

RADIO LORE FOR NOVICE AND EXPERIENCED FAN

RADIO PROGRAMS

WEAN starts broadcasting at 2 p. m. with the Summer Radio Church, sponsored by the Federal Council of Churches, presenting Rhoda Arnold, soprano; Hazel Tuftill, contralto; Grant Kimball, tenor; and Ernest Nitzberger, baritone. Sixty Minute Minutes will be sponsored by the Federal Council of Churches at 3 p. m. The baccalaureate exercises of Brown University, direct from the First Baptist Meeting House, Providence, will be heard at 4:30 p. m. W. H. P. Faunce, president of Brown University, will give the address. The Weymouth No. 79 American Legion Band will be heard at 5:30 p. m. and the Capitol Theatre program at 7:30 p. m. Tomorrow at 10 p. m. will be broadcast the Pinafore chorus under the direction of Prof. John Mullen. The Columbia Phonograph hour will feature P. Whitehead and his band at 10 p. m. on Tuesday, Wednesday at 8:10 p. m., William Martens, baritone, and Leonard Langlois, violinist, will be on the air. Thursday at 9:55 p. m., Col. F. H. Quinn, of the Democratic State central committee will talk on "Registration." The Rhode Islanders dance band will be on the air at 7:35 p. m. and 8:05 p. m. on Friday. The boys' and girls' H-4 program, sponsored by the United States Department of Agriculture, will be broadcast from the station Saturday at 9 p. m.

WEAN commences its week of programs at 11 a. m. with the service from the Mathewson Street Methodist Episcopal Church. The Columbia Chain program will be heard at 3:00, 4:00, 5:00, 9:45 and 10:15 p. m. At 6:30 p. m. will be broadcast an organ recital and at 7 p. m. the Asia Serranaders. Tomorrow at 8:15 p. m. will be broadcast the baseball game from Kinsley Park—Providence Grays vs. Springfield. At 6:15 p. m. on Tuesday the American Broadcasting period will present "America for Americans." Wednesday the usual program will be broadcast. Thursday at 8:01 p. m. the Two Hundred and Forty-third Coast Artillery Band will be on the air. Uncle Red will be broadcast under the auspices of the Providence Safety Council at 6:05 p. m. on Friday. Jimmy Walsh and his orchestra will be broadcast from the station at 11:05 p. m. on Saturday.

WLSI begins its broadcasting at 10:30 a. m. with the service from the First Church of Christ, Scientist. The International Bible Students' program will be heard at 5:30 p. m. At 8 p. m. will be heard the service from the Church of the Seventy Day Adventist. Tomorrow at 8 p. m. Harold Eddy and his orchestra will be broadcast. Charles Miller and his orchestra will be on the air at 7 p. m. on Tuesday. An organ recital will be broadcast from the station at 7:15 p. m. on Wednesday. A Movie Club with the Twilight Hawaiian quintet will be heard at 8:15 p. m. on Thursday. Friday the usual program will be observed.

WFOT starts broadcasting at 10:45 a. m. with the service from the Central Falls Congregational Church. Family hour will be broadcast tomorrow at 6 p. m. Tuesday the usual program will be heard. Harold Briggs and his orchestra will be heard at 8 p. m. on Wednesday. The Harmonic Twins at 7:05 p. m. on Wednesday. The Exide Battery boys will be on the air Thursday at 7:05 p. m. The usual program will be broadcast the remaining days of the week.

WFOT commences its week of programs at 1:30 p. m. with the Walliana Hawaiian ensemble. Jacob Conn will be on the air at 2 p. m. on current events. Tomorrow at 2:30 p. m. the studio program will be heard. At 7:30 p. m. on Tuesday, Anna Bart, soprano, and Felix Testa, pianist, will be broadcast. Wednesday at 7:30 p. m. the Aloha quintet will be on the air. Thursday and Friday the usual programs will be heard. Francis Connell, harmonica specialist, will give a program at 2:45 p. m. on Saturday.

