

NATIONAL



RADIO NEWS



FROM N.R.I. TRAINING HEADQUARTERS

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DECEMBER, 1930



That Happiness and Prosperity

May Be Yours

This Christmas

and All Through the

New Year

Is the Wish of Everyone

at the

National Radio Institute

J. E. Smith, President





J. E. SMITH

The PRESIDENT'S PAGE

THE Times Square Television installation of the National Broadcasting Company has been completed. The Columbia Broadcasting System has requested authority from the Federal Radio Commission to erect one in connection with its New York studios.

For the present, neither chain will use Television for commercial purposes, but lots of experimenting will be done with these stations.

The interest of these two large broadcasting organizations in Television certainly speaks well for the ultimate future of this branch of the Radio industry.

GENERALLY improved business conditions are indicated by an increasing demand for radio advertising, according to William S. Paley, president of the Columbia Broadcasting System. In an interview Mr. Paley said:

"The business of broadcasting is in a healthy condition. New contracts have been signed by a number of leading manufacturers for advertising time on the nation-wide network of the Columbia System and we have had many renewals, indicating industry generally expects to return to normal. Today we are carrying a greater volume of business than ever before and inquiries indicate a steady future growth.

"We regard this as indicative that business has found Radio broadcasting a powerful aid even in times of depression and as evidence that the leading manufacturers have confidence in the buying power of the public to the extent that

they are spending millions of dollars to advertise their products by Radio.

"The Columbia Broadcasting System looks forward to the biggest year in its history."

"DURING the first four days of the world series baseball games I made \$61.20," writes a student in Pennsylvania. Another one says: "The Sharkey-Schmelling prize fight cleared me over \$100 fixing up sets so the owners wouldn't miss anything."

Big Events and Profits

The wise Radio man—whether he is operating a large store or doing Radio work in his spare time, will keep his eye on big events and profit by them.

Nearly everything of interest in the sporting world—football, baseball, races, prize fights, is broadcast. Big political speeches, election returns—all are of interest to the public, otherwise they wouldn't be put on the air.

Keep a calendar of these events. The newspapers will give you the dates well in advance and give you time enough to solicit old customers and new ones. Sell them on the idea of service for their sets so they'll be ready for the big events.

TWENTY-FOUR municipalities and two

States have been licensed by the Federal Radio Commission to operate police

Police Radio

Radio stations for the broadcasting of orders to squad cars and outlying stations. Twenty other cities have been issued Federal permits for the construction of such stations.

Chain Broadcasting Now Possible on One Wavelength

By MARTIN CODEL

(Special to National Radio News)

Chain broadcasting has reached the point where one wavelength is sufficient to carry a network program to the entire country.

The first definite statement that such synchronization has been achieved came from M. H. Aylesworth, president of the National Broadcasting Company, in a conference here with the Federal Radio Commission. Mr. Aylesworth made it clear, however, that various factors, technical, economic and political, enter into the proposition and no revolution will be wrought in broadcasting immediately or within the next few years.

"I am gratified to inform you," Mr. Aylesworth told the commission, "that synchronization in the field of Radio broadcasting is now out of the laboratory. Experiments and tests which we have been conducting have definitely demonstrated that, from a technical standpoint at least, it is now possible to operate two or more stations on the same radio frequency without distortion."

The tests consisted of linking high powered transmitters at Schenectady and Pittsburgh by telephone and control wires and operating them simultaneously with WEAJ, New York key of the N. B. C., on the wave length of WEAJ. All broadcast the same program originating at WEAJ. These tests, carried out under the guiding genius of C. W. Horn, general engineer of the N. B. C., have been entirely successful, Mr. Aylesworth reported.

Such synchronization has been the goal of Radio engineers almost since the beginning of congestion on broadcast wave lengths. At present the occupation of one channel by two or more stations almost inevitably means interference somewhere between them if they operate with

substantial powers or if they are geographically near one another.

