

NATIONAL

RADIO

NEWS

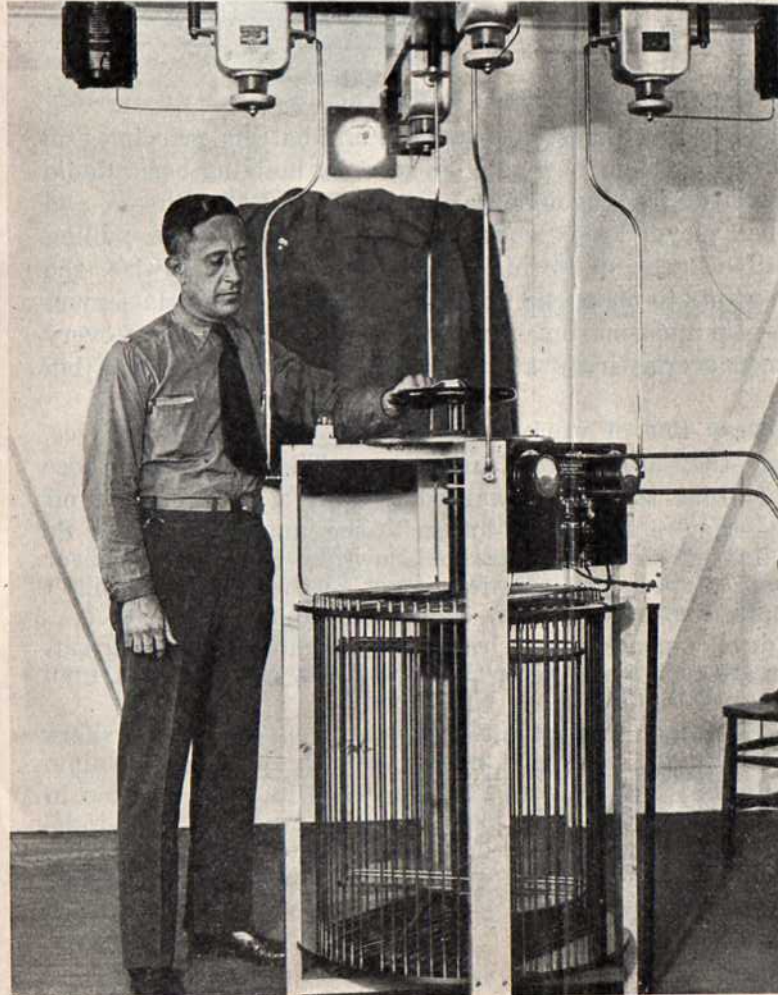


FROM N.R.I. TRAINING HEADQUARTERS

Vol. 2—No. 2

WASHINGTON, D. C.

SEPTEMBER, 1929



In This Issue---

**Philco A C
Screen Grid**

**Plane Talks
With London**

Radio's Future

Hum Voltage

**Sizes and
Resistance of
Wire**

**The N. R. I.
15 Years Ago**

**For Story on
Cover—
See Page 15**

Be Better and you'll be a Big Leaguer

A SHORT time ago Willis Hudlin, ace pitcher of the Cleveland Indians, paid the Institute a visit. I learned a lot from him about big-league baseball men. In a way a big-league baseball man is like the big-league Radio man. Both start at the bottom. Both have to master the funda-

mentals. The ball player learns base-running and batting principles on the sand lot team; the Radio man gets his start by building basic Radio circuits and mastering the fundamental principles of Radio theory and practice. The ball player keeps working, keeps training, keeps pulling his way up until he gets in the big league class. And, likewise, the Radio man who wants to make the big-pay, big league Radio class must keep digging in—he must master every lesson, take advantage of every opportunity—keep everlastingly at it, always climbing up to the big jobs in Radio.

In nearly every line of work there are the well paid executives, the trained men—they are the big-league men. Then, there are those who waste their time, those who wanted to wait a while, put it off until tomorrow—they're the "sand-lotters"—the untrained men. So the world has its full share of untrained, low-pay men. They never realized they had to specialize in order to get to the top—they didn't know that training was necessary, or they just didn't care.

In Radio, developments are so rapid, opportunities are so great, and N. R. I. men are such a big factor that practically every N. R. I. man can be a "big-league" Radio man—a big success!

We back N. R. I. men to the limit. We want you to get your share of the big jobs in Radio. And that means careful, thorough training.

Willis Hudlin would tell you that if you want to reach the top in Radio—or in anything—you must have practical training, stick-to-it-iveness, and an honest-to-goodness desire to get there—to be somebody. And Hudlin knows—he is a sure enough "big-league" man in every sense of the term, and—here's a surprise for you—he's an N. R. I. student himself!



President Smith and Willis Hudlin at N.R.I. entrance.

J. E. SMITH.

New Jersey Plane Talks With London

By Member N. R. I. Technical Staff.

On a number of occasions in the past, new possibilities in communication by inter-connection of wire and radio circuits have been demonstrated.

Recently, another demonstration of this character was made when a group of press representatives flying over northern New Jersey in the radio equipped airplane of Bell Telephone Laboratories were connected with the British representatives of their organization in London by a combination of wire and radio circuits.

