn-Cord-Duesenberg Museum



RADIO CONFERENCE

[AWA]

Antique Wireless Association

"An amateur organization devoted to the history of wireless"



AFFILIATE

Indiana Historical Radio Society April **AUCTION** ★ 16 ★

Films



Music



Auburn, Cord, Duesenberg Museum.

Special Events



Sightseeing



Lectures



PROGRAM

AWARDS

SWAP MEET & FLEA MARKET

Let's Go



HAVE YOU A RADIO?

"THEY don't know what they're-missing," said a good farmer friend of mine from whom I inquired as to the reason why so few farm homes are equipped with a radio receiving set.

The second reason which we found for the apparently cold reception which farmers are giving radio was the fear of lightning traveling down the aerial and causing damage to the home. This, however, can be easily prevented either by a knife switch or a special lightning arrester which costs only a dollar or so and offers automatic protection, besides being approved by the insurance underwriters so that it does not affect fire insurance any more than telephone or lighting wires coming into the same house.

It is a fact, friends, that you who are isolated from towns and cities do not know what you are missing by not equipping your home with a radio receiving outfit. You can build a set yourself that will give excellent results or you can buy one at a comparatively low cost when the daily pleasure and profit to be derived from a radio is considered.

Next to the automobile I consider the radio the greatest advantage which the farmer has achieved in our lifetime. Think it over and we believe you will want one!

THE BUSINESS FARMER

THE BUSINESS FARMER

FOR THE FARM

By Wm. C. Dorf

THE rural dweller with an Air-cell receiver is now able to enjoy, to the fullest extent, the benefits of modern radio. The leading radio manufacturers are augmenting their lines of receivers by taking advantage of the Air-cell "A" battery, combined with the 2-volt type tubes, for use in self-powered radio receivers in meeting an important demand and a profitable market in direct-current districts, un-electrified farms, and thousands of homes without central station service. At the present time, there are upwards of twenty different manufacturers producing battery-operated radio sets, all using the Air-cell "A" battery with these new 2-volt tubes. These sets are comparable to the a.c. receivers in tone, range and selectivity.

The manufacturers are making the receivers in both tuned-radio-frequency and superheterodyne circuits and are enclosing them in attractively designed midget-type and console-type cabinets. The high degree of sensitivity and quality obtainable with these receivers is made possible by the use of power detection, screen-grid and pentode-type vacuum tubes and permanent-magnet dynamic speakers. Features heretofore only procurable with a.c. receivers are now standard equipment on Air-cell sets, such as tone and static controls, and full-vision illuminated dials.

The Air-cell "A" battery is manufactured and shipped "dry." It is rendered active by filling the two compartments of the unit with ordinary drinking water and by following a few simple instructions outlined on the side of the battery case.

The Air-cell is not rechargeable and the bother and nuisance of continually recharging storage batteries or renewing dry cells is therefore eliminated.

Once the Air-cell battery has been activated it is capable of delivering a thousand hours.



LYRIC



SPARTON



GENERAL MOTORS

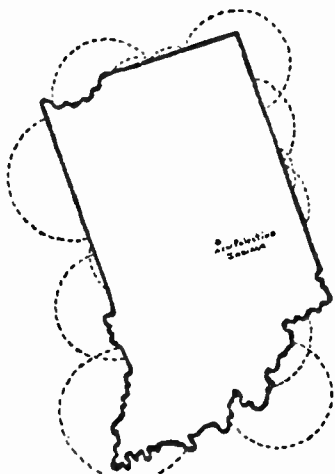
APRIL, 1932

OUR ONLY BUSINESS IS FARM BROADCASTING.



OUR STATIONS RECOGNIZE THE IMPORTANCE OF AGRICULTURE.

HARRY MARTIN—voting member of NAFB since 1947. Farm Director of the RURAL RADIO NETWORK, INC.



The Rural Radio Network, Inc., is wholly owned and operated by Mr. and Mrs. Harry Martin, New Palestine, Indiana. It is also identified as "THE INDIANA FARM NETWORK."

MEMBERS:

- IBA, Indiana Broadcasters Assoc.
- NASRN, National Assoc. of State Radio Networks
- NAFB, National Assoc. of Farm Broadcasters
- NAMA, National Agriculture Marketing Assoc.

FARM NEWS & INTERVIEWS
CROP REPORTS
LIVESTOCK REPORTS
UP-TO-THE-MINUTE MARKETS
DIRECT COVERAGE OF ALL MAJOR FARM EVENTS OF INTEREST TO INDIANA FARM LISTENERS . . .

