BULLETIN

Indiana Historical Radio Society

PRESERVATION FOR POSTERITY

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Indiana Historical Radio Society BULLETIN

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Bulletin Deadlines

News, Articles, Radioads--2/15, 5/15, 8/15, 11/15

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The *Indiana Historical Radio Society* is a non-profit organization founded in 1971. Annual membership dues are $10.00, which includes the quarterly *IHRS Bulletin*. Radioads are free to all members. Please include a S.A.S.E. when requesting information.

INDIANA HISTORICAL RADIO SOCIETY

ANNUAL MIDWINTER SWAP MEET

SATURDAY, FEBRUARY 18,1995

OUR USUAL LOCATION

INDIANAPOLIS HOLIDAY INN SOUTHEAST

EXIT 52 SOUTH (EMERSON) ON I-465

7:30 A.M.- 3:00 P.M. *EASTERN STANDARD TIME*

ON SITE,SAME DAY REGISTRATIONS ONLY

SPECIAL ROOM RATES IF BOOKED BEFORE FEBRUARY 4,1995

CALL HOLIDAY INN DIRECTLY AT 317-783-7751

LUNCHEON AVAILABLE AT MEETING

CONTEST

YOUR FAVORITE TABLE RADIO
INCLUDING TRANSISTORS

OTHER INFORMATION:
DR. MIKE CLARK 317-738-4649
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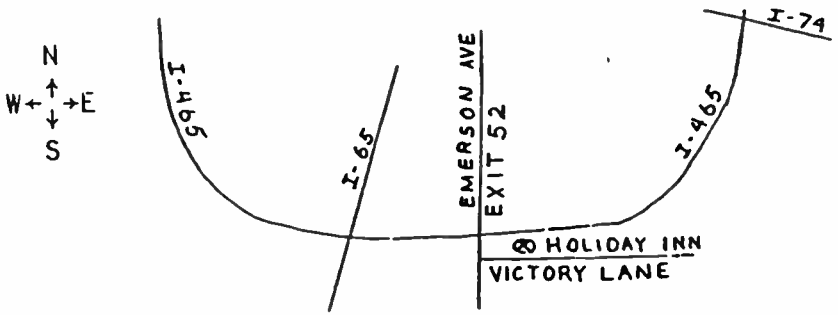

IHRS 1995 CALENDAR

Sat., February 18, Holiday Inn, SE, Indianapolis

Fri. & Sat., May 12 & 13, Ramada Inn, Kokomo

Sat., August 25, High Dive Park Pavilion, Elkhart

Sat., October 14, Riley Park, Greenfield

Minutes of the IHRS Fall Meeting
Saturday, October 15, 1994
Riley Park, Greenfield, Indiana

The weather was cooperative and we had a good turnout for the Flea Market and the Pitch-In Lunch. Many thanks to Glenn and Ramona Fitch for serving as our hosts and to all the ladies who help prepare the meal.

President Johnston opened the Business Meeting at 1:00 p.m. and Secretary Gregg read the Minutes of the Summer Meet at High Dive Park Pavilion, Elkhart IN. No corrections or amendments were made.

Treasurer Clark reported a bank balance of $2,689.35. Thirteen new members joined today and many renewed for 1995. Dr. Clark announced the 1995 Winter Meet will be February 18. A special rate will be available. Clark also announced that Membership Cards and receipts will be sent with your Bulletins; if Members want their cards sooner, please send a SASE with dues payment.

Contest: First, George Clemans with a 1940 RCA Portable. Second, Lionel Haid with a 1958 Firestone Portable (a sub-miniature tube set).

Fitch brought up the possibility of publishing a Membership List. Johnston is to discuss this at the next Board Meeting.

Johnston brought the attenders up-to-date on the latest information re the IHRS/Ligonier Museum status and fielded several questions from the floor.

Nominating Chairman Fitch submitted the following slate for IHRS 1995 Officers:

President	Herman W. Gross
Vice President	Clif Bolton
Secretary	Alex R. Whitaker and Herman Zeps
Treasurer	Dr. Michael A.Clark
Editor	James A. Fred
Historian	Dr. Ed Taylor

The election of the Secretary was conducted by ballot and Alex Whitaker is IHRS 1995 Secretary.

President Elect Gross discussed the 1995 Spring Meet, May 12 and 13, Ramada Inn, Kokomo. He will need help in several areas--volunteers are needed.

Meeting adjourned at 2:00 p.m.

Respectfully submitted, Paul S. Gregg, Secretary

Dear IHRS Friends, December 1994

Please be sure and read the quality articles in this Bulletin. These (and a start on the March 1995 issue) have been coming in to Jim Fred and to me. This is the type of material that you Members need to read in order to keep abreast of IHRS' growth. Fifty-five new members joined IHRS in 1994. I continue to learn more about putting the Bulletin to bed from Jim. We are very fortunate to have an Editor with his expertise.

The Radioads Section has been growing. We get many compliments on our color covers. We have tried to give you contest results, meeting dates well-in-advance of the meets, and have gone into detail about several of IHRS' goals. You will see that all four of the 1995 Meet Dates are enclosed. This information doesn't just fall into our laps. Members have worked to establish these dates and sites for your planning and benefit. I'm proud of the IHRS Member Recognition section that was started in Vol. 22, No. 1 Bulletin. Thanks for your input.