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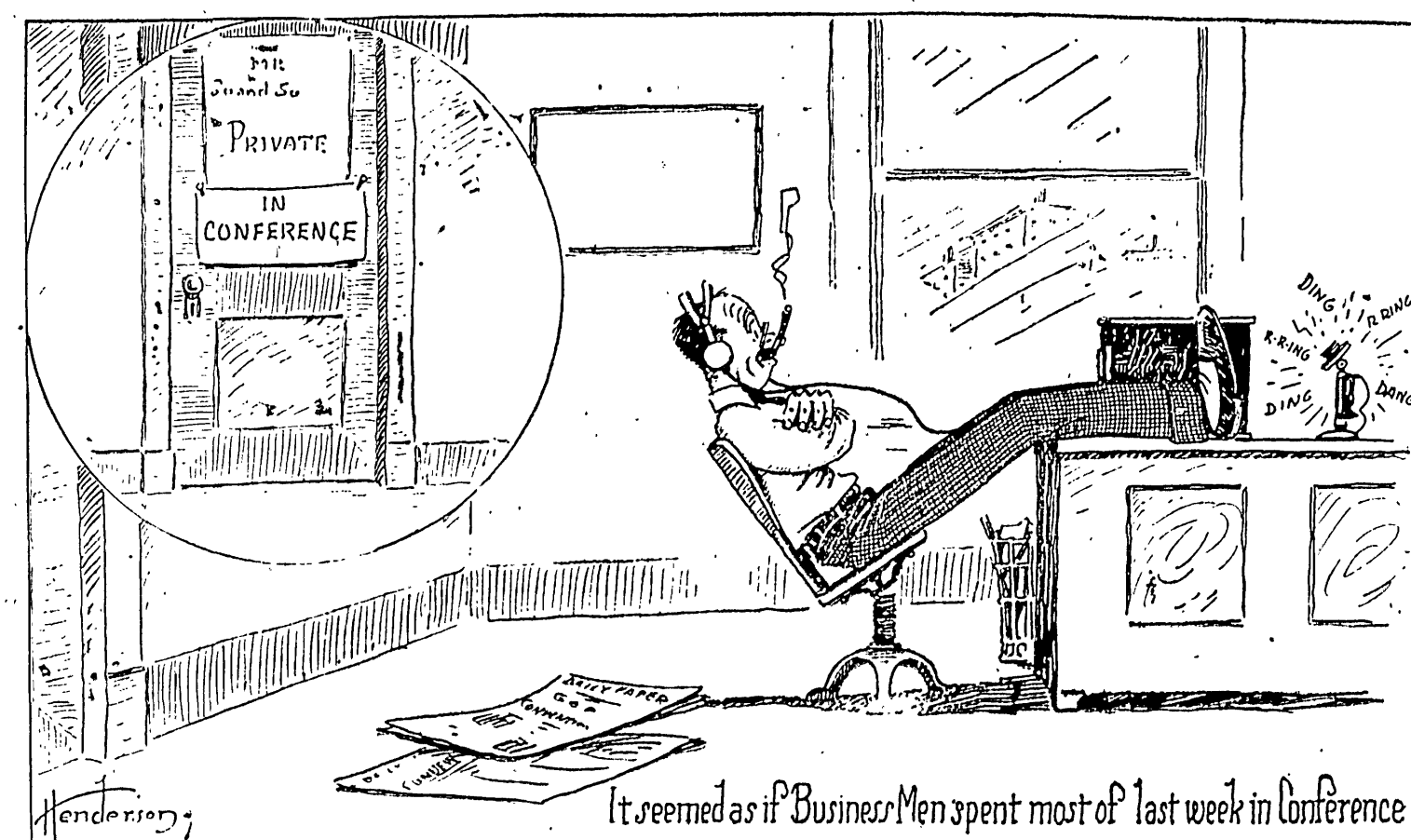
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SHORT CIRCUITS



It seemed as if Business Men spent most of last week in Conference

Uncle Sam Transacts Great Volume of Business by Radio

Army and Navy Network Numbers 87 Stations Which Link U. S. With Far-Flung Fighting Forces. Wireless Invaluable Aid to Coast Guard

BY ROBERT D. HEINLE
While the Federal Radio Commission goes about its task of straightening out the broadcasting tangle in both long and short waves, Uncle Sam is constantly increasing the use of this method of communication in practically all his departments. The Army and Navy Departments, because of their nature, probably find the greatest use for the science.

To meet the growing demand of the different internal divisions, such as the communications department of the navy and the Signal Corps of the army, as well as to build up a chain of stations for the purpose of national defense, the army and navy radio net was organized. There are now 87 stations in this hook-up.

The network transmits orders and messages between the different army and marine posts, the naval bases, the fleet and headquarters. Station NAA at Arlington is the key station and probably transmits the largest volume of traffic. In addition, messages are accepted at the lowest possible rate for the regular business of the other Government departments and the entire system is maintained at a great saving to the Government.