FFA



RURAL RADIO NETWORK

A HISTORY OF FARM BROADCASTING

By Harry Martin

When the magic of radio first began to captivate the American public, most of us were farmers or residents of rural areas. Farm life was more lonely and isolated than it is today. Roads were rough, and at times impassable. There was a great need for better communication – for the farmer to be better informed about the weather, markets and improved farming methods.

There was also a great hunger for entertainment. As a boy on the farm in the 1930's, I was more interested in radio's music and entertainment than in its agricultural information programs.

Some people think of me as a pioneer in farm broadcasting. And it makes me feel pretty old when a balding, middle-aged fellow walks up and says, "Harry, you interviewed me when I was a 4-H boy."

Actually, when I became a full-time farm broadcaster at WFBM, Indianapolis in 1946, my predecessor, Henry S. Wood, had already compiled a record of 15 years as the station's farm editor. His "Hoosier Farm Circle" was on the air daily from 12:30 to 1 p.m. It set the pattern which is still the basic formula for good farm broadcasting today – weather and market reports – farm news – and a daily interview or feature on a farm-related subject.

For many years the farm radio programs included "live" studio music. At WFBM it was the HAYMAKERS. Larger stations in other cities had larger artist staffs. Among these were WLS, Chicago; WLW, Cincinnati; and WHAS, Louisville.

Many of the performers of those days have gone into retirement. Some are more durable. TV viewers still enjoy "Lonesome George Goebel," now on his second career in TV; few realize that his first time of popularity was on WLS Radio in the 30's, where he was famous as "The Little Yodeling Cowboy."

WLS was farm-oriented during much of its broadcast day, but also had a special program of farm reports called "The Dinnerbell Hour." Host for many years was Art Page.

John Baker of Brazil, Indiana, succeeded Art Page on the DINNERBELL in 1935. John is now retired, hard at work on a complete history of farm broadcasting. He tells me that the first person who might have been called a farm broadcaster was Frank E. Mullen. In March 1923 Mullen was hired by a farm magazine to voice its daily programs on KDKA, Pittsburgh. Mullen later joined NBC.

A HISTORY OF FARM BROADCASTING – continued

John adds that, in those days, the radio industry had not really decided on its terminology. Some people said they were going to “broadcast;” others said they were going to “radiate.” So Frank Mullen might have called himself a “farm radiator.” KDKA began “radiating” USDA farm market reports in May, 1921, but Frank Mullen was the first man to be employed on a regular basis as a farm broadcaster.

As farmers became fewer and farming operations larger, farm broadcasting became more specialized. There was a period in the 40’s and 50’s when almost every major station had its own farm director. TV provided additional opportunity to communicate with farmers, utilizing props and visual aids.

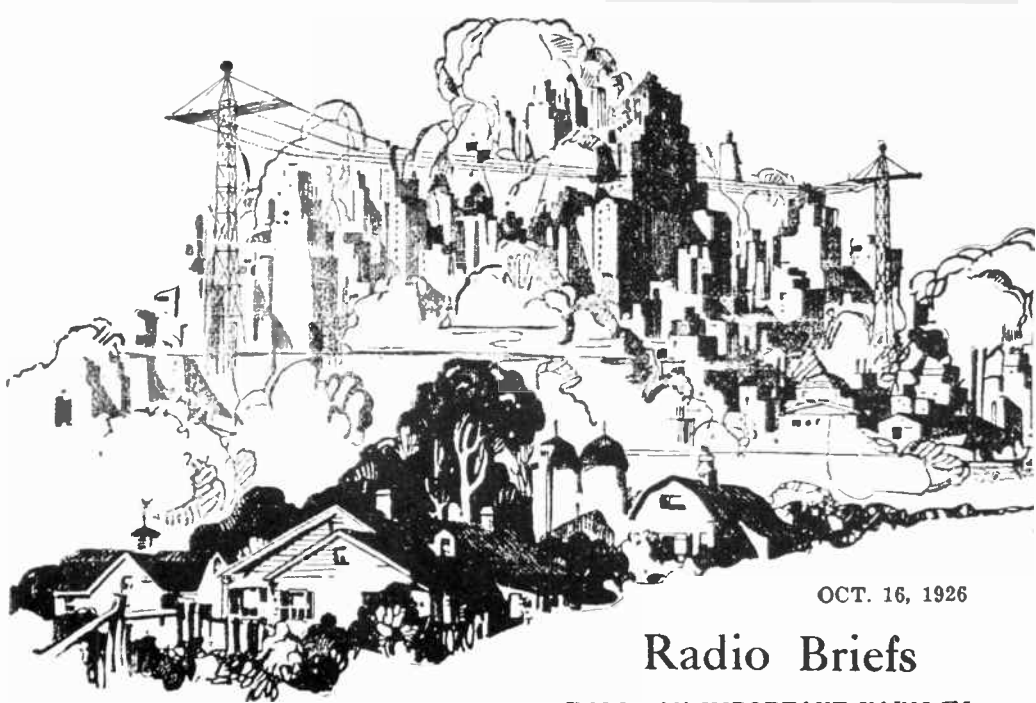
Then the big-city stations began dropping their farm departments or requiring the farm director to take up various non-farm duties. Now farm broadcasting is concentrated in major farming regions, (1) on those stations serving a big agricultural area – and (2) on farm networks of local stations in the smaller towns. The farm network concept, which my wife Marian and I started in Indiana in 1972, enables the smaller stations to have professional farm programs for their many farm listeners.

