Indiana Historical Radio Society

BULLETIN

Vol. 3 March 1974 No. 1

BRUCE KELLEY TO SPEAK AT AWA SUMMER MEET

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The Antique Wireless Association
Regional Conference
and
The Indiana Historical Radio Society
Summer Meet

MARCONI

THE MAN AND HIS WIRELESS

Saturday, June 22 - Purdue University
West Lafayette, Indiana

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5:00 PM	The day has been planned to allow for plenty of shop talk among an exciting display of early radio gear.

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IHRS IN 1973 AND SOME THOUGHTS FOR THE FUTURE

We had a good year in 1973! We had five very interesting meetings, a very good display at the Indiana State Museum and we increased our membership from 33 to 66, a healthy 100%. As past President, I want to thank all members who have helped make this possible. It is cooperation and a spirit of sharing that makes a club click, and that spirit covers just about every member of the IHRS!

As long as we continue in this spirit of cooperation, we shall continue to enjoy the meets and activities of the club. Looking ahead, things look good for 1974. We have extended the time of our exhibit at the State Museum so we have the opportunity of inviting more people to attend and enjoy the exhibit. The Fort Wayne members are now preparing a Radio exhibit for Swinney Park Museum. Lafayette members are busy expanding the Radio exhibit in the Tippecanoe County Museum. We have a joint meet scheduled in June with AWA at Purdue University. I'm sure there will be other interesting activities before the year is over.

I think it is important and timely to encourage members to share information, to document Radio History while we are all here to do so. Otherwise, later generations will not know the fabulous story of the beginning of Radio that took place in our own time in history. I will always be grateful that the Good Lord chose to place me in this time slot so that I could experience the magic of Radio by building sets as a boy, majoring in Radio in college and following a career in electronics. I shall always remember the thrills of DX reception on a home made set, first broadcasting and then short-wave circling the world!

So let's get with it, fellows. It really isn't difficult to transcribe your knowledge to paper, just "Tell it like it was." A natural project for our club is to prepare a history of Indiana Radio Manufacturers. Each member could gather information from his own area and we could put it all together in a special edition of our Bulletin. I'm sure there are many more good projects for the club, so "keep those letters and cards coming."

Ross Smith

FORT WAYNE TO HOST SPRING MEET IN MAY

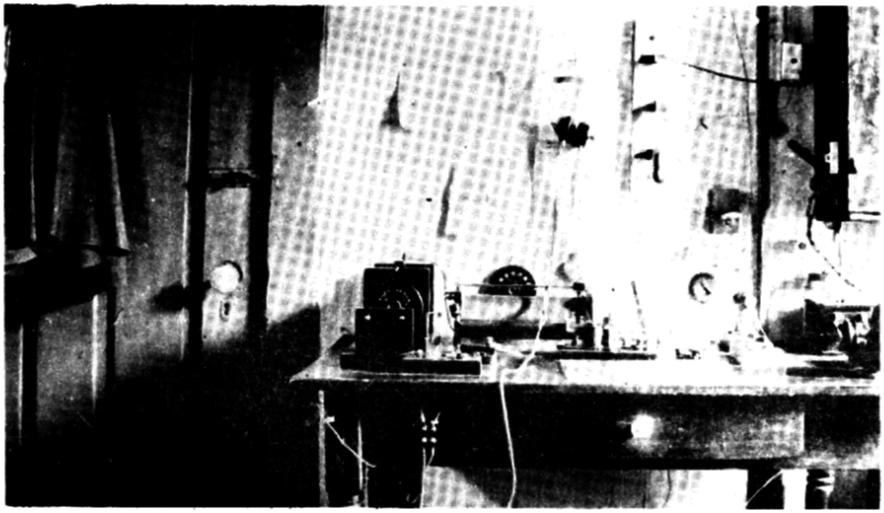
DETAILS TO ANNOUNCED SOON

EARLY AMATEUR WIRELESS STATION

Pictured here is the wireless station belonging to Marshall Howenstein, who lived in Goshen, Indiana back in 1916–17.

The station consisted of a tuning coil, loosecoupler, loading coil and Murdock 'phones, all purchased from Sears & Roebuck. The crystal detector was home made. The transmitting equipment consisted of a half inch spark coil–a la Sears, a home made Leyden jar condenser and spark gap and a key. The power source was drycells. The antenna was three wires strung from the house chimney to the barn, a distance of about 95 feet.

