RADIO LORE FOR NOVICE AND EXPERIENCED FAN

Broadcasting Entering Era of Usefulness, Leader Says

Improvement of Radio Systems During Last Year Unparalleled.—Question of Synchronized Transmissions Now Commands Attention

BY AUSTIN C. LESCARBOURA.

An era of usefulness, rather than of mere entertainment, is ahead for radio broadcasting in 1928, according to a man prominent in the broadcast field.

Improvement and expansion of physical equipment and reception within the past year, he declares, has been unparalleled But of even greater importance to the future is the final acceptance of radio by the leading artists, the great scholars and educators and the most gifted entertainers as the medium through which they can reach the greatest national audience.

This, added to a new realization on the part of the radio broadcasters that the most effective as well as the most popular programs are those with a distinct educational, cultural and entertainment value, has won for radio prestige and support not even dreamed of a year or two ago.

"Our first year of operation," continues this broadcast leader, "has been a year of preparation and of self-education. It has been a year of learning and building. Through the company's networks, covering practically the entire United States, approximately $6,000,000 was spent in 1927 in presenting radio programs. In addition to this amount, over $2,000,000 was spent for talent alone on sponsored programs presented by some 50 American industries who are clients of the company. The company itself spent over $500,000 for talent utilized in sustaining programs presented by itself.

"Wire service tolls alone, for special circuits to hook up the stations associated with our networks, were in excess of $1,350,000. We were the largest user of the American Telephone and Telegraph Company's telephone wire service. Our permanent specially constructed wire line facilities utilize 10,270 miles of wire and on numerous occasions during the past year, when broadcasting over a nation-wide hookup, we have used more than 20,000 miles of wire.

"Great strides have also been made by our engineers, thus allowing what heretofore seemed impossible. Improvement in the quality of transmission and the commendable achievements of the Federal Radio Commission, together with the installation of permanent and improved wire line facilities furnished us by the telephone company, have all been a remarkable aid to this era of expansion."

One thing becomes more and still more certain in the broadcasting situation, and that is that there are not enough wave lengths to go round. While the higher wave lengths are fairly clear from interference, the middle and lower ones are nothing more than a modern Tower of Babel. Nevertheless, the Federal Radio Commission has done an excellent piece of work in its allotment of broadcast wave lengths. It is simply physically impossible to accommodate all the broadcasters on the few wave lengths available in the present broadcast wave length band.

What promises to help the situation materially is the use of the same wave length by several stations, with precise frequency control by means of a quartz crystal oscillator or other master oscillator. Let it be noted that two transmitters, operating on virtually the same wave length, will set up a serious whistle or heterodyne note, yet if those two transmitters are adjusted on the exact same wave length and to the same frequency, there will be no heterodyne and no interference when handling the same program Of course the scheme is feasible only when two stations are broadcasting the same program.

Synchronized broadcasting is not exactly new. Station WBZ at Springfield, Mass., and its companion station, WBZA at Boston, some 120 miles apart have been utilizing the same wave length and have been keeping in absolute step by means of quartz crystal oscillators, while broadcasting the same program. Very recently, two stations of the Columbia Network, WIAU at Columbus and WGHP at Detroit, have experimented with synchronized frequencies, while broadcasting the same programs of the network. At first some difficulty has been encountered in securing perfect wave length synchronism, due to the precise temperature required for the crystal oscillators, but later in the experiments perfect step has been obtained, with the disappearance of the heterodyning

There has been some mention of using the synchronized frequency idea for all the stations of the Columbia Network, in order to reduce interference to a minimum. Surely the Federal Radio Commission would welcome such an innovation and would assign an exclusive wave length for a given synchronized network. Inasmuch as the trend is decidedly toward network operation it would seem that a common wave length or frequency should be utilized for network broadcasting. We have often been peeved at our picking up the precise same program over and over again, tuning up and down the wave length scale, as the various stations of a network were being tuned in.

Just how the technique is to be worked out, is another matter. That synchronized frequency is one way out of the serious heterodyning now taking place, is apparent. That network broadcasting could very well be handled on the precise same frequency, actually providing better signal strength because of the combined influence of several transmitters at various distances from a given receiver, is admitted However, individual wave lengths still would have to be retained for individual broadcasting, as at present. That could also be arranged.