Farmers listen to radio, wherever they are. In addition to radios in the home and car, farmers have radios in the pickup truck and tractor cab. A tractor dealer told me recently that every large tractor he sells now is equipped with AM-FM radio.

At present there are 161 full-time farm broadcasters in the nation, voting members of NAFB (National Association of Farm Broadcasters).

Farm broadcasting still retains some of that wonderful touch of magic that first attracted the ears of Rural America to the headphones or to the horn speaker beside the 3-dialer on the living room table.





OCT. 16, 1926

Radio Briefs

July 22, 1922

STATION WLS organized its part of the nation-wide radio school the first of the month. One hundred broadcasting stations were cooperating with the U. S. Department of Agriculture in the ether wave school work. Lectures will be prepared by the nation's most prominent farm experts. It is estimated that more than one million farmers will attend the classes beside the loud speakers throughout the country. Live stock, poultry and dairying will be featured in the first term. Diplomas will take the form of certificates signed by the secretary of agriculture and the various department heads under whose auspices these courses are conducted.

In a recent report of the U. S. Bureau of Standards on radio fading, some interesting correlations were brought out. It has been found that about an hour before sunset there usually occurs a rise in the average intensity of radio signals, then a drop at sunset, and a rise to the maximum about an hour after sunset. The sunrise effect is similar to the sunset effect, but reversed.

RADIO AN IMPORTANT FARM IMPLEMENT, SURVEY SHOWS

THE importance of radio in the production and marketing of agricultural products is brought out in a special survey of about 1200 representative farmers, just completed by the United States Department of Agriculture. More than 50 per cent of the 1200 farmers replying reported that they owned tube sets employing three or more tubes, while approximately 50 per cent of the farmers reporting have home-made sets ranging from simple crystal detectors to tube sets.

More than 75 different makes of sets were found among the manufactured sets purchased, although the bulk of the sets were confined to about 15 of the leading makes that are more or less widely advertised in radio and general magazines. The average cost of the manufactured sets was \$172.

Comparatively few of the owners of home-made sets operate crystal receivers, the survey revealed. The average cost of the crystal sets was \$11. The average cost of the home-made tube sets was \$83.

Eighty per cent of these farmers said they were interested in receiving both weather and market reports. The survey was made in practically every State in the Union, the most numerous replies coming from Illinois, Iowa, Texas, Kansas, Ohio, New York, Missouri, and Indiana.

★ ★ RADIOADS ★ ★

WANTED: Murad MA12-MA20, Industrial Radio Service Baby Ultra 400, Standardyne Multi-wave, Klitzen, Amrad, Paragon, DeForest, Kennedy, Tuska, Murdock, Michigan, Radiodyne, Grebe, Radio Shop Echophone, Elgin Super Reinartz, Neutrowound, Metrodyne Super 7, Wilcox Hexaircoil, Jones J-85, Wurlitzer 5D, Sleeper Serenader, Erla Reflex--2840 Ala. Ave St Louis Park Minn 55416--Jack Bacon

WANTED: Radiola III in good working condx. Will trade Radiola VIII or AK40 or 51. Need schematic for Scott 15 tube (uses 56, 58 and 2A3's) --1111 E Thompson, Hoopeston Ill 60942--Ronald A Scranton