A large lightening arrester can be seen on the wall, also home made; however, if lightening had ever struck, the entire equipment would probably have burned up.



The transmitter covered a distance of about two miles, but since it was an untuned circuit it could not be cut out by other wireless receiving sets in the area. Mr. Howenstein recalls one instance when he was sending C Q that a high school wireless operator answered him and laid him low with "Get the hell off the air, I'm trying to talk to 9SX."

NAA at Arlington, VA, came in regularly each night with time signals and the weather reports at 10 o'clock. It was a real thrill to be able to pick up these signals out of the night air on a cold winter evening.

Have any of you had this experience?

Repair those Audios

by

Walt Sanders

If you are like most collectors of the old battery radios who restore their sets to playing condition, you are constantly hunting for spare audio transformers, robbing "parts" sets, trading, etc., to replace the originals which have open windings. And most of the replacements differ enough from the original so as to detract from the appearance of the set.

Many audios with open windings can be restored to original condition without removal from the set and without the use of any extra parts. And the repair can usually be made in about 5 minutes. Sound incredible? Here is how you do it: impress a high DC voltage across the open winding for a short time. Repeat several times if necessary. That is all there is to it. Presto - the defective audio is now as good as new.

Of course, it doesn't always work (my experience has been that it works about 3 times out of 4). But then you are still free to replace the transformer, resistance couple around it, or replace the windings with ones wound by you, by hand. When it doesn't work you are no worse off than you were originally.

The reason this procedure works is that the high voltage creates a spark across the open gap, fusing the wire together again. But it only works about 75% of the time because sometimes there are multiple breaks in the wire, or the break is widely separated, so that one cannot force a spark across the gap without burning out the winding.

You should exercise some care in using this method. Excessive voltage or application time will burn out the winding. For audio transformers I have found 300-400 volts DC to work well. This voltage should be applied for about 4-5 seconds to an open primary winding, and about 1-2 seconds to an open secondary winding. Attach one high voltage lead to one end of the open winding and touch the other lead to the other end of the winding for the appropriate time, then break the circuit by removing the lead. If the break has healed you will see a small blue spark when the circuit is broken. If an application of high voltage does not heal the winding, repeat. If 15-20 applications fail to heal the open winding the unit probably is not repairable by this method. You may have success, however, by increasing the voltage or the time.

The method applies to most open coils, but very delicate coils are easy to burn out, and you will need to experiment with low voltages and short intervals of time to avoid permanent damage to the coil. I have repaired E.M. Speaker fields, RF Coils, and horn speaker windings this way.

Good luck on your repairs

INDIANAPOLIS HOSTS JANUARY MEET

The first IHRS Meet of 1974 was held at the Indiana State Museum in Indianapolis, Indiana, on January 12. Heavy snow and bitter cold caused many members to cancel plans for attending. The program nevertheless, was an interesting one and afforded members the opportunity to visit the IHRS radio display in the museum. Mr. Ed McNay of the Indiana Vocational Technical College discussed the problems encountered in neutralizing an antique receiver. Following his discussion an AWA slide show was presented about the evolution of wireless communications with emphasis on various types of wireless keys.

A short business meeting was conducted before the program. The women were escorted to a local flea market for an afternoon of entertainment. During the morning and immediately following the program members had the opportunity to visit Ed Taylor's Radio Museum. The IHRS extends its appreciation to the Indianapolis members who made this program possible and to Bruce Kelley for the use of the AWA slide show.

SENATORE GUGLIELMO MARCONI

G. Marconi

Guglielmo Marconi was born in Bologna, Italy on April 25, 1874. He was the second son of Giuseppe Marconi and his wife Anna, who was the youngest daughter of Andrew Jameson of Daphne Castle and Fairfield,Enniscorthy County Wexford. His father was of the Catholic Faith, his mother of the Protestant. This was "papa" Marconi's second marriage, his first wife having died during childbirth when a son, Luigi, was born.

Marconi's triumph lives with the "radio," although he chose to refer to it as "wireless." In later years scientists chose to change the name of wireless to radio, since the waves radiated in every direction; thus the name radio remains today.

Maxwell has discovered the "ether"; Hertz, the "waves"; Marconi enlivened the ether by making the waves more powerful, and he supplied the missing link in wireless by inventing the instrument to receive them.