Passing between the airplane and the Bell Laboratories' ground station at Whippany, New Jersey, by radio, the conversations were then carried to and from New York by a telephone circuit of the usual kind. In the long distance office of the American Telephone & Telegraph Company in New York, the circuit was split, the east-bound channel passing by wire to one of the trans-Atlantic radio transmitting stations, thence by radio to a receiving station in England, and to the long distance office of the British Post Office in London.

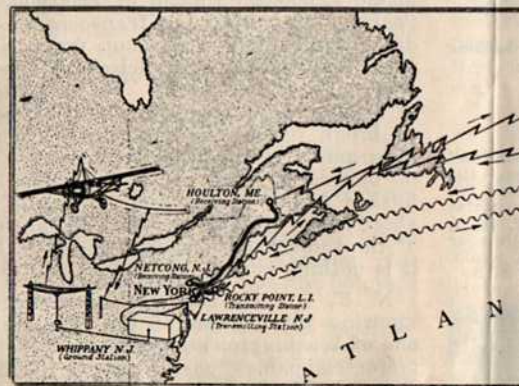
From the office in London, where the British representatives were assembled, the conversation passed over an ordinary telephone wire to and from the long distance office in that city, where the west-

lips, and pressed a button which enabled him to talk to the ground station. This action disconnected his receiving circuit. When his voice reached the ground by radio, it operated a relay which disconnected the radio transmitter. As soon as he was silent and released his transmitter button, the upward circuit was ready for conversation to come to him from the land wire. A somewhat similar arrangement is a part of the trans-Atlantic radio circuit except that there all the operations are performed by voice-actuated relays. The voice of a person talking over the trans-Atlantic radio circuit clears a path in front of itself and closes the path in the reverse direction.

Technical details of the new apparatus are as follows: The receiving set in the airplane consists essentially of four tubes, three of which are of the screen grid type, while the fourth is of the three-element heater type. It has two stages of radio frequency amplification, a detector and 1 stage of audio frequency amplification. Due to the employment of the space charge grid detector circuit, the set is extremely sensitive.

The set operates from a generator which is driven by the action of the wind on a small propeller and has a total weight of less than 7 lbs. This generator supplies both 9 volts and 220 volts to the receiver.

The transmitter has a carrier power of 50 watts. The output and full modulation is 200 watts. A frequency range of from 1500 to 6000 kilocycles is provided and the operating frequency is maintained under all conditions. To accomplish this, a crystal oscillator is used.



bound channel was separated and carried over a wire circuit to the English radio transmitting station. After being received in the United States, this channel passed over a wire circuit to the long distance office in New York where it entered the two-way wire channel to Whippany.

When the speaker in the airplane desired to talk, he held a microphone to his

Power for the transmitter is obtained from a separate direct current generator driven by the wind. Special control is provided to maintain constant speed of this generator with varying air speeds.

When the airplane radio receiver is disconnected from the headphones by operating the transmitter push button, the headphones are connected to the talking circuit so that the speaker can hear his own voice. This is of great importance to the noisy surroundings of an airplane because it gives the talker a rough check of the loudness of his own voice.

In Our Mail Bag The Future of Radio

By AUSTIN C. LESCARBOURA
Editor, Radio Manufacturer's Monthly.
Associate Editor of Radio Engineering.

"To one who has been privileged to see his inventions develop from crude experiments to world-wide institutions and industries far beyond the wildest dreams of fancy," states Dr. Lee DeForest, inventor of the audion or three-element vacuum tube now in universal use, and also the Father of Radio, "the role of prophet presents problems in unrestrained imagination rather than in conservative deduction. So, in attempting to look ahead in Radio developments, I am moved to be as rash as possible in my predictions, fully confident that in so doing I shall make a better guess than the more timid prophets of today."

Even present-day radio achievements are hardly realized by the so-called Man in the Street. Few of us realize the extent of the broadcasting institution created less than a decade ago. We cannot grasp the significance of over seven hundred broadcasters catering to an audience of well over 35,000,000. We overlook the 13,000 miles of wire employed by one network alone in grouping together far-flung stations for simultaneous broadcasting of programs. We never give thought to an industry that has grown from an annual income of about \$2,000,000 to one of \$600,000,000 yearly. We forget the transoceanic radio circuits that reach out from New York City and San Francisco to almost every part of the world. We only think of marine radio when some ship happens to break in on our favorite broadcast programs with its dot-dash tongue. Few of us realize that radio programs are flashed across oceans and continents by short-wave transmitters. The present of the radio art is indeed wonderful, but it is nothing compared with its future.

N. R. I. men may be interested in knowing that busses of the Gray Line, one of Washington's biggest sight-seeing motor companies, pass right by the National Radio Institute Building and the Institute is pointed out by the guides to all passengers as the oldest and largest Radio home study school in the world. N. R. I. men visiting Washington will also find this a convenience for it will afford you the opportunity of locating the Institute easily in order to stop off and pay us a visit.

"A home without a Radio is like a house without a window."—Arthur Brisbane.