Probably the best news is the formation of The Tyler-Ligonier Visitors' Center & Indiana Historical Radio Society Museum, with Fred Schultz as Curator. In the September Bulletin, I told you that the Indiana 501(c)(3) from the IN Department of Revenue had not been received. Obviously, it has come through and all of the pending matters are in effect now. Also, please be sure and read the AP article that appeared in the Ligonier, Fort Wayne, and other IN Newspapers. I copied one write-up.

There is more I could say, but no words will suffice to convey my appreciation for your patience, support, cooperation, and kindnesses. Thanks. I'll think of a better way of putting my feelings after the Bulletin goes to the printer; do believe me when I say it is you who make me proud to be a part of IHRS. I have come a long way since my first 'Dear IHRS Friends' page. Thanks for the good memories.

I ask that you treat your Incoming President as kindly as you have treated me. Give him your full support.

Sincerely,

Marilyn, President

RESTORING A HOWARD 450-A

By Chester A. Gehman
R. 2, Nbr. 150 Burwell Road
Winsted CT 06098

I became the proud owner of a Howard Communications Receiver, which turned out to have excellent sensitivity and selectivity. The circuitry for the nine tubes (plus rectifier, BFO and S-meter driver) is well-designed and incorporates two unusual features: a 1.560 MHz IF for the two highest tuning ranges (in addition to 465 Khz for the other bands) which reduces image-frequency response, and a control that allows adjustment of the BFO in injection signal--very useful when receiving CW or SSB. Also, the usual band-spread dial, sensitivity control and Xtal-filter exist. (Rider X-29)

As sold, the unit was "working but required some TLC". Well, let me just say that the TLC was a bit unusual. Previously, all the paper 'firecracker' capacitors had been replaced with new 'orange-drops', along with the filters, and after locating a microphonic 6J5 audio tube, the receiver 'worked' on all bands EXCEPT band B - 1.2 to 2.8 MHz, where the sensitivity was close to zilch. Injecting a signal at the RF amplifier grid produced almost normal response, indicating trouble between that point and the antenna input terminals.

Voltage and continuity checks proved normal--neither the primary nor secondary of the RF coil was 'open' nor completely shorted, and the wave-change switch was OK. What could be wrong with the coil??? Close inspection showed it had been worked on: the soldering was not 'factory-fresh'. Also, the coil-form itself appeared to be different from the others. The coil was fastened directly to the switch terminals, so I removed it and temporarily wired it about 3" away so I could get at it. The associated trimmer had little effect, causing only slight improvement at maximum capacity, so it WOULD APPEAR that the circuit was tuned to too high a frequency. A grid-dip meter confirmed this at 3.9 MHz. A coil with shorted turns? Not likely; it is wound with cotton-covered stranded enameled wire with no evidence of physical damage. Lightning strikes usually take out the primary first. Since the soldering indicated that the coil might have been removed, could it have been replaced 'backwards'? The primary appeared to have more turns.

At this point I threw the main switch and retired to an iced tea to THINK. (My old calculus professor always suggested that as a good idea.) I recalled that back in the '30s, RCA had a recommended procedure associated with the alignment of their 'MAGIC BRAIN' front-ends. Sure enough, Rider page VII-104 refreshed my memory: a 'tuning wand', RCA part #T-6679 (T for Tool); a fibre rod with a brass slug at one end and an iron (ferrite) slug at the other. The brass end, when inserted inside the coil, lowers the effective inductance while the other increases it. I located a large brass bolt, scrounged a ferrite slug from an old IF xformer and went back to work. As I had antic-the brass didn't help, but with careful locating, the iron slug brought in all kinds of signals and noise--including WWV on 2.5 MHz--usually hard to catch considering the QRM/QRN. I glued the slug in place, touched up the alignment and finished my iced tea. Voila.

If you wish the story to end there--fine. However, I did try to reconstruct what had occurred before my adventure. I was convinced the coil HAD BEEN CHANGED, because there was no damage evident and the Q was certainly acceptable since the circuit (with the slug) resonated quite nicely. Before cementing the slug in place, I removed the coil to another bench and checked its inductance, comparing with two coils (BC & Police bands) from an all-wave Grunow. The replaced Howard coil matched very closely the primary and secondary inductance of the Grunow coil for the 'Police' band, which covers about 1.6 to 4.8 MHz, but had considerably less inductance than the broadcast-band coil. What we needed was a coil with secondary inductance somewhere between the two 'standard' ones. The usual home-type all-wave receiver is designed with about a 3 to 1 tuning range to cover the BC band in 'one jump', but many communications receivers use a smaller ratio to ease close tuning. While the Howard has a dandy bandspread dial, it also has a tuning ratio reduced to about 2.3 to one, and does not cover the BC band in one step. Because of the discrepancies found in the inductances, and becausethe replacement coil appears to be physically slightly different than its companions, I can only presume that some earlier technician, finding the B-band RF coil defective, obtained a 'standard' police-band coil and replaced same--with good intentions--but gave up when that didn't pay off. Peace unto he/she.

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IHRS Member Recognition

LEO L. GIBBS

adviser, analyst,
assembler, collector,
consultant, coordinator,
craftsman, designer, developer,
engineer, examiner, experimentalist,
ham, inspector, inventor, monitor, operator,
overseer, pioneer, problem-solver
repairman, restorer,
supervisor, tester,
theorist,
writer

Leo Gibbs was born in Chicago, May 23, 1910. He has been a ham radio operator for more than 65 years, using calls W9BSU and W8BHT. Leo is an acknowledged tube expert. His impressive list of employers and accomplishments parallel the development and maturation of the radio industry. Leo has been a Member of IHRS since 1972 and this is his story.