The Navy Department has done commendable work with short waves, having been in daylight communication with the Pacific fleet at distances up to between 3000 and 4000 miles.

A service to army and navy and marine corps is also being improved. A feature, flying conditions being radiated from the local stations on hourly schedules in many parts of the country.

The Department of Agriculture through its radio division is doing an invaluable service for the farmers of the country. Through commercial radio stations nearly all of the important news items are placed directly in the hands of the farmer. About 100 stations in the United States disseminate this information gratis, the talks and lectures being prepared by a staff of experts in the department.

Housewives in the city as well as in the country also profit by this service—recipes, dressmaking, home making suggestions—an almost complete course in domestic economics being broadcast daily.

Crop and market reports are read over the air daily in many sections of the United States, many times at a great saving to the farmer. The value of this service and listen in regularly. Forest fire warnings are also given during the dry summer season.

The Department of Commerce the administrative end of radio fell originally through the Bureau of Navigation having control of wireless on ships, and it will revert to the Secretary of Commerce through the Bureau of the present commission. The Radio Division, however, still has a finger in the pie with the commission on hand, having control of the inspection of radio apparatus in commercial stations, examining the records of all ships leaving our ports, the examination of radio operators applying for commercial licenses, etc.

Among the main duties of the Inspection of radio apparatus in commercial stations, examining the records of all ships leaving our ports, the examination of radio operators applying for commercial licenses, etc.

The Aeronautics Branch has ambitious plans for the use of radio in the development of commercial airways. The Bureau of Standards, under the Department of Commerce, maintains elaborate radio research laboratories and its work is intended to make the use of radio apparatus in commercial stations, examining the records of all ships leaving our ports, the examination of radio operators applying for commercial licenses, etc.

The Department of Justice has utilized radio in the trial of the Bremer kidnapping case. The use of radio in the trial of the Bremer kidnapping case. The use of radio in the trial of the Bremer kidnapping case.

The Geological Survey has also used this means of keeping in touch with its field parties. The use of radio in the trial of the Bremer kidnapping case. The use of radio in the trial of the Bremer kidnapping case.

The Public Health Service frequently broadcasts short lectures designed to spread the knowledge necessary to combat ill health in the country. The use of radio in the trial of the Bremer kidnapping case. The use of radio in the trial of the Bremer kidnapping case.

Other Government departments and bureaus use the commercial stations for the dissemination of their various problems and solutions. President Coolidge is a frequent speaker, having an eager audience for each broadcast. While every secretary in the Cabinet has appeared before the microphone, not one time or another, Secretary of Labor Davis has been one of the most often heard. And so, the radio is the all-important medium in solving Uncle Sam's communication problem.

WEBC JOINS CHAIN
Station at Superior, Wis., Will Be "Presidential Special."

President Coolidge will be able to listen in on the national radio programs during his vacation at Brule Lake, Wis. The use of radio in the trial of the Bremer kidnapping case. The use of radio in the trial of the Bremer kidnapping case.

WEBC recently was granted an increase in power by the Federal Radio Commission because of the establishment of the summer White House at Brule Lake.

The proximity of the station to Brule Lake will assure the Chief Executive of clear reception of the national programs that are broadcast.

Each week this summer, the station will broadcast approximately 12 hours of "sustaining programs," as the type sponsored by the NBC and associated stations are called.

Weekly Radio Test

1. Why is it that two owners of the same make and model of set frequently find tuning to vary?
 2. Is it permissible to use a lightning arrester indoors?
 3. What year is regarded as the commencement of the "gold rush" period in radio?
 4. Why do changes in the reception of the same make and model of set frequently find tuning to vary?
 5. Does it make any difference which side of a lightning arrester is used for the aerial and lead-in?
- (Answers to these questions will be found elsewhere in the Radio Section.)

BITTER FIGHT SEEN

Many Stations Take Exception to Proposed Elimination.
While Judge Robinson and Mr. Caldwell, members of the Federal Radio Commission, were in New York investigating the situation in the area said to stand most in need of a general clean-up, increasing evidence indicated that broadcasters were prepared to make a bitter fight against license revocation, according to the Washington Post.

One station after another has announced that it will be represented in Washington when hearings on revocation are inaugurated, prepared to defend its position. It serves the public interest, convenience and necessity. Not only individually is the right of station to be heard, but the right to be heard is a right of the public. For example, stations are combining forces so that the representative committees may be dispatched to Washington in July to show cause why license should be annulled.