MULTI-TUBE SETS

These Bringing Real Appreciation of Radio Programs.

Quantity production on low-priced receivers of modern design and acceptable workmanship looms as one of the greatest aids to radio progress, in the opinion of experienced observers While there has been a degree of quantity production in the past, it is pointed out that this has been confined to types of receivers not classed with the better sort in type and performance, thus playing no significant role in bringing large groups of the public to an appreciation of what good radio really has to offer.

The automobile industry has advanced at an unprecedented rate since low-priced powerful and completely equipped cars have come into popularity. This has enabled many millions of people to sense the pleasures and the comforts which previously were known only to those who could afford more costly things. The person who cares to pay for a better car enjoys more luxury, more comfort, greater speed and increased performance, but the basis of his pleasure is a fine power plant, which is becoming increasingly well known to a majority of those who spin over the highways.

In a similar way, the low-priced multi-tube set is bringing large groups to an appreciation of what real radio has to offer. This is the first time the public in general has been able to sense superlative performance at quantity production prices.

The marketing of such sets in no wise should spoil the market for better and more expensive receivers. The only way to do that is to offer at quantity production prices sets that are completely inefficient, for that gives the public no hint as to what radio really offers.

Merchandising experts recognize that it is far easier to sell a satisfied customer a second and better article than to do so to a dissatisfied one. Radio's industry will march on to greater success when more people have sensed the enjoyment of the multi-tube set.

BETTER FOR LOCALS

Reduce Aerial Efficiency if Multi-Tube Set Is Used.

Where a multi-tube set has no provision for reducing the number of stages of amplification that can be used, it sometimes is found that reception is poor on local stations. This is due to the fact that there is too much signal strength resulting in distortion which, in many cases, actually weakens reception The trouble is likely to develop where superheterodyne circuits are used too close to broadcasting stations, because supers have two detectors and the signal strength impressed upon the grid of the second detector is too great.

One radio owner solved this problem with a super by combining the audio amplifier with a special tube detector and tuner, using this outfit for the locals. The arrangement has certain advantages over cutting off stages of audio as is the case in many sets since it is in the audio stages that tone is reproduced.

In most instances, the simplest way to improve reception on the too powerful locals is to reduce the aerial efficiency, perhaps to the point of relying upon the binding posts to pick up the signals.