70 YEARS IN RADIO

By Leo L. Gibbs, W8BHT

"My interest in radio started about 1922, while in grammar school. Powerful Station KYW, started regular broadcasts. The boys in my class were talking among themselves using a strange jargon with words like 'aerial', 'galena', 'headphones', 'wire' and they talked about using these 'things' in order to receive the new station! I was not interested because I didn't know what they were talking about, and no one offered to explain anything to me. I was left out of their secret society.

"During this time, my Dad and I went to visit a distant relative, who had a son, Frank, about my age. He was sitting quietly in a doorway with two telephone receivers clamped to his ears. Curiosity got the best of me and I asked him what he was doing. 'Hear this', he said, and offered the headset to me. I was speechless when I heard music. Frank explained that the music was coming from the air and was sent out by the radio station. Of course, I was immediately interested and Frank patiently explained the various items needed to receive this wonderful phenonmenon. He gave me a list of parts needed to build my own simple crystal set. Now I knew what the 'secret society' of boys were discussing and I soon became a member of the group. Also, I read every bit of information about this new hobby that I could find.

"Gradually I increased my radio knowledge by extensive reading and by building various types of radios from crystal sets to one-tube radios. Since money was very scarce, the building of radios employing more than one tube was very limited. I received more advanced radio theory by taking radio courses at the various night schools.

"I also became interested in short-wave radio transmissions, and began experimenting with Ford spark coils.The transmitter, which I constructed at the age of 14, violated the law, unfortunately. The government had banned the use of such waves on amateur frequencies. The venture came to a sudden end. Very soon after this I was initiated by ham friends into the mysteries of CW audion tube transmission and reception, which fairly launched my radio career.

"Radio had not yet become a major industry, but the pioneer broadcasting furor was just around the corner. There were practically no radio engineers, as the term is understood today. Most of the early work outside the laboratory was carried on by men just a few years older than I. Most of these men were broadcast experimenters; technicians by day and amateur radio operators by night. Through my early contacts among this group, I was able to get help and advice about my radio problems from the only men

capable of giving it. Two of these early amateur friends were Frank Kratockvil, W9PG, who became the FCC Radio Inspector for the Fifth District and John Becker, W9HQ, who became Chief Radio Operator at the Chicago Municipal Airport.

"In 1928 I considered that I had had enough radio experience from my home experimenting to get a job in one of the radio factories that were beginning to spring up just about everywhere to meet the unprecedented demand for home broadcast receivers. Shortly before the patent fights in the radio industry had been settled and any group that had money could build a factory and get a license to build radio sets.

"Hearing of a job at Bremer-Tully, I went after the job and got it. Most factories made no pretense at mass production. All radio sets made were assembled by skilled craftsmen. Like my co-workers, I was required to assemble, wire and test complete radio sets. The sets then in production were the Bremer-Tully Nameless Five and the Counter-Phase, both TRF multi-stage neutralized units. Neutralizing methods were crude--a dummy tube with headphone was used in the RF stage being neutralized. When the signal pickup from the previous stage disappeared, the stage under test was considered neutralized.

"After leaving Bremer-Tully in January of 1929, I was employed at the Buckingham Radio Co. where I ran into the first crude semblance of modern production and testing methods. The instruments were mainly the Weston direct reading ohmmeters, voltmeters, and milliammeters. These were the new small models recently introduced to the radio market by the Weston Instrument Co.

"In the meantime, I was bringing my radio knowledge up-to-date by taking night courses at Sheldon Night School. Concurrently, I took the exams and obtained my first ham ticket. Prior to that, the amateur radio fraternity being what it was, most of my time was spent working on and operating other amateur's rigs whose calls I was thus able to use. After getting my Operator's License, I went on the air with a CW transmitter using a UV-211 fifty watt bottle in a straight Hartley Oscillator.

"Buckingham Radio was filled with radio hams in the Production and Engineering Departments, and through one of them, I got wind of a new opportunity at Thordardson, noted for the quality of their products. I started in April 1929, checking transformers for insulation breakdown at 5,000 volts. The test equipment in this plant was far advanced compared to other plants in the radio field and I was given an opportunity to bring myself up-to-date on the latest methods of testing and designing transformers. In time I helped with such work as checking the core losses, the reactance, residual magnetism and insulation breakdown of many different kinds of transformers and transformer materials.

"In 1929, The American Radio Relay League held a Convention at the well-known Sherman House in the Loop District of Chicago. Since I was a native of Chicago, I had an opportunity to attend. One of the highlights was a talk by Dr. Lee DeForest on the Audion. At the conclusion of his talk, I had what I thought was a brilliant idea. I would walk up to him and ask for his autograph. I guess I was the only one who had enough nerve to do this as no one else stirred. As I approached the podium, DeForest was about to walk away. A big, burly person--evidently a bodyguard--blocked my way. But he must have received a signal from DeForest because he stepped aside and let me pass after giving me a menacing stare. All I had was a QSL card and the stub of a hard lead pencil for DeForest to use; so the autograph was faint--but visible. As soon as I got the autograph and was walking back to my seat, it seemed that the entire group rose en masse and dashed to the stage. The bodyguard, seeing the surging crowd, whisked DeForest away. I was the only one who got his autograph that evening. I wonder what happened to it?

