

# NATIONAL



# RADIO NEWS



**FROM N. R. I. TRAINING HEADQUARTERS**

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## BANNER RADIO YEAR AHEAD



**F**ROM all indications 1930 will be Radio's Banner Year. It will offer more in Radio opportunity than at any time in the past. Here are some of the reasons why N. R. I. men can count on a big year right ahead—

First, there is Television. Some have felt that Television would be in the homes by this time, but the more conservative of us have always believed that the Radio public wants Television to be just about perfect before taking it on. Television has been in the laboratory for some time—the kinks

are being taken out of it. Around 20 stations are broadcasting television, several firms are manufacturing kits, and even Televisors, and it is practically a certainty that it will be introduced to the public on a commercial scale very shortly. Doubtless, 1930 will see marked development in that field.

Then, the sound engineering field will continue to make increased demands for men with a knowledge of Radio's basic principles. The country is going "talkie." Public address systems and sound projection apparatus will be installed in thousands of theatres, auditoriums, amusement centers and other places through the year. N. R. I. men should get their share of this work.

Here is another factor that will make 1930 a big year in Radio. The public has been pursuing a policy of watchful waiting—delaying their buying of Radio apparatus until they are satisfied that receivers have been standardized and that their new set will not become obsolete over the week-end. That stage has been reached in Radio today. Set design is fast becoming standardized. The new sets equipped with remote control and other features should appeal to the buyer. There are over 14,000,000 wired homes that today are without adequate socket power operated sets. Improved types of battery receivers are available for the unwired home. So it looks like a big year in sales, service, and repairs.

International broadcasting will be on a broader scale than ever this year. Arrangements have been made between the American chains and the broadcast companies in England, France, Germany and other continental countries for more frequent interchange of programs, and American audiences will very shortly have the privilege of listening often to the best productions rendered by European Symphony orchestras.

The use of Radio in Aviation will expand in 1930. Government plans call for an enlargement of the Radiobeacon system to make safe our trans-continental passenger and mail lines. Hundreds of point-to-point stations are being constructed to provide weather information and other data to planes in flight. Point-to-point land Radio communication will be advanced. So it's clear that this is going to be one of the biggest years yet for the man who knows Radio, and when next Christmas rolls around I'm sure that N. R. I. men will have reaped a full measure of Radio's prosperity.

J. E. SMITH.

## Synchronism — One of Television's Problems

By S. H. ANDERSON

Radio Engineer

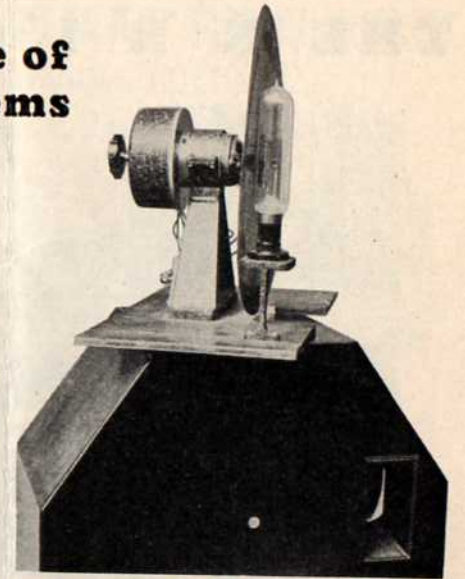
Clarostat Manufacturing Company



**T**HERE appears to be little difficulty in picking up television signals in almost any part of the country, because of the dozen or so television broadcasting stations. However, many experimenters complain about the difficulty of unscrambling the whirling dots so as to obtain satisfactory images. The trouble is, therefore, one of synchronization, or matching the speed of the receiving disk with that of the transmitting disk.

Certain television workers recommend synchronous motors. This practice is ideal in certain areas served by the same alternating current power system. The same alternating current supply insures absolute regulation of both transmitting and receiving disks operating on the common power supply. However, when the transmitter and receiver are located in different power supply areas, the synchronous motor is no longer such a happy solution. The use of a synchronous motor with friction drive, as recommended by Jenkins in particular, does not prove so effective in most cases, because of the slippage between driving and driven disk.