"Since enrolling I have, by my spare time Radio earnings, paid all of my college expenses, bought a second-hand coupe in very good condition, purchased three new suits, hats, overcoats and had nearly everything that a boy in college could desire. I think that is a wonderful record for one in college to make. As a rough estimate I should say that besides attending college the past nine months, I have earned around \$850." Mr. Lynn K. Chapman, 418 Oak Avenue, Waterloo, Iowa.

"The first week I took in \$60.00 for repair and service work without any paid advertising. N.R.I. training puts me in a position to do work that others will not tackle." Mr. Leroy Brownson, 2004 Walnut Ave., Venice, Calif.

"You are giving me as good training as a private teacher would give. You take such interest in me that it puts PEP in me." J. C. McDowell, 721 Pope St., Newberry, S. C.

"I've 'cashed in' on plenty of side jobs and now I have a part-time shop. My best week was \$101.00." Mr. H. E. Trautmann, 2406 Arlington Ave., Pittsburgh, Penna.

"I now have my license. The N.R.I. course sure made that exam easy. I made 93 on the theory. I have seen many text books and talked to students from other schools, but I have not heard of a course that really teaches every angle of Radio as the N.R.I. course does." Mr. M. Sanderford, 1527 So. 4th St., Waco, Texas.

"In Warsaw I knew your student, Mr. Musnicki, well. His father was a famous General in the Polish Army at the time of the Boxer uprising. Mr. Musnicki is intensely interested in Radio Engineering—is tremendously ambitious and 100% wrapped up in the possibilities of Radio. He'll go far if encouraged." Merle Scott, General Secretary, Honolulu, Hawaii, Y. M. C. A.

Student Musnicki is doing fine—we're backing him to the limit.—Editor.

From California

Student L. N. Morriss of Los Angeles, "peps up" things for N. R. I. everywhere he goes. His unique advertisement not only gets good leads for Radio service and repair work, but it also starts others to thinking and talking about N. R. I. More power to you, Morriss—a man with your initiative and ability ought to go far in Radio. J. E. S.



National Radio News

Published monthly in the interest of
N. R. I. students and graduates, by the
NATIONAL RADIO INSTITUTE
16th and U Streets, N. W.
Washington, D. C.
J. E. SMITH, Publisher. E. R. HAAS, Editor.
Copyright, 1929.
NATIONAL RADIO INSTITUTE

Washington, D. C. September, 1929

Every Month Now!



TWO years ago the National Radio News was put out three or four times a year. Last year it was published every two months. But from now on you will get the News every month!

This magazine is yours. It is published in your interest. In its pages we want to bring to you every

month the latest news on receiving sets, television, talking-movies—the new developments in all fields of Radio. Each copy will have a service manual on some new Radio set giving the schematic diagram and other helpful, technical information.

It costs the Institute quite a bit of money to get this magazine out. The postage alone each month is over \$250. But we believe we can make the News worth even more than that to you and other N. R. I. men. We want the News to be a sort of free "service station" for N. R. I. men to give you tips and pointers and profit-making ideas.

This growth of the News has been made possible by the loyal cooperation of our students and graduates. But it cannot keep on growing unless it continues to get the support of N. R. I. men. Tell us what you like about it and what you don't like about it. Contribute articles yourself from time to time. Many students have ideas about servicing and selling Radio sets that would help other N. R. I. men in other parts of the country. Whenever you have some good ideas on selling or servicing sets—shoot them in and we shall publish the best ones. Send in stories of any special Radio job or installation you have made. Cooperate with the editor of the News and he will try to give you in return the kind of information and practical tips you want. Let's all work together—make the News the most helpful, result-getting student magazine in the old U. S. A!
E. R. HAAS.

An Open Letter to N. R. I. Men

I wonder how many of you men are reading the special informative articles on various Radio topics that Mr. Smith is writing for newspapers and magazines? They appear from time to time in various papers and magazines—usually on the Radio pages. They are planned to give N. R. I. men valuable publicity and advertising, and it will pay you to keep on the look-out for them and bring them to the attention of your friends. They will go a long way toward acquainting your friends with N. R. I. methods and the N. R. I. influence and ought to help some in building up your own Radio business. You can help us check up on these by sending any articles you find to us after you are through with them.

N.R.I. Publicity Director.

The Farmer Goes in for Radio

Cash in on the growing farm market for Radio apparatus of all kinds. The farmer is being interested, as never before, in owning a good, up-to-date Radio set.

It is a business necessity to him as well as a means of entertainment for his family. Crop reports, weather reports, market information and much other data that's invaluable to the farmer today is being put on the air. Every farmer must have a set.

Furthermore, Radio manufacturers are giving special attention to the farmers Radio needs and are getting out improved types of battery operated sets equipped with screen grid tubes and other new features. There's a big market being opened up. N. R. I. men in the rural sections should get in on the sales and service profits!

"There is only one recipe for success and that is to keep at it—to keep everlastingly, tirelessly, doggedly striving for the thing you want."—Judge E. H. Gary.

"The human will can overcome any obstacle or any handicap, if a man has backbone enough to use it."—Thomas A. Edison.