Rugged individualism was a potent force in science during the 19th century. Bell with the telephone and Morse with the telegraph were giants of this inventive age, as was Edison and numerous others. Today the glory of discovery is divided and no one man wears the crown. Invention is a laboratory product, a complex mathematical approach, and no longer the evolution of a simple idea born in the solitude of some visionary youth's attic workshop. Not so with Marconi.

Having read about Benjamin Franklin's experiments with a kite during a thunderstorm, and how Franklin proved lightning to be electricity, Marconi erected a spear-like zinc contraption on the roof and connected it to apparatus inside the house. When sufficient electricity was collected, a bell jingled.

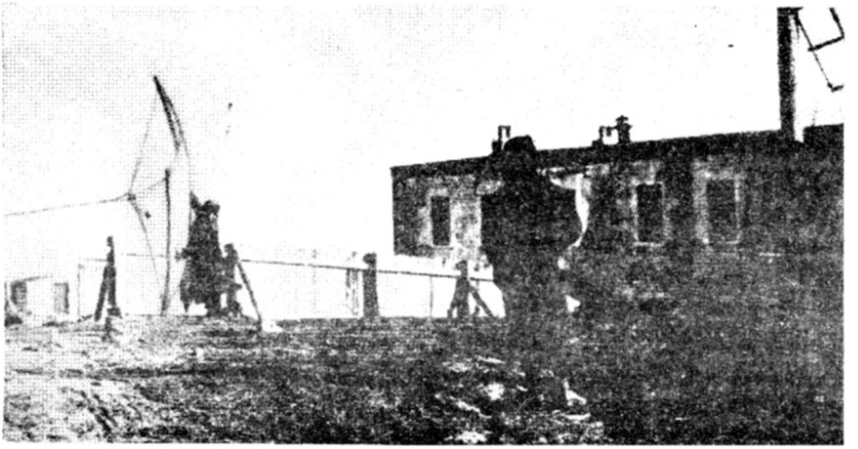
The summer of 1894 found Guglielmo and Luigi in the Italian Alps on vacation. It was during this time that he picked up an electrical journal in which appeared an article describing in detail the work of Hertz, who had died in January of that year. The story told how Hertz radiated electromagnetic waves with an electric oscillator he had developed, and how little sparks appeared in the tiny gap of a metal loop across the room, although there was no connecting link except the air. There was the germ of an idea and Marconi had time up there in the mountains to think it over.

"It seemed to me," related Marconi in a lecture years later, "that if the radiation could be increased, developed and controlled it would be possible to signal across space for considerable distances. My chief trouble was that the idea was so elementary, so simple in logic, that it was difficult to believe no one had thought of putting it into practice."

The idea that had shaped in his mind's eye made him restless, and upon arriving early in the autumn at Villa Grifone in Pontecchio, he lost no time in going to his third-floor workshop -- the first Marconi laboratory. Within a month or two he was ready to test his idea. The spark sputtered across the induction coil's gap faithful to the laws of physics, but there was no sign of electrical life at the receiver. He rearranged the instruments and tried again and again, but nothing happened.

Many months passed as he experimented with various types of equipment. In fact he worked so long and hard that he lost weight and his mother became worried about his health. His brother, Alfonso, was always on hand to give assistance when needed.

It was Autumn of 1894, after perfecting some of his instruments, that he invited his father and mother upstairs, and in the presence of Alfonso, he demonstrated that he was able to ring a bell on the ground floor by pressing a button on the third floor without any connecting wires. Marconi, the wizard, had accomplished the impossible, and the age of wireless was born.



THE KITE THAT PICKED UP EUROPE

For the entire, fascinating story, you must read "MARCONI, THE MAN AND HIS WIRELESS" by Orrin E. Dunlap, Jr. The Macmillian Company, 1937.

FRIENDLY EXCHANGE

FOR SALE - 2000 Radio and TV tubes at $1.00 to $3.00 each, old radio dials $2.00 to $5.00 each. Write your needs. James Fred, R 1, Cutler, IN 46920.

FOR TRADE - Pacific Claratone (1925, TRF), Western Union telegraph sounder. Need wireless gear for early spark transmitter, tuning condenser or loose coupler. Marshall Howenstein, 807 Elm Dr., West Lafayette, IN 47906.