"From Thordarson, after a seasonal shutdown had thrown me out of work, I went to Silver Marshall briefly, and then to Metro Electric in July 1929. This plant manufactured TRF broadcast sets and vacuum tubes. They were having serious trouble with the large number of rejects coming through at the end of the receiver production line. I was put in charge;

then I was told to repair the defective receivers and put them in condition to be sold. The final tests--after repair--were alignment, current, voltage, and a 'run test'. Being in charge of plant testing forced me to think seriously of developing advanced testing methods on the production line. My Instructor at the Sheldon Night School, Mr. Zeller, placed the necessary facilities at my disposal, and I went to work. Two instruments were developed: A stable frequency oscillator, built around the then revoluntionary dynatron oscillator, and a vacuum tube voltmeter calibrated for use as a power output meter. Special tubes were developed to meet the necessary requirements for stability and arduous duty. These instruments, of course, were designed to fit the special production requirements of the plant.

"Once again, depression hit the radio industry, and I decided to go back and finish high school at Lane Technical High. I had helped build a broadcast station at the school in 1925--and because of my recent radio experience, was placed in charge of the transmitter. The station operated on 458 meters and broadcast school programs, classical music, and athletic events. Later the regulations of the Radio Conference of 1927 forced the school station to shutdown and I dismantled the station. During this period I had become President of the School Radio Club. I also worked as a serviceman in a nearby furniture store. Just before I left Lane, I designed, built, and installed a PA system for the entire school.

"In April 1932 I opened up my own repair shop on Rush Street in Chicago. I sold and serviced electrical equipment. Rush Electric closed in February 1934.

"In May 1934 I went to Stewart-Warner, where I was given my first opportunity to study superhets in operation and learn their tricks and kinks. I was taught to phase and align stages and adjust the tracking of tuning condensers. These were both very difficult due to the complicated circuits made necessary by the inefficient tubes of the day. Here, too, I first learned how to design matched impedance lines and attenuator boxes, through which test signals were fed to test positions on the production lines from a central modulated master crystal signal generator.

"From Stewart-Warner, I went to ERLA Radio in October 1934. For a time I did the same type of work. Due to my experience I was asked to fix a difficult problem vexing the company. It seems that when the new superhets went into the field and developed troubles, the local serviceman was called on for repairs. Not having the know-how or proper instruments, these servicemen sometimes did fearful and wonderful things! Many sets were coming back completely rewired--according to the mechanics fancy. Some of them were even converted from the original superhet design to TRF circuits. My job was to untangle these botched jobs and place the sets back into usable condition. Needless to say, such experience gained here later proved invaluable.

"At my home, I worked on the development of compact transmitters for aircraft use. One of the many problems was to develop a vacuum tube that was small in size and capable of producing moderate amounts of power when used as an oscillator. The filaments of receiving tubes made at the time were too delicate and failed under vibration. Visits were made to the Taylor Tube Plant, located in Chicago, for the purpose of having them manufacture an experimental triode having a fairly high filament wattage and rugged construction. Before that tube was finished, Heinz and Kaufman introduced the HK-24 Gammatron, which partially solved the problem.

"From ERLA I went back to Stewart-Warner in June 1935 with a salary increase. My job was to analyze newly designed circuits with bugs and ways of curing them, while the design was placed in production. The next promotion saw me designing and building test equipment. Stewart-Warner considered me particularly valuable for this type of work.

"I gravitated to Belmont Radio in October 1935 where I did the same type of work as at Stewart-Warner. When Belmont closed down in April of 1936, I went back to my old job at Stewart-Warner.

"In March 1937 I took a job at Bendix Radio, then a new concern founded by Vincent Bendix, that specialized in aircraft radio equipment. Among the

products placed in production were:

aircraft radio compasses
blind landing systems
shortwave transmitters, up to 2 kilowatts
itinerant flying devices
communications equipment
frequency standards

"The Armed Forces and the airlines were the chief customers. All units turned out were built to the extremely rigid standard of the various government and private contracting agencies. Bendix placed me i/c of raw materials inspection. Handling this very satisfactorily, I was then given a new job as the Quality Inspector on an entire floor of the plant. All work done by the group under my supervision was accomplished in a very well-equipped lab. This was the Final Inspection and, if a unit was passed by our group, I was responsible for any subsequent failure.

"Among the radio test equipment in the lab were:

General Radio Waveform Analyzer
" " Impedance Bridge
" " Standard Condenser
" " " Inductance
" " Vacuum Tube Voltmeter
RCA 5" Oscilloscope
Ferris No. 14 Standard Signal Generator
Precision Audio Frequency Beat Oscillator
miscellaneous voltmeters, etc.

"Mechanical, electrical, and quality tests were run on diverse items; e.g. high-powered RF amplifiers, Strowger pulse relay systems (for the remote control of frequency and band switching), dynamotor units, precision variable capacitors, resistors, ironcore chokes (for line equalizing), lock and interlock relay systems, motor generators, compass loops for direction finders, and all types of receivers.