SELL: Most tubes #19 thru #80-\$4, 01A's \$5, 99's \$6. Plus Postage. Need Antenna for Radiola 26, AK breadboard parts, (RF xfmr's with B.P.'s and a Var with name tags) Bases and drivers for AK mod L and Magnavox R4.--118 Countryview Drv. Naperville Ill 60540-Mike White

WANTED: Dial-pointer with nameplate for Philco cathedral mod 50.-- 324 Forest Ave Aurora Ill 60505--Bill Hennen

WANTED: Peerless Courier 65 made by United Producers in 1929 (8 tube "High-Boy?"). Need wooden knobs. Will buy or trade--1517 Pacific Drv Ft Wayne Ind 46819--Del Barrett

WANTED: Peter Pan Radio, Jackson-Bell, and Gilfillan.-1401 Franchere Pl. Sunnyvale Calif 94087-R.K. Goodlive

SELL: Part of collection-three lists \$1.00 ea (refundable) Radios, Radio Pub., etc (spkr's, tubes etc) SASE with 26¢ stamps.-Box 161, West Hurley N.Y. 12491-J.R. Doak W2GHF

SELL: Last 5 copies of Crosley Blue Book "Simplicity of Radio" 16th ed. 1924, pocket size (80 pages) \$3.50--6518 Gunpowder Lane Prospect Ky 40059--Gordon Eklund

★ ★ RADIOADS ★ ★

SELL: Tube Tester for old tubes. Jackson model 115 with roll chart.--414 Bloom, 1st Floor, Highland Park Ill 60035--Scott Brissey

SELL: Zenith Transoceanic mod.T600 portable All band \$65 plus shipping, good condx with original log and operating instructions.--1400 Milrose Drv., Norman Okla 73069--Jess W. Speer, W5SQJ

SELL: Old radio advertising blotter cards from '20s, Radiola Super VIII, Radiola 28, Radiola 30, Radiola 25, RCA 104 spkr., Radiola III, these are in color. SASE and 75¢ per card--16500 W 12th Drv. Golden Colo. 80401--Lee & Carolyn Eruton

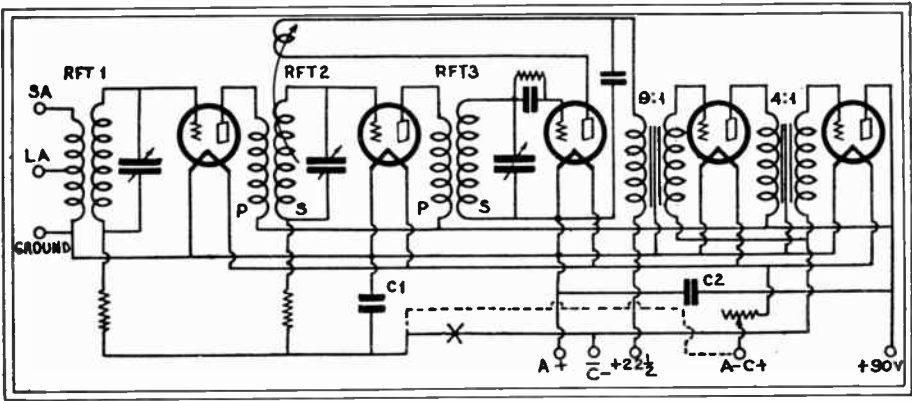
SELL: New JFD Ballast tubes type C, K42C, K55B, K67C, K80B, L55B-C-D, L80B, 10-23A, 92-105A, 100-79, 150-90, 225-135-\$2 each. Other good used tubes (no201A) High Freq Lab. Weston Radio with factory letter-no cabinet. Make an offer.--704 N Bourne Tolono Ill 61880--Glenn R Mann

TRADE: National Vern. Dial (SW3 type) for Crosley dial (51 or 52) --Glen E Rogers W9ASX

WANTED: One Metal binding post type used on Aeriola or Radiola Sr. --245 Oakland Ave. Indianapolis Ind 46201--Ed Taylor.