The leading television workers have found the variable resistance method of controlling speed the most satisfactory. Here the problem is to have a variable resistance that is stepless, so as to obtain precise speed adjustment, together with a steady resistance value at any setting. The problem of developing a suitable micrometric resistance has been far from simple, for most variable resistors are not intended for handling the considerable current called for in a motor control application. Nevertheless, by certain detail changes in our power clarostat, we have succeeded in evolving a device that provides the necessary stepless resistance range, together with a current handling capacity of 80 watts, or more than ample to control the usual motor of  $\frac{1}{8}$ th horsepower or less.



The first picture of the Baird televisor which is in use in the British Isles. Steady, sure progress is being made in Television and it will pay every wide-awake Radio man to keep his eyes on that field. Nothing can stop it—television is right ahead of us.—J. E. S.

With the power clarostat, it is relatively simple to bring the scanning disk into step. By studying the pattern of whirling dots, and regulating the speed up and down, one soon becomes aware of whether the speed is too fast or too slow. The shifting of the pattern to one side or to the other indicates the speed of the receiving disk with relation to the transmitting disk. The speed is gradually adjusted until the dot patterns become solid masses and these masses evolve into animated subjects. The speed is readily held by means of the accelerating button which simply short circuits the power clarostat.

The handiest form is the speed control clarostat, mounted in a metal case complete with accelerating button. However, where the disk is mounted in a wooden cabinet, the power clarostat can be suitably mounted with just the knob and the accelerating button exposed.

Aside from the problem of synchronization, there is nothing very complicated about television reception, particularly the simple radio movies of black-and-white silhouettes broadcast by C. Francis Jenkins from W3XK in Washington, D. C. Television signals, when handled on short waves, can be received at distances of several hundred miles with any short-wave set and suitable amplifier. While the pictures themselves are of little intrinsic interest, the novelty of receiving pictures through space makes such experimental work quite thrilling.

# THE N R I CELEBRATES



In the little room shown in upper left-hand corner the first N.R.I. class met back in 1914. Below is shown a section of the Student Service Department of the Institute today. In other parts of our two-story home are housed the Graduate, Employment, Stenographic, Publicity and other departments. The helpful service that my staff renders, enables N.R.I. men to go farther in Radio and is also responsible for the growth of the N.R.I.—J. E. S.

**FIFTEEN** years ago the National Radio Institute was founded. Mr. Smith and Mr. Haas equipped a little 10x12 room with a code machine and started out with a class of four students. That was six years before the first broadcast station was built. Radio sets, as we know them today, were unheard of. Indeed, there was little to encourage the founders. Even their friends laughed and said that wireless was just a fad that would soon be forgotten.

But Mr. Smith and Mr. Haas foresaw a huge industry in the making that would offer unbounded opportunities to trained men—yes, they envisioned a world in which Radio would play a dominating part. Their prophecy has come true.

And, along with Radio's giant strides the N. R. I., pioneer Radio home study Institute, has grown. The success of the thousands of ambitious men it has trained and is today training has made possible the growth and widespread fame of the Institute.

The Institute today occupies its own beautiful building on 16th Street, Washington's finest. It's Instruction, Service and Administrative staffs occupy the 12,000 feet of floor space. A trained staff of 125 assist President Smith, Vice-President Haas and Chief Instructor Dowie in giving every possible service and assistance to N. R. I. men the world over.

Never before has the Institute been so ably equipped to train men for the Radio field. Never before have Radio opportunities been so abundant. President Smith sums it up in these words: "Little did I realize when I faced the first class of four students that I would have the opportunity of fitting many thousands into profitable Radio work, and on this 15th Anniversary of the founding of the Institute I want to pledge anew my faith in the future of Radio and of the man who faces it with firm, technical training."