FOR SALE OR SWAP - Send SASE for number of duplicate radios. Need knobs for Crosley RFL-75, 52SD and Grebe CR-9, front panel for Crosley 51, loop for DeForest 7A. Bob Lane, 2301 Independence Ave., Kansas City, MO 64124.

FOR SALE OR TRADE - Model 60AK Highboy, with sliding doors, Model 55 Loboy, both Atwater Kents, restorable and in playing condition. Model 140 RCA Table model, rough but in playing condition. Need a 2A7 tube. SASE appreciated. Del Barrett, 1517 Pacific Drive, Fort Wayne, IN 46819.

WANTED- DeForest spherical audien or old tubes of this vintage for my collection. Will trade old battery radios or pay cash. Lee L. Gibbs W8BHT, 701 Brookfield Road, Kettering, OH 45429.

FOR TRADE - Have cylinder phone for battery radios of equal value. Can anyone recon a WE 540 AW speaker. Geo. Hausake, 1922 E. Indiana St., Wheaton, IL 60187.

WANTED - Two DeForest Audio Transformers, good or open, for DeForest D-17. Ross Smith, 1133 Strong, Elkhart, IN 46514.

WANTED - Books on Marconi, need not be old. Gary A. Vierk, 2505 Kickapoo Drive, Lafayette, IN 47905.

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RADIO AT REFORMATORY

The New Jersey State Reformatory for Boys, at Rahway, will install a complete wireless receiving outfit for the benefit of the 500 inmates. The complete set with amplifiers is the gift of the Radio Corporation of America. Boys will be permitted to attend concerts every night provided their conduct has been good during the day. Wireless Age 1922.

C. Brandes, Inc., Establishes Canadian Factory

C. Brandes, Ltd., has been incorporated at Ottawa, Canada, and a factory leased at Toronto, Ont., for the manufacture of the well-known Brandes head telephones. C. Perkins, Ltd., Montreal, has been appointed Canadian representative. The popular price of $8.00 for the superior headset will be maintained in Canada. Wireless Age 1922.

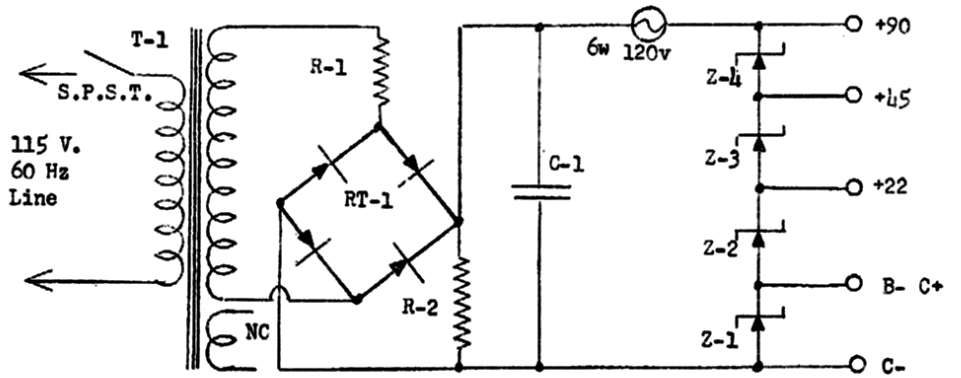
B - C BATTERY ELIMINATOR

By Ed Taylor

A companion "B-C" battery eliminator (to go with the "A" eliminator featured in the last I.H.R.S. Bulletin) has been field-tested by several of our members. It was found to work satisfactoraly; it is easy to construct. Zener diodes are connected directly across binding posts. A 6 w. 120 v. lamp is mounted in a pilot "bulls-eye" on the front panel to indicate when the unit is turned on. If there happens to be a short in the receiver circuit, the light will get brighter.

From past experience it is recommended that no more than 90 volts be applied to the antique sets. The old audio transformers and speaker windings tend to wink out at any higher voltage. For satisfactory operation it is best to use the lowest "B" voltage practicable even though some of the radios have terminals marked 135 v. or 180 v.

Both the "A" and "B-C" solid state battery eliminators may be combined in a larger cabinet if desired. They were designed to operate most 5 tube "three dialers". These battery eliminators give regulated, humless power to the old timers.