"A typical test carried out on radio compass loops and associated apparatus may be described as follows: The 'Q' of the loop was first checked in free air; after a 24 hr. immersion in water it was checked again. The loop amplifier was checked electrically for plate voltage, current, and correct loop tracking. After these tests, the loop and amplifier were

coupled to the direction finding receiver, the assembly was adjusted for null point, orientation, and correct normal operation. All of these points, and many others, had to be compared against the standards and blueprints provided in the original contracts. Passing this, the radio compass was certified perfect by the Inspector-In-Charge, who was me in this instance. All units passed and signed out by me were my sole responsibility in the event of an air crash or accidents involving faulty operation of the units in service. In such a case, I could have been called to court for investigation and the fixing of responsibility.

"While at Bendix, I designed a new type of soldering lug that was used by the thousands on the production lines. The lugs had non-slip features to make it easier for the soldering operators. Soon after this, the Bendix plant moved to Baltimore and I did not feel like moving out there--although I was offered a good position.

"In early 1938 I started my next job at Majestic Radio in a new plant. Here again, I was placed in charge of raw material inspection. All of this experience gave me a wide insight into the properties and characteristics from the radio engineering viewpoint of all materials used in modern radio sets. This experience also gave me knowledge of the best methods for hunting down troubles in electrical and radio circuits of all kinds that were traceable to faulty material. This knowledge of the design factors underlying the choice of raw materials and subassemblies in radio was and still is invaluable.

"In October 1939, when the next seasonal layoff struck, I passed from Majestic to the Newark Electric Co. This concern was a large radio jobbing house that sold exclusively to radio amateurs, broadcasters, and servicemen. The company also offered a special type of service to its customers. If a customer--amateur or professional--struck a snag in designing or repairing a piece of radio equipment, he could call on Newark Electric for help or advice. If the advice given was not able to point out the trouble, as company troubleshooter I was sent out to do the

job. In many cases complete new circuits and transmitting set ups were designed by me to suit particular whims of the customers. This experience helped round out my background in vacuum tube theory and development.

"Times getting better, I went to Motorola in September 1940 and was assigned to the Test Laboratory. My job was to design, build, and maintain test equipment after being given a rough sketch or idea of the piece of equipment needed. In particular, I had to iron out all bugs so that no troubles would occur when the unit was used on the production lines. Some of the units I designed were a plant interphone system, a speaker-cone resonance tester, special VTVMs with amplifiers and many types of 1,000 cycle bridges.

"I left Motorola in November of 1940 for a job at the Aircraft Radio Lab at Wright Field (now Wright Patterson Air Force Base) in Dayton, OH. I was assigned as a Signal Corps Procurement Inspector of Engineering Materials. In October 1942. I was shifted to the Newark Inspection Zone in Newark, NJ, where I was assigned to a post at Western Electric's Kearny Works. Capitalizing on my past experience, I was soon made Resident Inspector-In-Charge and was responsible for approximately 140 Signal Corps Inspectors. At the same time I improved my knowledge of Administrative Engineering by attending classes at Princeton, Newark College of Engineering, and Western Electric.

"I was made the Equipment Coordinator for SCR-274-N Airborne Radio Communication Equipment early in 1943. I had to find a solution to quality difficulties encountered at the time of the inspection of this equipment. This included follow-up of the actions instituted through the normal liaison set up with the interested laboratories. I also had to study various inspection and test methods, which were used at each plant that manufactured SCR-274-N equipment or components thereof, in order that the best possible methods could be used to standardize and integrate a plan of inspection of the equipment in question. Another facet of this job was the dissemination of information to the various inspectors i/c concerning

the equipment and components, as gathered during my visits to the various plants.

"With radar equipment taking a very high priority, it was decided by the Officers of the Newark Signal Corps Inspection Zone to again take advantage of my background in my dealings with Western Electric Co. officials. In 1944 a peculiar contract was let out to Western Electric by the U.S.Marine Corps for a new and powerful radar system. Three services--The Marine Corps, The Army, and The Navy-- were interested in obtaining blocks of the equipment. My function was to watch out for the Air Corps' interests and also act as a liaison representative for the Newark Signal Corps Inspection Zone. Since the Navy was to perform the inspections with the cooperation of Bell Telephone Laboratories, it was up to me to see that all engineering changes and inspections met with the requirements set down by the Army.

"From February 1944 to March 1946 I spent a large amount of time at various Bell Telephone Labs and the Western Electric Vacuum Tube Plant. One of the many difficulties encountered was the almost continuous arcing of the type 4J magnetrons, which were used in the AN/CPS-5 radar equipment. This meant the continuous inspection of tubes on the production line and the running of power tests to locate the cause of arcing and tube-burn-outs. In the receiver portion of the equipment, one of the problems encountered was locating the cause of singing and instability in cavities using the type 466A lighthouse tube. For a short time these tubes were made at the Western Electric plant. Gain tests were made using these tubes in cavities and tuned circuits. Inspection and development tests of power tubes were made whenever troubles were traceable to tubes made by the tube plant.

"In October 1945 I was appointed IC of all Western Electric plants in the Kearny NJ area, which included the Vacuum Tube Plant and Bell Telephone Labs. As IC, I was called in for consultation and comments on vacuum tubes and radar development on contracts for the Air Corps.

"In the Spring of 1946, I returned to Wright Field as a Radio Engineer. I was put in charge of the Receiv-

ing Tube Unit of the Component & Systems Laboratory. My tasks were to write specs and review the technical portion of the tube manufacturers' bids. I also had to visit the tube manufacturers' Laboratories to talk to the engineers and get an idea of their capabilities. After a bid was accepted, I would periodically visit the plants to monitor the progress of development and discuss any necessary changes. Upon completion of the development phase. I would spend several days at the manufacturing plant to witness and verify that the tubes met all the mechanical and electrical characteristics that the specifications required.