WANTED: Copy "Radio Theory and Operating" by Mary Texanna Loomis; copy RASCO Radio Catalogue mid-1920; Accuratune dial 801 Radio--1950 Chevelle Drv. Baton Rouge La 70806--Wes Chatellier W5DPM

WANTED: Gear assembly of dial of 9S244 Zenith Long Distance Chassis--414 Bloom St 1st Floor Highland Park Ill 60035--Scott Brissey



(Q51) The Crosley "5-38" tuned radio-frequency receiver, battery model, at one time a very popular receiver, obtained exceptional sensitivity by the use of controlled regeneration. Feed-back was obtained through RFT2, instead of RFT3, as with most regenerative circuits. Dotted lines indicate the grid returns of early-production models of the set wherein a "C" battery was not used.

5925 W. Florida Ave.
Lakewood, Colo. 80226

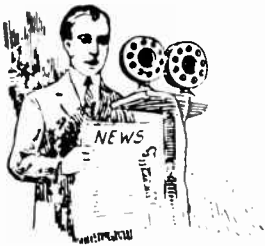
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Antique Radio Shop

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352-1855

Buy-Sell-Repair

TRADE Crosley Trirdyne SP cabinet for SCR
54A or Stromberg Carlson 1A or 1B cabinet
-RR1 Box218A Windfall Ind 46076-Don Johnston



Home of Early Radio Experiments

UPSTAIRS in this garage in the Pittsburgh suburbs was housed a forerunner of our modern broadcasting stations. Here in his amateur station Dr. Frank Conrad carried the experimental development of radio-telephone equipment to a degree which permitted the broadcasting of programs on regular schedule to such amateurs as were equipped with radio receivers. Later these activities were transferred to the roof of the Westinghouse plant, where on November 2, 1920, the first commercial broadcasting was inaugurated from the station which subsequently became KDKA.

THE NBC CHIMES

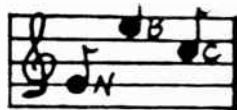


The NATIONAL BROADCASTING COMPANY made its business debut on September 9, 1926 as a corporation owned jointly by RCA, GE, and Westinghouse. Two months later, on November 15th at 8:05pm, NBC began network broadcasting on 24 member stations from WEAJ in New York. In the months to follow, the rapidly growing number of affiliated stations were experiencing wide-spread confusion at the conclusion of network programs on the hour and half-hour. A coordinating alert-signal was required...a signature which would be a consistent and identifiable cue to precisely synchronize all programming and station-breaks.

A team of three men at NBC were instrumental in developing a musical cue to signal station identification on the hour and half-hour; OSCAR HANSON, a former long-lines engineer for A.T.&T., was destined to become VP In Charge of Engineering...ERNEST LaPRADE, orchestra leader on The Collier Hour program, would become NBC's Director of Musical Research...PHILLIPS CARLIN, one of NBC's busiest announcers on shows such as The Clicquot Club Eskimos and The A&P Gypsies, later became Eastern Program Manager of NBC. These three professionals experimented on the air from 1927 to 1928 with a complicated 7-note arrangement of chimes. However, staff air-men found the seven notes difficult to strike correctly and the series was reduced to four. On November 29, 1929 the "G-E-C" triad was first broadcast and soon became the signature known to the entire world as the NBC CHIMES at 29:30 and 59:30 past the hour.

The J.C. DEAGAN COMPANY in Chicago made the actual NBC Chimes from their inception until 1954. The company also made 4-note Dinner Chimes which are now often mistaken for the NBC Chimes. The "200 Series" Dinner set consisted of four note-bars mounted in tonal progression on four resonator tubes. However, the NBC Studio Chimes had only three note-bars mounted in

THE NBC CHIMES



striking order on a wood resonator-chambered box, padded on the corners with leather bumpers. The authentic NBC Chime set had a cast aluminum handle attached to it to enable the announcer to hold the chimes close to the microphone while striking them.

In the interest of timing, pitch and proper sequence, the NBC Chimes were automatically sounded from 1932 on, by means of an "electronic music-box." Each note in the triad was composed of eight partial notes in the form of metal reeds, perfectly tuned. These 24 partial-note reeds were plucked by fingers on a revolving drum, striking a three-chord chime. Technically each set of parallel metal reeds formed a small condenser, the capacitance of which was varied by the vibrations of the reeds. The notes were amplified and sent out over the Network.