MILK TAKES PLACE OF INK

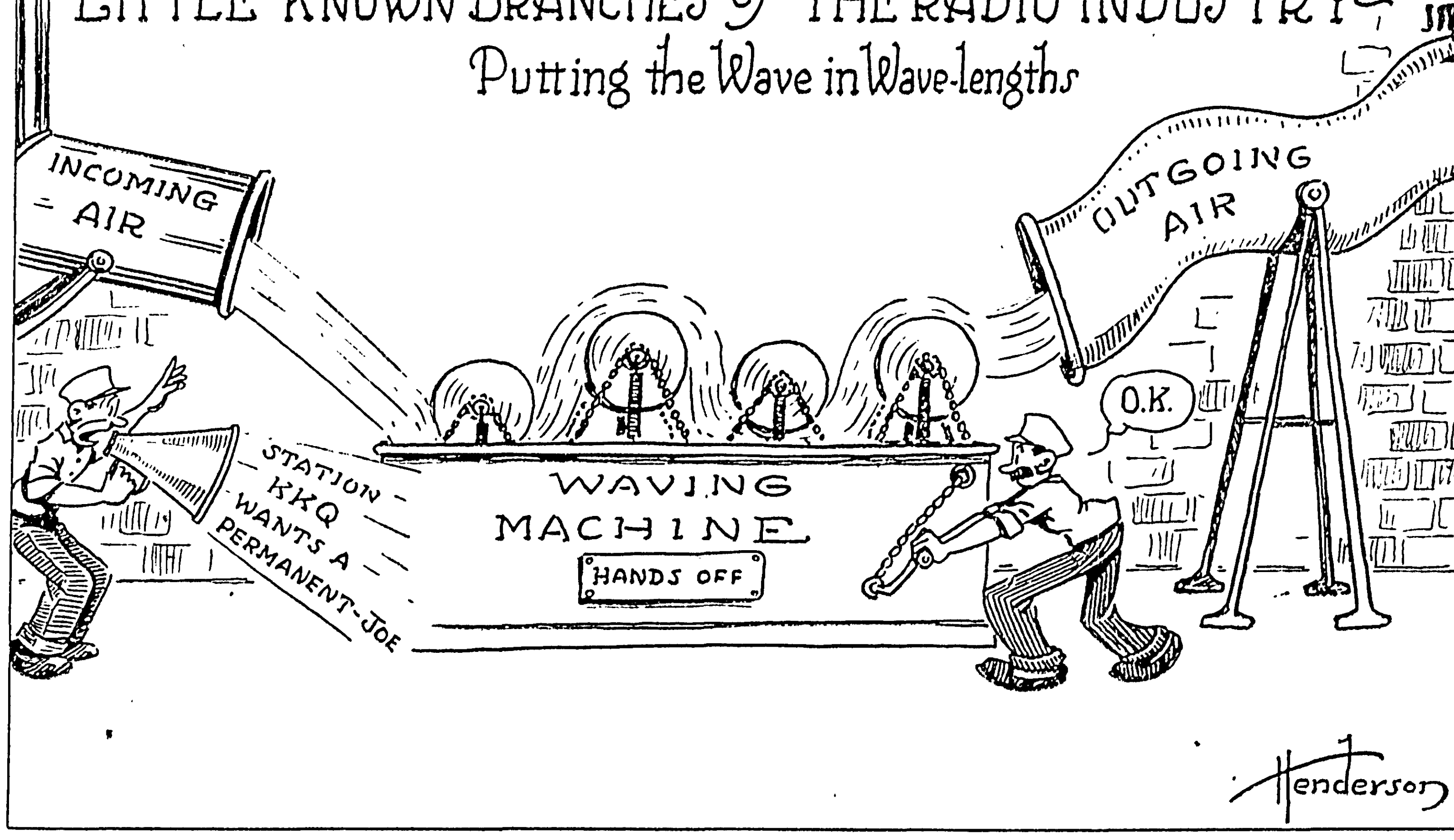
It is stated that Ovid, the ancient philosopher, taught his pupils to write by using milk on brown paper.

Marshall & Co.
Authorized Radiola Service
Where They KNOW The Neutrodyne
R-A-D-I-O Exclusively
94 DORRANCE STREET
Opp. Narragansett Hotel

TONIGHT 7:30
WEEI..
La Touraine Coffee Concert Orchestra
Courtesy of W. S. Quinby Company, whose slogan is
"You might as well have the best"
La Touraine Coffee

"OLD FOGEY"
Will be on the air over WLSI Wednesday Evening at 8 o'clock.
"Yield Not to Temptation"
THIS WILL BE A SIZZLER!
Sponsored By
Rhode Island Welding Co.
25-31 BATH STREET
P. S. Will You be There?

SHORT CIRCUITS



Weekly Radio Test

1. What is a "sponsored" program?
2. What portions of broadcast programs are rated as being of the "sustained" variety?
3. What is a "special purpose" vacuum tube?
4. Is the "hissing" from a tube drowned out by the music from a station or does it actually disappear when the station's carrier wave is picked up?
5 Will a receiver with two stages of audio, but without a power tube, operate at all without a "C" battery?

(Answers to the Radio Test will be found elsewhere in the Radio Section)

(Copyright, 1928.)

FEBRUARY IN RADIO

Ship Established Distance Reception Record in 1902.

In February, 1902, the steamship Philadelphia of the American Line received messages a distance of 1551½ statute miles and received Morse signals up to a distance of 2099 statute miles from Poldhu Station, Cornwall, Eng This is one of the outstanding events of the history of radio, as recorded in February.

Other February developments follow:

Feb. 3, 1908—Transatlantic radio stations were opened to the general public for the transmission of passages between the United Kingdom and the principal cities of Canada

Feb 9, 1912—The Australian Commonwealth station was opened.