"The end result of my work was a series of reliable sub-miniature electron tubes capable of operation at a very high ambient temperature with a minimum life of 1,000 hours, shock resistance of 500 Gs, vibration resistance of 50 Gs, and good operating characteristics up to 400 megacycles. These tubes were used in many military radios with excellent results. Other projects that I worked on were two handbooks on subminiature electron tubes, the development of a ceramic heater, the development of a high temperature beam power amplifier, and more than a score of subminiature types. I retired from Wright Field in March 1972 after 32 years.

"I have also held a 1st Class Commercial Radiophone Operator's License for many years, which gave me an opportunity in my spare time to contract for broadcast station maintenance and operation. I have worked for two stations--WAMS in Glenview IL and WONE in Dayton OH-- as a Transmitter Engineer.

"I have been in radio for seventy years and am still active. At present, I am busy restoring old radios, collecting early and unusual tubes, and operating my amateur station, W8BHT." 73

Leo L. Gibbs, W8BHT
701 Brookfield Road
Kettering OH 45429

Edited by Jim Cross
2817 Parklawn Drive
Dayton OH 45440

*****

An abbreviated synopsis of Leo's Bio

May 23, 1910	birth
1922	introduced to early wireless
1924	constructed 1st xmitter @ 14
1925 - 1927	attended Sheldon Night School, helped build a broadcast station @15, President School's Radio Club, installed School's PA system, worked in a furniture store
1/29	Buckingham Radio Co., night school, passed exam for First Ham Ticket
1929	Obtained DeForest's autograph
4/29	Thordarson
1929	Silver Marshall
7/29	Metro Electric
4/32	Owner & Repairman of Rush Electric Shop, Chicago
1934, 1935, 1936	Stewart-Warner (3 times)
10/34	ERLA
10/35	Belmont Radio
3/37	Bendix Radio
early 1938	Majestic Radio
10/39	Newark Electric Co.
9/40 to 11/40	Motorola
11/40 to 3/72 Retired with 32 years' service	Wright Field: i/c Aircraft Radio Lab, S.C. Procurement Inspector-I/C, Equipment Coordinator, Radio Engineer, and more
1/5/89	Leo's wife of 53 years died. Adele was quite a lady and many of the 'older' IHRS Ladies still miss her at our meetings.

*****

Dear Marilyn and IHRS Members November 15, 1994

Agreements have been made--papers have been signed--the difficult part is over. For the first time since our inception in 1971, we have our own Museum and control our own destiny. We have a lifetime lease for one dollar/year along with the Ligonier Visitors Center. The Ligonier Visitors Center's volunteers will be well-trained and will play a crucial part in day to day operations.

Much work has already been done with volunteer help on the building restoration. We are now waiting for state approval of the architect's drawings. The restoration will most likely cost between 40 to 50,000 dollars. We have raised about 25% of what we need and now, with our 501(c)(3) status, there are several local grants we can apply for. One we have already received in the amount of $5,000.

Another thing to remember is that a local antique mall has given us all the free space we need to sell donated items--with 100% of the income going to the building restoration fund. I cannot stress enough the value of this space. To date we have raised over $1,200. from the donation booth. One of our neighbors gave us some discarded toys. We made $50. on these toys. Items need not be antique or of great value. We can pick up items at many of the radio meets held each summer. So, if you cannot bring the items to Ligonier, please let us know so we can arrange a pick up.

The community has been very supportive. A local bank closed one afternoon so that their employes could help paint. The School Corporation sent several students to assist in some demolition. And new windows were put in free of charge by a local glass company.

The big question has always been, "When?" Our goal is late spring or early summer of 1995. I will keep all of you updated on our progress. As the building nears completion, we will need to decide many things; only one of these unanswered questions is, "What type of displays do we want?"

I thank the many members of Indiana Historical Radio Society, whose support and advice has brought us this far. A special thanks to Marilyn. You were the first one I contacted about the Museum and without your encouragement to go ahead, the Museum would have never become a reality.

Thanks, s/Fred M. Schultz, IHRS Museum Curator

Dear Marilyn, December 2, 1994

Good news! The Fort Wayne Journal-Gazette newspaper ran a very nice story on the soon to be Indiana Historical Radio Society Museum. The story was picked up by AP and sent to other news services. It was run in the Goshen News and on WOWO Radio in Fort Wayne. There may have been many other stations and papers that picked it up that we are unaware of. So we seem to be on our way. We are at this moment filling out papers for local grants and in the process of going to industry to try and get their help either through membership or direct donations. The news articles lend us the credibility we needed. We are including a copy of the article with each request we send out.

We have gotten state approval of the building plans and it is now just a matter of getting the work started. Weather will be one factor but most of the work is indoor work. We have a local plumber, who recently retired and is donating all of his services to us. We can do a lot of the work, if we are pointed in the right direction. We still figure it will take somewhere around $30,000 to be up and running by our projected opening date of mid-summer 1995.

Dad[1]. attended the Fort Wayne Hamfest several weeks ago and set up a booth there. We spread the word about the IHRS Museum and got a great response from the crowds. Next year we want to set up a booth for the Museum. We feel we could have sold a lot of Museum Memberships along with IHRS Memberships.