PARTS LIST

T-1	Transformer 135v sec.	(Stancor PA-8421)
RT-1	Bridge Rectifier	(Mallory FW500)
C-1	Capacitor 1100uF 150v.	(Mallory CG112U150K1)
R-1	Resistor 10 ohms 5 w.	(Mallory 5AE10)
R-2	" 10,000 " 10 w.	(Mallory 10AE10,000)
Z-1	Zener Diode 7.5v.	(Mallory ZB7.5)
Z-2	" " 22 v.	(Mallory ZB22)
Z-3	" " "	" "
Z-4	" " 47 v.	(Mallory ZB47)
	Cabinet 6 X 5 X 4"	(Bud CU2017-A)

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CARBON FILAMENTS IN EARLY TUBES

by

Robert G. Middleton

Carbon filaments were used in British Marconi Fleming valves, in DeForest-Hudson ultraudions, Wireless Specialty (Pickard) triodes, Underwood-Edison triodes, various experimental tubes, and in WW-1 German ballast tubes. An early Fleming valve is illustrated in Fig. 1. These valves used filaments of carbonized cardboard or bamboo strips. A DeForest ultraudion is shown in Fig. 2. This type of audion had a filament of extruded carbon paste. Two grades of ultraudions were manufactured, termed the S or standard, and the X or extra sensitive. Although platinum filaments were used in American incandescent lamps in 1878, they were not utilized in tubes. Carbon-filament lamps were introduced here in 1879, osmium in 1898, tantalum in 1906, and tungsten in 1907. However, the carbon filament was invented in England by Joseph W. Swan in 1848. These first incandescent lamps were short-lived, due to lack of good vacuum pumps at that time.

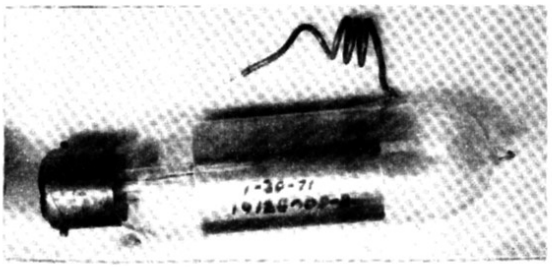

Fig. 1 Fleming valve

DeForest ultraudion

Fig. 2

Radiotorial Comment

Since the beginning of the IHRS over two years ago it was clearly known that a Bulletin was needed if the organization were to grow. As my term as first President of the Society ended I felt I could be more effective in promoting the growth of our organization as editor than as president for another term. Both offices could certainly not be handled by one person.

I have tried to upgrade the quality of each bulletin in line with the development of our Society. I continually get outstanding support from a few dedicated individuals who wish to see this thing develop. If this Bulletin is to continue in its present form I must have the support of every member through contributions to the Bulletin.

The Bulletins are being published in February, May, August and December for the calendar year of 1974. Bulletin material must be received no later than the 25th of the month preceeding the month of publication. April 25th is the deadline for material to put in the May Bulletin.

The following material is needed if the Bulletin is to continue in its present form. 1. Ads for the Friendly Exchange column. 2. News for the News Bulletin column. 3. Material for the Restoration column. 4. A B and W photo and a description of an interesting radio you have in your collection. 5. News of your area that would be of interest to other members. 6. An article about yourself in connection with the golden era of communications. Address all Bulletin material to the Editor so I can begin the next issue.

Gary A. Vierk

Restoring Antique Radio Receivers

Panels

Antique radios were manufactured with Bakelite, Formica, or hard-rubber panels. In some cases, panels are in poor condition. Most panels are engraved, as exemplified in Fig. 7-16. If the markings are not clearly visible, first clean the panel with a moist cloth. In case additional attention is needed, the engraved lines can be filled in with white lead or with chalk. White lead is retained better, but is not as easy to work with as chalk. After the filling-in is completed, it is necessary to go over the panel lightly with a dry cloth to remove white smears from the surface. The chief panel defects are scratches and cracks. Hard rubber also tends to warp badly over the years. In general, scratches cannot be repaired, although a light coat of furniture oil polish on the panel will make scratches less visible. Cracks can be repaired to some extent by cementing the broken edges together with plastic cement. Be careful to wipe any excess cement from the surface of the panel before it dries.