With synchronization accomplished, the next logical step is the establishment of chains of stations, probably owned and operated by the chain organizations themselves, to carry the same program on the same wavelength. These stations may be a few high powered ones strategically placed throughout the country, or they may be a multitude of booster stations so placed that their "signals" will cover the country. Most likely they will be owned by the chain organizations themselves, giving the latter complete 24-hour outlets for their national programs.

Far from spelling the end of chain programs from the independently owned stations which now dominate the spectrum, the scheme will probably mean the establishment of additional chain services to the independently owned stations. They would have all the time they wanted for their programs of local origin and according to Mr. Aylesworth, they could then supplement their local offerings with

such chain programs as they choose. Particularly would all national news event broadcasts be made available to them, for the chain has no intention of dropping its affiliations with independent stations, he declared.

There are distinct limitations upon the immediate possibilities of synchronized network broadcasting. First, the cost of erecting the booster stations and linking them by telephone wires to keep them in phase and to carry the programs would amount, it is conservatively estimated, to well over \$35,000,000. Secondly, a sweeping reorganization of broadcasting, involving a considerable realloca-

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By special arrangement National Radio News will from time to time publish articles by Mr. Martin Codel, famous for his Radio writings in leading newspapers.

We know you'll like Mr. Codel's articles. They are of interest to all Radio-Tricians because they discuss matters of great importance to the Radio Industry. You'll hear more from Martin Codel later.

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The Story of a Sale

E. R. HAAS
Vice President and
Director

A Radio-Trician drove his car up to a gasoline filling station. The Radio he had just installed in it was giving the world series baseball game—play by play.

"What's the score?" asked a salesman who had also pulled up for gas.

"Two to one; Philadelphia leading," was the reply.

"I haven't heard a complete game during the series," continued the salesman. "Guess I'll take tomorrow afternoon off and tune in."

"Why do that?" questioned the Radio-Trician—"Why lose a half day from work—miss seeing your customers on time—lose business and break up your schedule? Why not put a Radio in your own car, then you can have programs wherever you go?"

The salesman thought this was a good idea. He made long, lonesome trips. His customers had Radios. When he arrived they talked about the happenings of the day. He had to get his information second hand.

The result of sixteen minutes conversation was a sale and installation of an automobile Radio by the Radio-Trician. He writes, "Mr. Smith, tell the boys that salesmen are good prospects for Auto Radios. Since that day in October—I've sold nine sets to travelling men and there sure is a nice profit in those Auto Radios."

A Success Plan

The program of a successful man contains four important factors: Ambition—a Goal—Preparation—Optimism.

Jim Blank says: "I wish I had a good job like Joe Brown,"—then spends his evenings playing pool. That's not ambition—even though he thinks it is.

Brown didn't get that good job by "wishing." His was a very different procedure.

Brown wanted a good job. He planned for it and worked out his ideas. First he decided definitely what he wanted to do—established a goal for himself. He knew he would have to work for what he got, but his Ambition carried him through. Brown didn't "trust to luck." He didn't just "wish" for things to happen.

Then he considered what he must know to attain his goal. He prepared himself—studied—realized that work and study would be big factors in his success.

Last of all he was optimistic. He thought success—talked success. Did he let the failure of others discourage him? No—! Why should he? Those failures merely lacked ambition—had no aim in life—didn't prepare properly—didn't believe in themselves.

Did the successes of others make him envious? Absolutely not—! They just acted as an incentive to spur him on to his own success.

Brown's good job isn't the top of the ladder for him. He didn't quit preparing when he got that job. He's working for the job above now. There are always success ladders for men of Brown's type and Brown will keep on climbing.

Jim Blank will continue to play pool and "WISH" he had a good job. Well, maybe his relatives will take care of him when he is too old to do odd jobs for a living.