# FIFTEENTH ANNIVERSARY

## Leaders In Radio Congratulate NRI And Point To Big Future Of Trained Man



shoulders can be

On the occasion of the Fifteenth Anniversary of the founding of the National Radio Institute, I should like to extend my heartiest congratulations.

No man familiar with the amazing and steady growth of the Radio industry throughout recent years can doubt for a moment that the successful solution of the many engineering and servicing problems attendant upon this rapid growth has been tremendously facilitated by the work of your Institution in providing for manufacturers a source of trained young men, upon whose shoulders many responsibilities have been placed.

McMURDO SILVER,  
SILVER MARSHALL, INC.

Only one home out of four is now equipped with a Radio. Three-fourths of the sets now in use are obsolete, so it would seem that the surface has barely been scratched and the future of the Radio business is bright for years to come. There is a growing demand for trained Radio men in this great industry.

POWEL CROSLY, JR.,  
PRESIDENT,  
CROSLY RADIO CORP.

We need man-power to continue operating on our present knowledge and we need man-power to learn more about this remarkable science of which we have merely scratched the surface. Radio's greatest need today from the technical side is capable, well-trained men.

WILLIAM S. PALEY, PRESIDENT,  
COLUMBIA BROADCASTING SYSTEM.



At no time during the past has the future looked so bright for the seeker of Radio knowledge as at present. In the past, Radio has come through vast revolutionary changes and the last fifteen years were really a period of preparation for the Radio industry. Right now is the time that every able-minded and able-bodied radio man begins to cash in on his Radio knowledge. In the Radio servicing field, in Radio Sound Engineering, in Television there is a tremendous opportunity—far greater than at any time during the past fifteen years. At this moment, there is a great scarcity in Radio service men and Radio sound engineers and with the coming of Radio equipped automobiles during the next few months this scarcity will become more acute.

HUGO GERNSBACH,  
EDITOR, RADIO-CRAFT.

Radio has broadened of late years, into a means of entertainment as well as of communication. Its methods are of increasing value in numerous fields. It offers a multitude of opportunities to men who are not afraid of hard work in pioneer directions. It is believed that the years will bring an ever increasing number of openings for men trained in the various subdivisions of Radio Engineering and its applications.



A. N. GOLDSMITH,  
VICE PRESIDENT,  
RADIO CORP. OF AMERICA.

The future of Radio with its wonderful opportunities of development into the unknown fields of public service depends upon the ability of men. Only trained men with vision can delve into the unknown with success. I believe that the Radio industry is the most interesting and most progressive of all. It is interesting because of its great public service and it is progressive because it is new and many of its most important problems remain unsolved.

M. H. AYLESWORTH, PRESIDENT,  
NATIONAL BROADCASTING CO.



Congratulations on completion of fifteen years of training men for Radio work. There is every reason to expect Radio to continue to extend its usefulness as it has in the past. Your contribution to this growth is an essential one, since modern civilization increasingly depends upon the man with specialized training.

J. H. DELLINGER, Director,  
RADIO LABORATORY,  
BUREAU OF STANDARDS.

Hearty congratulations to the Institute on the remarkable work being accomplished. I wish to compliment the graduates and students on their commendable efforts in seeking more knowledge in this highly technical field. Radio needs the American youth as inventor, technician and expert, and a technical education is vital.

PAUL A. GREEN, CHIEF ENGINEER,  
COLUMBIA BROADCASTING SYSTEM.

The Radio industry during 1930 must take television seriously. With the inauguration of television transmitting stations, operating on a regular schedule, there is certain to be widespread interest in television reception. Vast experimental possibilities are at hand. And so the industry must provide the necessary components at first, followed by kits and then practical televisions, finally leading to the refined televisor which will be incorporated in the same cabinet as the sound broadcast receiver. 1930 will be the first television year.

C. FRANCIS JENKINS,  
JENKINS TELEVISION CORP.