Feb. 20, 1915—The Pan-Pacific Exhibition at San Francisco was officially opened by President Wilson at Washington, through the medium of wireless telegraphy.

February, 1916—During the course of a severe blizzard in the United States, wireless telegraphy was extensively used for train dispatching, as the telegraph wires were down

Feb 27, 1922—The first annual Radio Conference was held in Washington.

Feb. 5, 1924—A radio program, broadcast from the East Pittsburgh station, KDKA, was received and rebroadcast in England for the benefit of English listeners.

Feb 23, 1927—Radio Act of 1927 was passed.

Monday Best Radio Night?

Based on the argument that Monday night is the poorest night in point of attendance for the theatre, and the assumption that if the people are not in theatres, movies or other places of amusement on that night, they must be home, the conclusion is reached that this night is the most logical, with the possible exception of Sunday night, for people to listen in on their radios

SCHOOL CONCERTS TO START FRIDAY

Programs Will Be Directed by Walter Damrosch

First Broadcast Planned to Appeal to Children of 6 to 14 Years. Second, Week Later, for High School Students.—Each Begins at 10 A. M.

Years behind other countries in this educational development, the United States, through experiments to be made by Walter Damrosch, the noted orchestra conductor, will for the first time endeavor to reach scholars in the public schools and students in high schools and colleges by radio, with the assistance of the New York Symphony Orchestra of 100 pieces

Mr Damrosch will give two concerts over a chain of stations, the first Friday, Feb 10, for school children, 6 to 14 years old, and the second Friday, Feb 17, for high school pupils, both at 10 o'clock in the morning, Eastern Standard Time.

"School broadcasting has grown so rapidly of late in Great Britain that its magnitude is hardly realized by the majority," say advices just at hand from London. "Some 5000 schools are known to have receiving sets and the actual number may be considerably greater Last term 80,000 school 'Aids to Study' pamphlets were applied for—a figure which gives some idea of the magnitude of the 'Wireless School.' In this way great numbers of children, often deep in the country and very much 'out of things,' are coming under the influence of great experts and teachers and the life of the schools is enriched and freshened."

Just now they are announcing their program of midwinter broadcasts to schools revealing a remarkably complete and varied course of instruction.

"Sir Wilford Davies has reached the fifth term in a two-year course on elementary music," we are told. "Miss Rhoda Power will follow up her lessons on 'Boys and Girls of the Middle Ages' by a similar series on 'Boys and Girls of Tudor and Stuart Times.' Each lesson will tell the story of a boy or girl in some walk of life. Quaint customs of the time are brought in and the lessons are intended to give the pupils a vivid background into which they can fit the facts that they learn in their ordinary school lessons.

"The nature study lessons, like the history lessons, are intended to supplement the ordinary school work Eric Parker will speak of the most interesting features of the week—hibernating animals, early flowers, catkins, nesting birds and so on round the calendar

"M. Stephan and Lloyd James will continue their lessons on French and on speech and language. Mr. James has proved strikingly successful in kindling the interest of school children in the mechanism of the voice and in the problems of good speech.

"Last term Canada and the Western Colonies were taken in the course on empire history and geography This term Africa, Australia and New Zealand will be dealt with and India will come in the summer term

"As before, there will be concerts by the People's Concert Society and plays given from the studio The plays include Drinkwater's 'Oliver Cromwell,' Ian Hay's 'The Rising Generation' and Shakespeare's 'Macbeth,' 'Julius Caesar' and 'As You Like It.'

"Most of the lessons are intended for the older children of the elementary school. The younger children are envious and look upon listening as a treat and a privilege.

"Secondary schools are to have their share also Four courses will be given in rotation on divers subjects of special interest, such as anthropology, modern poetry, or the League of Nations, with the idea of stimulating the imagination of the pupil and increasing his general knowledge"

And thus it will be seen, despite Mr Damrosch's commendable effort, the United States is still pretty far behind the procession in this important use of radio in schools.

So He Could Say It.