Radio on Up-Grade

Statistics from the United States Government are very optimistic for Radio. The United States Department of Labor reports that forty-four Radio manufacturers employed 32,103 workers in August, which is an increase of 25% over the employment by these companies during July. Their pay rolls increased over an equal period 31.2%. The pay roll percentage increase as compared to the increase in the number of men employed, would also indicate that salaries are advancing.

RADIO-TRICIAN SERVICE SHEET

REG. U. S. PAT. OFF.

COMPILED SOLELY FOR STUDENTS & GRADUATES

CLARION RECEIVERS, MODELS NOS. AC-51, AC-52 AND AC-55

These receivers use the same chassis, the only difference being in the cabinet design.

With reference to the diagram you will find that the circuit employs 3 screen grid 224 tubes, a 227 power detector and a 227 first audio resistance coupled, as well as two 245's in the push-pull amplifier. The conventional 280 tube is used as a rectifier.

When the receiver is first turned on the voltage regulator should be watched. If it becomes red hot a short circuited rectifier tube or a defect in the power pack causes it. The switch should be turned off and the short circuit or abnormal condition overcome. The speaker plug should be in place while the receiver is on. If the speaker plug is out of place, and the switch turned on the filter condensers will be overloaded. Three chokes are used in the filter circuit of the power pack including the field coil of the dynamic speaker. Ordinarily only two chokes are employed in A.C. receivers.

If oscillations occur look for an open screen grid by-pass condenser, an open plate by-pass condenser, an open grid bias resistor, poor contact between the variable condenser canopy and chassis, poor contact between Radio frequency unit chassis and the main chassis, open circuit of grounding strap between Radio frequency choke and main choke, poor contact between variable condenser frame and rotors through the tension spring clips or by open circuit of the ground strap between condenser frame and chassis. Chassis base plate loosely attached to chassis; poor ground connec-

tion, a high resistance connection in series with a by-pass condenser, tube shields not secure and high line voltage.

New receivers have the trimmer condensers on stages 1, 2 and 4 almost all the way in, that is, having almost maximum capacity. Trimmer condenser on stage No. 3 will be found adjusted about half way out. It is suggested that you leave the trimmers as found unless it is definitely ascertained that they are out of adjustment.

If it is found that the trimmer condensers must be reset, tune in a broadcast signal of about 1400 K.C. or use a modulated oscillator for a signal.

Starting with the detector stage (toward rear of chassis) turn the trimmer condenser in and out with an insulated wrench until maximum signal is heard. Be sure to have the tube shields and grid caps in place. Next adjust the trimmer condenser of the 3rd Radio frequency stage, repeating this operation through the 2nd and 1st Radio frequency stages successively. From here on do not touch the trimmers. Re-tune the receiver to 1000 kilocycles. Starting with the detector stage, bend the split rotor plate of the condenser in or out for maximum signal. Repeat this operation on the 3rd, 2nd and 1st Radio frequency stages in turn. Tune to 550 kilocycles, and reset the split rotor plate if necessary.

A table accompanies this article, giving the voltages which should be measured at the tube socket terminals with a line voltage of 105 and 60 cycle current.

With this information as a guide and following standard practices on such receivers you will be able to correct any trouble that may develop in the Clarion receivers.

VOLTAGE TABLE

Tube Order	Tube Type	A Volts	B Volts	Cont. Grid Volts	Cathode Volts	Plate M.A.	Screen Volts
1	224	2.09	146	2.43	2.43	2.72	87.5
2	224	2.09	151	2.43	2.43	2.55	85.5
3	224	2.09	151	2.43	2.43	2.72	87.5
4	227	2.09	134	12.2	13.15	.58	—
5	227	2.14	170	1.22	13.6	3.31	—
6	245	2.14	195	37.5	—	20.4	—
7	245	2.14	195	37.5	—	23.4	—
8	280	4.51	—	—	—	35.	—

Line Voltage 105 60 cycle.

Volume Control Position Full