It will be a bitter fight, the Washington Post says, ending finally in the courts. If the commission's opinion that it has the right to clean up radio is sustained, the problem of revoking bad broadcasting can be solved with neatness and dispatch. If the courts rule otherwise, further attempts to clean up radio under the present law will be futile.

RADIO FOR THE DEAF

Headphones Can Be Used Along With Loud-Speakers.
There are a great many would-be radio fans in our American homes who are hampered by poor hearing and who cannot secure the enjoyment from the radio set that others take as a matter of course. Although the information has often been given, the question has been asked repeatedly, as listeners who give a thought to the old folks or those with poor hearing want to know how to provide them with loudspeakers, without making it necessary to shut off the loud-speaker at the same time.

All you need in addition to a pair of headphones is a 200,000-ohm variable resistor. This is inexpensive and so are the phono, connect one terminal of the headphones to one terminal of the resistor. Next, without disconnecting the regular connections of the loud speaker, attach the remaining head-phones cord to one terminal of the resistor. Attach the remaining terminal of the speaker to the other post on the resistor.

With this simple equipment, the listener who requires phones can regulate the volume to a level, to suit himself or herself, and the effect on the output from the loud speaker will be practically "nil" as far as anyone can notice.

OUT OF TOWN STATIONS

To-Day

EASTERN STATIONS

KDKA—PITTSBURGH—314.
11:00 a. m.—Church service.
1:00 p. m.—Radio household institute.
2:00 p. m.—Organ recital.
3:00 p. m.—Shadeyale Presbyterian Church.
4:00 p. m.—Organ recital.
5:00 p. m.—Same as WJZ.
6:00 p. m.—Baseball scores.
7:00 p. m.—Baseball scores.
8:00 p. m.—Baseball scores.
9:00 p. m.—Baseball scores.
10:00 p. m.—Baseball scores.
11:00 p. m.—Baseball scores.

THE VALUE OF A FILTER

In order to check out the interference coming in over the antenna, a filter in the power leads to the set will often correct the trouble. The filter is constructed as follows: Make two wooden spools with a wire spool large enough to carry 30 turns of No. 30 double cotton-covered copper wire. Connect a spool in each one of the power leads from the light socket to the set. Then connect two 1 microfarad condensers together and place them across the terminals of the spools on the opposite side from the set. Ground the centre connection between the condensers.

Piano Aids Speaker

By placing the loud speaker near or on top of a piano better results are sometimes obtained. The instrument acts as a giant sounding board, and the various strings of the piano vibrate with their respective frequencies.

HOW TO DIMINISH SUMMER STATIC

Special Aerials Best Weapons in Warm Weather Skirmish

Wire Strung Up Indoors One Way of Combating Noisy Atmosphere. "Capacity" Antennas Worth Trying, If Possible

During the warmer months of the year, our radio reception is disturbed somewhat by interference caused by electricity. Inasmuch as many of the stations which are in the "DX" line are upon the best entertainment, are now using much greater power than in the past, the static—which hasn't had any such increase in strength—is more in the background than ever.

So much so that it is practically when we attempt to listen to the weaker local stations or tune in on "DX" that we are bothered by this bugaboo. Of course, when there is a thunderstorm going on, our aerials are very likely to be unable to receive very much.

A small-sized aerial is best for summer use when it comes to entertainment from the local stations. With the power shaded by the trees, the condenser stations and with the sensitive receiving sets now in vogue, everywhere it is commonly true that the aerial is much larger than necessary to receive our local stations enjoyably.

When the being the case, we are accustomed at times to "tune off" the exact points for the station so that the volume is not too strong or to change the setting of the volume dial. With a little smaller aerial in use, the same results can be secured by tuning a little more accurately. The signals from our broadcasters are just as strong, but Mr. Static is a lot fainter because of the smaller antenna.

It is not very convenient for most of us to have a small aerial outside just for summer work. Accordingly, we find that the indoor type of aerial serves the purpose. This can be a length of 25 to 50 feet of bell wire strung neatly out of sight along the picture molding, but there are innumerable other forms of indoor aerials worth using or trying.

An aerial of the "capacity" type is a device and looks somewhat like a window shade. It is made of a number of sheets of paper between which are numbers of fine wires connected together. This can be hung up or laid on the floor under the carpet.