It is evident that Walter Damrosch, conductor emeritus of the New York Symphony Orchestra, derives great enjoyment from his fan mail. He told with particular zest of a South Dakota listener—a plainsman—writing to say that when Mr Damrosch was broadcasting the "Pilgrim's Chorus" from Tannhauser that he grabbed up "his old 'cello" and joined in

"I did that," the plainsman confided, "so that I could say I once played with Walter Damrosch and the New York Symphony Orchestra."

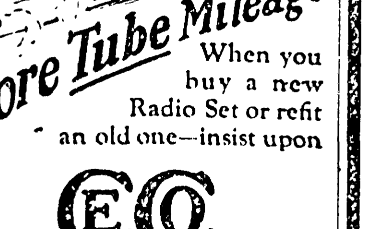
CAMERAS PROHIBITED.

Navy Refuses to Approve Radio Photos for Publication.

Two photographs taken by a well known photo news agency, showing the transmitting and receiving rooms of a certain American battleship have been the cause of an inquiry. They were taken during the Army and Navy manoeuvres recently and were submitted to censorship through routine channels. The Navy Department refused to pass the pictures for publication and further states it is at a loss to understand why the photographer was permitted to gain access to the radio rooms.

"Certain radio transmitters, receivers and parts are not confidential in themselves, that is when taken separately and not installed for use," Navy officials explained, "but all radio installations are confidential and photographers should not be given access to them without specific authority in each instance, even though the pictures be ultimately submitted for censorship."

WANTED Women and Girls who are lovers of color to send for FREE 4-color publication entitled "COLOR NEWS" $5,000, in Prize Contest for those who are willing to use a little energy in this connection No Selling. Just Recommending If you see you can recommend SUNSET DYES and DY-TINT the new 10c Tint, you can enter this Contest Housewives High School Girls YWCA Girls Write Dept. R. North American Dye Corp., Mt Vernon, N. Y.
$15,000. Cash Prizes in 3 Contests $5,000, "Recommender" Prizes, $5,000, "Dealer" Prizes; $5,000 "User" Prizes Prizes announced weekly over radio! Nation-wide.
Note. There's a big Radio Program Tie-up to this contest.


More Tube Mileage
When you buy a new Radio Set or refit an old one—insist upon
CeCo
for Clarity, Tone, Longer Life
A type for every radio need.
Your dealer will help you select the types needed for your set.
C. E. MFG. CO., INC.
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FIRST RADIO STORE IN PROVIDENCE
BUY YOUR NEW ALL ELECTRIC
ATWATER KENT
At This DEPENDABLE RADIO Store
The famous all electric Atwater Kent operates direct from the light socket through the new A. C. tubes. No batteries or eliminators. Less accessories $88
SOLD ON EASY TERMS
R. I. ELECTRICAL EQUIPMENT CO.
· MAZDA LAMPS · FIXTURES · APPLIANCES · CONTRACTING ·
45 WASHINGTON ST. INCORPORATED 1892 PROVIDENCE, R.I.

RADIO PROGRAMS

WEAN starts broadcasting at 11 a. m. with the service from the Mathewson Street Methodist Episcopal Church. The Columbia Chain programs will be heard at 3 p. m., 4 p. m., 9 p. m. and 10 p. m. At 6:30 p. m. will be broadcast an organ recital and at 7 p m. the Asia Serenaders. Tomorrow at 8 30 p. m. Linus Travers will broadcast "Here's a Book." The Women's Institute conducted by June Abbott will be on the air at 9:45 a. m. on Tuesday. "Studies of the Constitution" under the auspices of Mrs. Althea M. Jencks in co-operation with the Rhode Island State Board of Education, also Dr. Walter E. Ranger, will be broadcast Wednesday at 7:30 p. m. The Hofman studio ensemble will be on the air at 12 m. on Thursday. Friday at 8 01 p. m. will be broadcast the amateur boxing bouts from Arcadia under the auspices of the Providence Athletic Club. The station will broadcast La Lysine International at 7:50 p. m. on Saturday presenting the Chicago Civic Opera in "Rigoletto" with Eide Norena, Lorna Doone Jackson, Antonio Cortis, Richard Bonelli, Virgilio Lazzari and the conductor, Roberto Moranzoni.