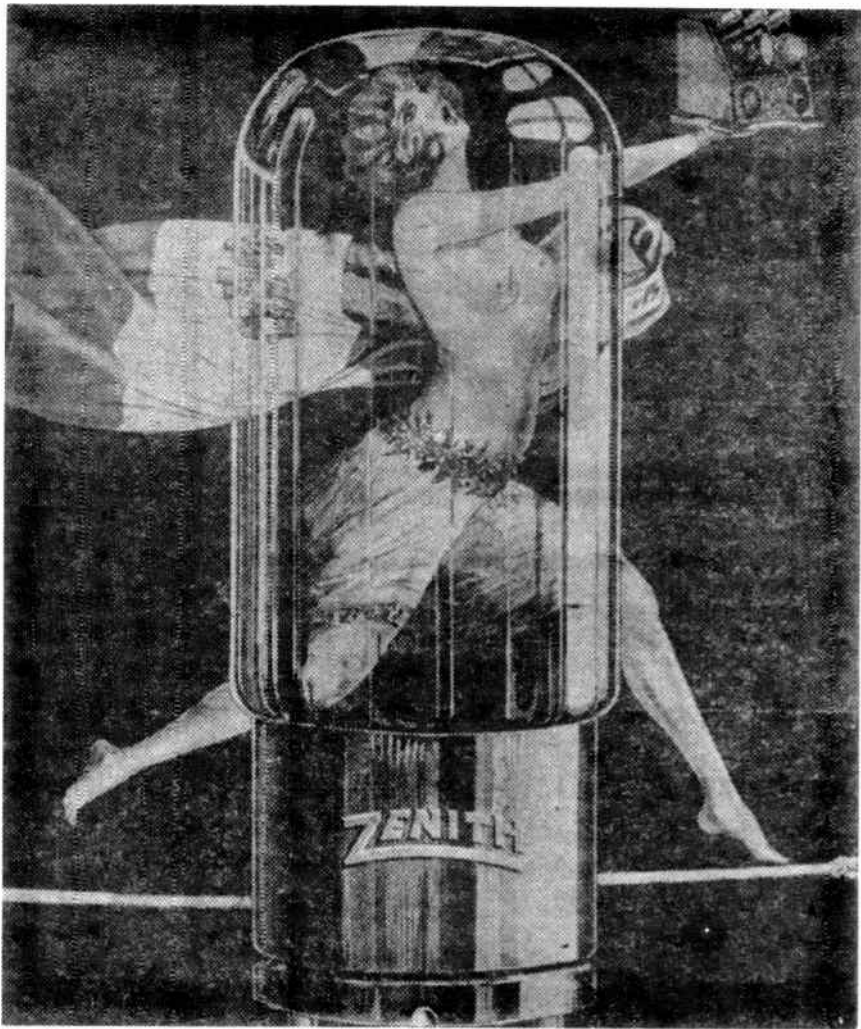
During World War II, the famous 4th Chime was used to alert the NBC News Department of war bulletins. The 4th Chime was first heard on the air in 1937 with the report of the crash of the HINDENBURG, again in 1938 during the Munich Crisis, and in 1941 with news of the attack on Pearl Harbor. By the way, the 4th Chime was actually a second strike of the last note ("C").

On April 1, 1941 at 1:29pm, the NBC Chimes heralded the beginning of NBC television broadcasting and the sign-on of WNBT in New York. Ten years later, NBC would introduce the visual symbol of the Bar & Mallet Chimes on Network TV station-breaks. On color telecasts, the N-bar was red; the B-bar was green; the C-bar was blue.

The Chimes became the registered trade and service mark of NBC in 1950. The three-note sequence was the first audible trademark to be registered by the U.S. Patent Office.

On September 12, 1971 NBC discontinued the regular use of the Chimes on radio and television station-breaks. © 1976 Rod Phillips

THE WIRELESS STREAKER



Who said that streaking is something new? Back during the Great Depression, almost every radio technician made the acquaintance of the Spirit of Wireless, as shown in Fig. 1. In fact, many old timers can remember this Spirit doing her high-wire act on their own aerials (after that third shot of moonshine).

Well, anyhow, legend has it that the Spirit of Wireless was discovered by a traveling tube salesman who stopped at a bakery for some French pastry. He eyed this Spirit kneading dough on the third table from the front, and his humanitarian instincts were aroused. "If you're kneading dough," he suggested, "you could be rolling in it by running down bugs in wireless aerials".