Using the electric light or telephone circuits through devices and for the purpose is likely to result in a fairly good proportion of static, so that these methods are not highly recommended for special use in avoiding static.

In some locations it is found that a loop of wire two separate ground connections and no aerial at all. The regular ground connection is left "as is," while the antenna post is connected through a 1000 fixed condenser to the ground at another point, say a radiator or water pipe. Sometimes good results can be secured by disconnecting the ground wire and connecting it to the aerial post, leaving the regular ground binding post unused.

The underground aerial is advocated here and there, and is sometimes quite helpful in reducing static and electrical interference. This is simply a length of 50 to 100 feet of well-insulated wire, with the farther end well taped, laid in a furrow or trench a foot deep or so and covered over. This is particularly good on a hillside.

A loop aerial is especially serviceable in the reduction of static. The loop aerial receives especially well from points in the plane of the loop, or from points toward which the loop is pointed. A loop placed north and south will not receive stations to east and west successfully. Accordingly, the loop will not receive static from all directions. Hence, the broadcast station is in a definite direction, the loop is able to provide a larger portion of signal volume as compared to static. Of course, the loop is less sensitive to static than a horizontal aerial, so for equal sensitivity it needs a set with a good deal of radio frequency amplification—either a four-stage R. F. circuit or a super-heterodyne.

However, we do not need maximum sensitivity for summertime entertainment from near-by stations, so that a loop aerial may be useful with the ordinary set, having only two stages of radio frequency, like the neutrodyne.

A larger size loop than commonly used is suggested for this purpose, and

Radio Questions and Answers

Radio Editor, Sunday Journal:

I built a set which works fine outside the house. But when I put it in the box and connect it up, it operates poorly. On removing it, the set comes to full life again. What do you imagine can be the matter?

PROVIDENCE.
It is possible the cabinet is damp and that the contained moisture and the contained dust, etc., act as partial conductors of electricity. Try drying the cabinet slowly in a warm place and wiping it very clean and dry. It is also possible that some unusual strain is placed on the set when it is installed in the cabinet and that this moves some of the coils slightly out of place or opens up some of the connections.—Ed.

Radio Editor, Sunday Journal:

How long should B batteries last? Edgewood.
The long B batteries usually provided depends upon many factors. Hours of use, number of tubes, size of power tube, amount of C bias, whether batteries are kept cool and dry are some of the factors upon which the life of B batteries depends. However, properly employed, the large, heavy-duty batteries should last from six to nine months of typical radio use.—Ed.

Radio Editor, Sunday Journal:

Is length or height most important in an antenna? Bristol.
The answer to your question is that height is rather more important than length. The best choice, although both factors are desirable. In speaking of height, it is well to note that we mean the effective height above the "ground" level. In fact, plain ground, or even a roof, might have an antenna top a 50-story building and figure that was pretty good height. Yet, if the roof of that building happened to be a metal one, the antenna would be grounded, and would be 50 stories high, and the antenna would be just the height above the ground. It is also desirable, although there is nothing drastic about going beyond 100 feet in broadcast reception.—Ed.

NEW RADIO TERMS

"Optimum Efficiency" Just One for Fans to Digest.
Here are a few new terms for radio enthusiasts to master. They come at a time when it has seemed as though most of the perplexing features of radio technology had been digested and made plain.

What, for instance, is an inductively tuned antenna circuit? Among other things, what is a minimum adjusting condenser, and why is it used at the low wave length end of the scale? Builders of some of the latest sets are speaking of "optimum efficiency." What is this and what does it do? Another one of the new sticklers is the term, "reflected loading effect."

Incidentally, the terms mentioned in the paragraph above are simply some of the new features incorporated in one—just one—of the new electric sets.

Know Your Radio

It is necessary first to learn the various details to be successful in repairing receiving sets. There are upwards of 1000 possible errors an amateur can make when locating trouble. Learn the details of the set, the type of tubes, the type of batteries and the type of C voltages for the various tubes and sets.

A good one can be made by winding

about 100 feet of insulated wire on a form about four feet square. The turns of wire should be about half-inch apart. The side of a door capable of swinging through 180 degrees makes a good place to fasten the loop.

Such a loop is connected in circuit with the antenna coil of the set. A larger size loop than commonly used is suggested for this purpose, and

There is no hard and fast rule for

reducing static interference by increasing the power used by broadcasting stations near by makes it possible for listeners in most locations to have one or two stations at least that will provide entertainment all summer practically untroubled by the atmospheric disturbances.