WJAR will commence its week of programs at 3 p. m with the Young People's Radio Conference under the direction of the Greater New York Federation of Churches. At 4 p. m. will be broadcast the Men's Conference from the Bedford Branch of the Y. M. C. A. and at 6:30 p. m. the Weymouth Post No. 79, American Legion Band. The Capitol Theatre program will be on the air at 7:20 p. m. David Lawrence will give a talk entitled "Our Government" at 9 p. m., and the Robert W. Powers' Orchestra will be broadcast at 9:15 p. m. A musical program will be broadcast tomorrow at 7:35 p. m. consisting of Harold Strong, tenor soloist; Valeda Gibeault, soprano, and Hilda Whiting, reader. Tuesday at 8:35 p m., Friedolf Freedlund, bass soloist, will be on the air accompanied by Mildred Bidwell. Leo J. Faucher and his artists will present a program of dance music at 6:30 p. m. on Wednesday, soloist, Raymond Pigeon. The customary program will be broadcast from the station on Thursday. William J. McKenna, baritone soloist, accompanied by Violette Marks, will be on the air at 9:35 p. m. on Friday. Madge Hart O'Rourke, soprano soloist, will be broadcast from the station Saturday at 7:30 p. m.

WLSI begins its weekly programs at 10 30 a m. with the International Bible students' program, who will also broadcast at 5:30 p. m. At 8 p. m. will be heard the service from the Church of the Seventh Day Adventist. Monday and Tuesday the usual programs will be observed. At 7:30 p. m. on Wednesday Eli Aylsworth will give a travel talk. The Rainbow Garden Orchestra will be on the air at 7 p. m. on Thursday. The Cinderella dance orchestra will be broadcast from the station at 8 30 p. m. on Friday. Saturday the customary program will be heard.

WCOT starts broadcasting at 1:30 p. m. with the Hilo Hawaiians Tomorrow at 2 30 p. m. will be heard a studio program. Milt MacNeil and his Blackstone serenaders will be on the air at 7:30 p. m., Tuesday. Wednesday at 7:30 p. m. Marion Prescott and Florence Deitz will broadcast a program of banjo and piano specialties. Thursday and Friday the customary programs will be broadcast. The Rejala entertainers will be on the air at 8 p. m. on Saturday.

WFCI broadcasts a concert at 8:30 p. m. tomorrow by the merry old-timers. Rajah Rabold, Oriental mystic, will be on the air at 2 p. m. on Tuesday. At 7:30 p. m. on Wednesday will be broadcast the Boy Scouts' anniversary program. Thursday at 2 p. m. Mrs. Spencer Arnold, reader, will be on the air. At 9 p. m. on Friday Eddie Casey and his harmonica and tiple orchestra will be broadcast. Saturday at 2 p. m. will be heard a musical program.

WEAN—THE SHEPARD STORES—275.

Today.

11.00 a. m.—Service from Mathewson Street Methodist Episcopal Church.
3 00 p m.—Columbia chain program.
4·00 p. m.—Columbia Chain program.
6.30 p. m.—Organ recital.
7:00 p. m.—Asia Serenaders.
8.00 p. m.—Correct time.
9:00 p. m.—Columbia broadcasting system program.
10:00 p. m.—Columbia Chain program.

Monday.

9.45 a. m.—Women's Institute conducted by June Abbott. "Learn to Earn Leisure," by June Abbott.
10·00 a. m.—Musical program.
10.30 a. m.—"Good Groceries," by Sally Sawyer.
11:00 a. m.—Symphony Orchestra.
11 30 a. m.—Musical program.
11.55 a. m.—Time signals.
12:00 m.—Asia Serenaders.
12:30 p. m.—Weather report.
12:35 p. m.—Continuaiton of musical program.
4:00 p. m.—Musical program.
4:30 p. m.—Weather report.
6:30 p. m.—Dinner dance program.
6:55 p. m.—Army recruiting realities revealed.
7:00 p. m.—Dinner dance program.
8:00 p. m.—Correct time.
8:30 p. m.—"Here's a Book," by Linus Travers.
9:00 p. m.—Columbia Chain program.
10.00 p. m.—Columbia broadcasting system program.