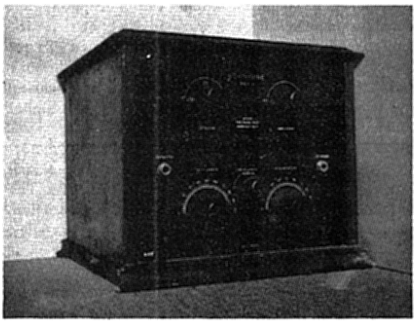

Fig. 7-16. Antique receiver showing engraved bakelite panels.

Although panels can be replaced, this is usually a "last resort" measure, because the engraving is then discarded. It is impractical for the usual collector to reproduce the engraving, because it involves highly precise machine operations. If a panel is replaced, it may not be possible to duplicate the original material. For example, hard-rubber sheet is almost impossible to find. Bakelite is sometimes available from large plastics manufacturers, but must usually be purchased in wholesale lots. Formica is quite similar to Bakelite, and is more generally available. Most of the Formica used in the building trades is $\frac{1}{8}$ inch thick, whereas most antique radios have $\frac{3}{16}$ inch or $\frac{1}{4}$ inch panels. In a pinch, a pair of $\frac{1}{8}$ inch Formica panels can be cemented together under pressure to make up a $\frac{1}{4}$ inch panel.

Formica is occasionally available at surplus stores in $\frac{1}{4}$ inch sheets. This stock provides an identical replacement for the Formica panels used in antique radios. Nearly all radios used black panels, although a few manufacturers chose brown Formica or Bakelite. When a substitute material must be used to replace a defective panel, it is advisable to look around for black Acrylite. This is a generally available plastic material that has a high surface polish similar to Formica or Bakelite. However, Acrylite lacks the tough and hard texture of the laminated thermoplastics. Thus, it is easier to cut and drill, but is also easier to scratch. Its appearance is very similar to Bakelite, and it is a satisfactory replica.

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	DELBERT BARRETT, 1517 Pacific Dr., Fort Wayne, IN 46819

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news roundup

ROBERT G. MIDDLETON (Santa Cruz, CA) found a rotary spark gap that looks like a Halcum. It has good electrodes, and apparently has never been used. Does anyone have a pair of fixed electrodes to go with this.

GOERGE E. HAUSSKE (Wheaton, IL) added a J-5-A key and a Stewart Warner set to his collection.

ROSS SMITH (Elkhart, IN) picked up a nice DeForest D-17 for his collection.

JOE DURAY (Fort Wayne, IN) is the owner of a Zenith R1.

GARY A. VIERK (Lafayette, IN) located a crystal set made by the Radiophone Corporation in Detroit, MI. Does anyone have information about this company.

RONALD THOMAS (Indianapolis, IN) got a Magnavox R-3 at the Indianapolis meet.

WARREN JOHNSON (Fort Wayne, IN) has added the following to his collection; an Ace type AVA tuner (1921), a Hammarlund Comet Pre shortwave receiver (1932), a Radiola III and Balanced Amplifier with tubes. Warren has been busy expanding his collection of early tubes with such items as Moorheads, WE 221D, 239A, 264C, 708, Telefunken RE-58, and a DeForest DV-3a in the original box.

JOHN E. TSCHOPP (Barrington, IL) found an Andrews Deresnadyne receiver and a bushel basket full of parts at a garage sale.

DEL BARRETT (Fort Wayne, IN) acquired an Emerson Baby Grand made by Clapp-Eastham. This is a one multivalve regenerative receiver.

BOB HELLIS (Estes Park, CO) picked up a rare Ediswan ES-1 Triode made by Edison and Swan in England in 1916. Bob also added a one tube AIR PHONE.

MARSHALL HOWENSTEIN (Lafayette, IN) has been busy constructing a display board to hold his land-line telegraph equipment.

FORT WAYNE MUSEUM DISPLAY ALMOST COMPLETED

The Fort Wayne members are busy putting finishing touches on the display of early radios in the local museum. The display includes; crystal and small radios, homemade receivers, factory made sets, and early AC sets and material of the 30's.

KANSAS CITY MUSEUM DISPLAYS OLD RADIOS

Dr. Robert Lane and Brian Cook assembled a display of early radios for the Kansas City Museum. An 80-slide tape show about the history of radio was also prepared for the event. Collectors came from many miles to see the program. The reception was so good that the Museum has asked for a return engagement next year.


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