I think the IHRS Museum will benefit the Members by giving them a place to display their radios and by being able to tap the vast knowledge our Members possess. We would like to see the Indiana Historical Radio Society Museum eventually set up as a clearing house for radio information where years from now historians and scholars can study radio from one central location.

In about an hour we are to meet with the architect and will get the go ahead to start on the plumbing and heating systems. We have been selling Historic Ligonier Afghans and have made about $8,000 on these plus other fund raising events. So, we have some funds to start with.

This has been an exciting time and I thought you might like to share it. Yours truly, s/Marcella Schultz

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[1]. Dad is Fred M. Schultz, IHRS Museum Curator (Editor)

NEWS-BANNER, BLUFFTON, INDIANA

Monday, November 28, 1994

State radio museum to be housed in historical Ligonier building

LIGONIER (AP) — After a five-year search, the state's shrine to radios has found a home befitting the medium's golden age.

The Indiana Historical Radio Museum will show its collection of radios and radio-related wares in a building in downtown Ligonier built in the 1920s as an automobile dealership.

The red-brick building, located on Ind. 5 in Noble County, is on the National Registry of Historical Places. The new museum should be open by next summer

The museum had been located in the Auburn-Cord-Duesenberg Museum in Auburn from 1975 to 1989 and has been without a home since then.

The radios on display will initially come from the radio association's collection, including some of the 150 in museum curator Fred Shultz's personal collection. Other radios will be displayed after they are loaned by the association's members.

"The people who come through the door are fascinated by them — not only the older people but the younger people, too," Shultz said.

The museum will be a guide of radio's evolution. Shultz said radios became the center of home entertainment in the 1920s, piping in news and entertainment from around the world. Though some early radios sold new for $10 or less, some cost more than the cars that were being sold in the museum's new home.

Shultz will display radios that look like grandfather clocks or tables. Shultz's collection also contains a radio ideal for smokers, with a pipe rack, ashtray and compartments for tobacco, cigarettes and matches.

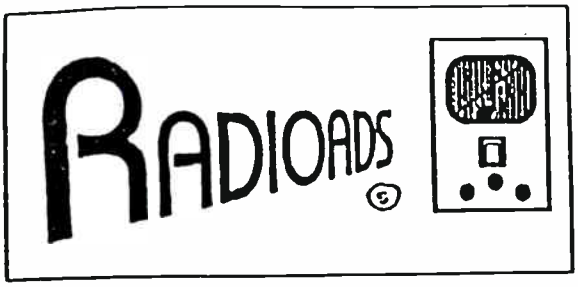
Unlike other antiques, radios aren't necessarily an investment for some buyers. Rather, Shultz said, it reminds buyers of their youth.

"The average radio has more sentimental value than monetary value," he said.

In addition to radio equipment, the museum will display advertising signs, brochures and other radio-related goods.

The museum's new building is owned by two women who feared it would be torn down. Instead of selling, they offered it to the museum and for a visitor's center for a mere dollar a year.

The building is in good shape, but will need about $50,000 of remodeling to make it accessible to the handicapped. The museum will raise the money through fund-raisers.



FOR SALE or TRADE: Scott AM/FM Phantom, very good playing condition, no cabinet, $350.00, or trade for 1928 Remler Infradyne or original muzzle-loading Rifle. Don Johnston, 3621 E / 700 N, Windfall,IN 46076-9344, Ph. 317-945-7735.

WANTED: Philco RMS year bocks, Philco Beam of Light Record Changer, "41-41", NRI course and National Radio News, Sams bound volumes 6 thru 26. Dennis Graham, 1515 Wright Dr., Sandwich, IL 60548, Ph. 815-786-8083.

FOR SALE: Have 202 copies of Radio Age March 1975 to March 93, you pick up for $110.00, also Portable multiband radio receiver with cassette player, 7 bands, you pick up $120.00. Arthur Bardish, 4042 Herman Ave. SW, Grand Rapids, MI 49509-4445.

WANTED: A manual for an RCA signal generator model WR-67A and a manual for a military rec. model BC-348-R, please note that it is an "R" and not a "Q", I have a manual for a "Q". Also have other military sets for sale. Write for your needs. Please send an SASE. **ATTENTION:** Would the fellow that had the Crosley 51 SD for sale at the Greenfield meet Saturday the 15th please call collect 317-468-7437 and ask for Loren Willis. Loren Willis, Box 282, Farmland, IN 47340.

WANTED: Telegraph, Atlantic cable, wireless, radio & TV books-pre 1940, CHAPMAN: Radio Boys Signal Island in dj, Oberg/ Jones: Machinery's Hdbk 1940-6 only. Jerry Simkin, 10 Avalon Lane, Matawan, NJ 07747.

FOR SALE: If you're going to send your sweetheart a valentine, you might as well do it right with a RADIO ! Colorful 5½X8" N.O.S. Cathedral Radio card only $1.00 + 50¢ postage-stamps PK. Harry Blesy,9S 740 Clarendon Hills RD., Hinsdale, IL 60521, Ph. 708-789-1793.

FOR SALE or **TRADE:** Baldwin Tombstone A.C., Lyric Table A.C., Splitdorf Table Batt., Workwrite Neutrodyne Table Batt, Grunow model 191 A.C., and Silvertone Wire Recorder Console. Will sell or trade. Paul E. Sommer, 16415 Viberg Rd., Leo, IN 46765, Ph. 219-627-2838.