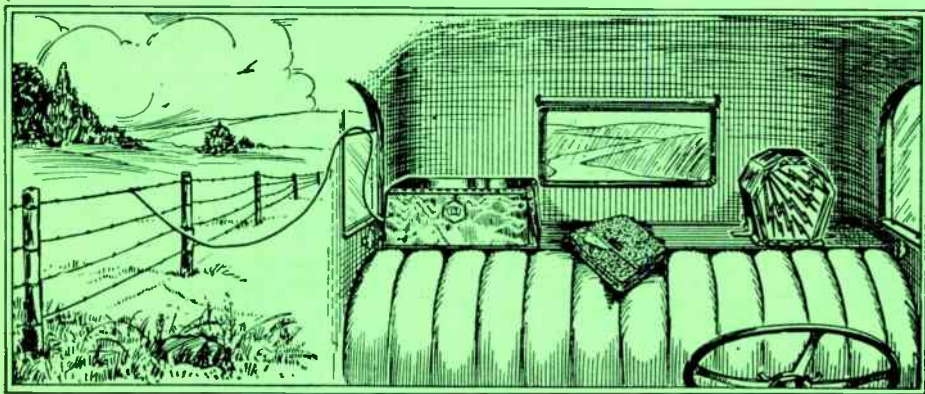
To make an already too-long story short, the bakery babe's new job was a breeze, as anyone can plainly see. When she tired of running down bugs in wireless aerials, she took a tip from Lady Godiva and started riding a horse. A corroded aerial wire grounded horse and rider, however. Which just goes to show that there is nothing new under the moonshine.

Robert G. Middleton

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Here is another variation in the manner of mounting an automotive receiver, which permits the convenient use of a standard set. When the car is stopped, a temporary aerial enables greater distance to be obtained.

RADIO DEPARTMENT

EDITED BY J. HERBERT FERRIS

DETECTOR RESULTS

IN the last issue there was described a vacuum tube detector and how to make it, and in describing this detector and results obtainable it was necessary to make one just as described and test it out. This was done right here in Elberta, Mich., and the results obtained are actual results.

In describing the different parts of a receiving set and how to make them, we are first making them and then describing them, and if instructions are followed closely and your joints are soldered (except where they fit under screws) and the aerial is properly insulated (that is properly protected from electrical leakage) and your ground connection is good you will get the same results and maybe better. Be patient and do not expect too much until you have learned how to operate your particular set.

To get the best results with a vacuum tube detector it is necessary to use a regenerative tuning set, which will be the subject of our next article, and so the results that I obtained must be remembered were with a regenerative tuning set.

With the detector described, during June the following stations were heard distinctly using two sets of telephones so that two people were listening: K. Y. W. the Westinghouse station at Chicago; KDKA, the Westinghouse station at Pittsburgh, Pa.; WCX, the Detroit Free Press; WWJ, the Detroit News, also a station in Indianapolis and one in Denver, Colorado, were heard but I did not understand the call letters.

We have been advising the use of one or two steps of amplification to get stations 300 or more miles away, but here you see that stations over that distance have been heard clearly here in Elberta.

But here comes the rub! These results were only obtained on certain nights, and these nights were nights that followed at least two days of uniform temperatures, that is, when we had been having two days with the thermometer standing between 65 and 75 degrees signals were good, but if a hot day came in between or a much cooler one (of which we have had plenty this June) then it was impossible to hear

any wireless telephone or it was very poor. When a one step amplifier was used on the poor nights the telephone came in quite clear, and on nights that no sounds could be heard with a detector alone a two step amplifier was used and again the music came in strong. In the winter the changeable temperatures will not cause so much trouble, but my experience has shown that for uniformly good results a two step amplifier is necessary.

NOTES

The State Police of Michigan are securing some wireless sets from the Signal Corps of the army. We may soon be listening in to news about prospective raids on bootleggers'

Why should we stop with "listening in" to wireless telephone, why not be thinking about a wireless sending set so that we can talk or telegraph to our neighbors many miles away. A sending set for wireless telegraph is cheap compared to one for wireless telephony.

Talking with "mush" in your mouth is not considered polite, but when you first tune in your set it sounds very much as if all the singers had been eating mush for supper and still were eating it while they sing. Music from instruments does not sound this way, and the "distortion" of received signals is not so noticeable but until you have learned to tune your set you may wonder if English is spoken or some foreign language.

Storage batteries used for detector sets must be kept fully charged at all times, as it is rather disappointing to have the signals fade away because your battery is "going dead" on you. This usually happens when you least want it to.

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The time that a receiving set never works is just when you call in your friend to hear a good concert and you end up by saying "Sorry, folks, but something is wrong with it tonight," and they go away thinking that you are a little bit "off."

THE BUSINESS FARMER