WANTED: A 6 volt table model radio which will work on a 6 volt car battery, from 1933 and up. Working condition if possible. Jose Elias,1918 So. Gladstone Ave., Indianapolis, IN 46203, Ph. 317-356-6647.

FOR SALE: A Radio Journal about the early days of radio by a pioneer of those years. Send $9.00 plus $1.05 postage to: Russ Rennaker, 1011 Linda Dr., Kokomo, IN 46902.

WANTED: Stewart-Warner radios 1930 to 1942 and any related sales brochures, advertising displays, parts, etc. Tim Kaiser, P. O. Box 81, Newport, KY 41071, Ph. 606-441-2548.

FOR SALE: Hand painted watches with your favorite radio, $65.00, call or SASE for watches in stock now. I can custom paint from supplied photograph, $5.00 extra. Allow 6-8 weeks delivery on custom orders. Jay Volke, P. O. Box 337, Lyons, IL 60653, Ph. 708-442-0817.

WANTED: 1934, 1935, and 1936 General Electric console sets. Models M-85, A-86, and E-106. Please call 219-295-7230. John A. Checcio Jr., 2629 Decamp Ct., Apt. 124, Elkhart, IN 46517, Ph. 219-295-7230.

FOR SALE: Various AK 20-30 chassis, parts, & cabinets, Stromberg-Carlson Treasure Chest cabinet, and other "Need to thin out" parts. Jim Thomas, 915 S. Washington St., Kokomo, In 46901.

FOR SALE: Instructions and guarantee card for Kingston Products (Kokomo Electric Co. 1920's) current supply unit (Battery Eliminator) only $3.00 ppd. Harry Blessy, 9S 740 Clarendon Hills Rd., Hinsdale, IL 60521, Ph. 708-789-1793.

ANTIQUE PHONOGRAPH repairs, parts, springs, needles, via UPS, Free catalog,dealers wanted.19 Cliff St., St Johnsbury, VT o5819. Toll Free 800-239-4188 evenings.

FOR SALE: Grebe CR-9, Crosley table, and other battery and electric radios,tubes, literature, etc. Also phonographs and records. SASE for long list. Walt Sanders, 15 Todd Drive, Terre Haute, IN, Ph. 812-877-2643.

DEAR COLLECTOR: For many years my husband collected radios, all types, and amateur radio equipment. I am now closing his estate and have a large selection to dispose of.

I also have a 40+ year radio, TV, appliance etc., service shop. Many tubes, complete Sams, 1000's other service literature, test equipment, radio books etc. If you are interested in this collection please call 402-371-1630.

FEDERAL book for sale: the complete story of Federal radios made by Federal Tel. and Tel. from 1921 to 1929. Over 600 illustrations including all early Federal radios and most R.F. and audio amplifiers and parts. A full page is devoted to each early set. The article and speech by the expert, Dick Schamberger, are included. The Federal radio station, WGR, first in Buffalo is described. All Federal models are listed with the year and month introduced, cost new, and description. Two pages of references where you can find more information. This is a 64 page booklet with good quality printing. Please send $4.95 + $1.25 S & H to Larry Babcock, 8095 Centre Lane, East Amherst, NY 14051.

For Sale: Atwater Kent cabinet by Keil of Milwaukee (model 55 or 60). Made 1929. Cabinet only, no radio set. Completely restored and refinished. Excellent condition, ready for your radio chassis and speaker. Asking $200.00 or best offer plus shipping and packing or you pick up. Call or write Bill Gresham, 2711 Wells Street, Fort Wayme IN 46808, 219-483-6092. Leave message; will return all calls.

Wanted: Knobs for Zenith model H845 or C845 (Bandswitch, Zenith P/N S-53561; Tuning, P/N S-46356 -is a Lucite knob; Volume and Tone, P/N S-44167 or S-48094 - need two of these). Also, knobs and dial pointer for Zenith H723 (Zenith P/Ns 46-859, 46-860, 46-900, 59-251 (pointer)). John D. Foell, P.O. Box 562, 7083 County Rd. 11A, Auburn, IN 46706-0562, 219-637-9501.

Kingston

For Perfect Reception

THE KINGSTON B CURRENT SUPPLY UNIT insures everything Radio has to give—rich, full tone, clearness, perfect reception always! This unit met last year with unprecedented success, and this year it will attain a new high record in sales and satisfaction. Make the Kingston the leader of your fall and winter business.

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KOKOMO, INDIANA

WHAT THE KINGSTON IS

THE KINGSTON will maintain the radio set always at its perfection peak. It contains no acid or solution, operates without vibration or noise and will not heat. There are provided three different voltage terminals, each adjustable over a wide range, making possible any desired voltage from 5 to 200. A fourth variable voltage may be easily had, if desired, by connecting a separate variable resistor to one of the terminals. The primary or main current supply is controlled by a rheostat making it possible to reduce the current entering the unit to the amount actually required for any individual set, thus protecting the set against overload.

For an additional $2.50 an automatic control switch is furnished by which the Unit is switched on or off when switch on the radio set panel is turned.

Handsomely finished in satin black. Size; 9 inches long, 5¼ inches wide, 8¼ inches high. The Raytheon 85 milliampere type BH tube is used as rectifier. Fully guaranteed.

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