Tuesday.

9:45 a. m.—Women's Institute conducted by June Abbott. "Learn to Earn Leisure," by June Abbott.
10·00 a. m.—Home service radio chat.
10:30 a. m.—Session, Rhode Island State Federation of Women's Clubs.
11.00 a. m.—Symphonic Orchestra.
11·30 a. m.—Musical program.
11·55 a. m.—Time signals.
12.00 m.—Hofman studio ensemble.
12·30 p m.—Weather report.
12:35 p. m.—Continuation of musical program.
4:00 p. m.—Organ recital.
4·30 p m.—Weather report.
6·30 p. m.—Dinner dance.
7.05 p. m.—Feature.

Continued on Page Seven.

"If it's RADIO we SERVICE it"
R. I. Radio & Electric Co.
60 WEYBOSSET ST.
Tel. Gaspee 8417

The Outlet Company

CLEARING SALE of Fine RADIO SETS

and HIGH GRADE ACCESSORIES

At Radical Reductions

Ranging from **15%** *to* **60%** *Below List Prices*

These Ridiculously Low Prices Speak for Themselves

Those who appreciate the quality of these nationally advertised Sets and Accessories will realize that here is the OPPORTUNITY OF THE YEAR!

SET	List Price	Sale Price
CROSLEY 601	$55.00	$42.50
FRESHMAN 6-TUBE, single dial, 7-f-3 (Including console, console, cone speaker built-in.)	$79.50	$49.75
FRESHMAN 6-TUBE, single dial, 7-f-5 (Including Credenza high boy, cone speaker built-in.)	$99.50	$59.75
RADIOLA 30-A—8 Tubes Included	$495.00	$395.00
FREED-EISEMANN 800	$385	$179.50
GRIMES 5 B SET		$9.89
FARRAND SR. CONE SPEAKERS	each	$19.89
RADIOLA No. 104 CONE SPEAKERS, each (This is a power speaker complete with tubes.)	$275.00	$149.00
CROSLEY ULTRA CONE SPEAKERS	each	$5.95
ALL STORAGE BATTERIES	each	$8.95
ELKON A POWER	$69.50	$29.75
C BATTERIES	each	29c
APCO CHARGERS, each	$16.50	$9.89
SILITE TRICKLE CHARGERS, each	$10.00	$5.95
BALKITE ELIMINATOR KX	each	$19.89
FRESHMAN AC B ELIMINATOR	each	$10.89
PHILCO SOCKET POWER (All Types)	each	$29.75
POOLEY CABINET (with or without Atwater Kent Set), 30% Off List		

Some of These Radio Sets Have Been Used as Samples on the Floor But ALL ARE PERFECT IN EVERY WAY

QUANTITIES LIMITED — Only Early Attendance Will Assure Obtaining Your Choice.

Radio Store, Fifth Floor

THE OUTLET COMPANY

RADIO BOARD HAS OFFICIAL SUPPORT

Leaders Urge Prolonging Its Life Another Year

Representative White and Senator Watson Head Those Who Favor Extension.—Former Sharp in His Criticism of Group's Accomplishments.

The handwriting is on the wall for at least another year of active life by the Federal Radio Commission. This is foreshadowed by the fact that where administration leaders were out of step last year, they are now apparently pulling together.

This is shown by the fact that Representative Wallace White, Jr. (R.), Maine, and Senator James Watson (R), Indiana, almost simultaneously introduced measures in the House and Senate respectively which would prolong the life of the Commission another year, beginning March 15.

To make it unanimous, Secretary Herbert Hoover also declared that in his opinion it was very desirable for the Commission to be continued at least another year.

Senator Watson's bill was simply for the continuation of the Commission, but that of Congressman White carried with it several amendments smacking of the old-time "trust busting" era, one of which would give the Commission the power to fix the time during which chain broadcasting may be carried on, to designate the stations which may be in a hookup, to limit the number of stations which may be in a hookup and to fix the power and wave length.

Another amendment would give the Commission authority to prohibit commercial advertising through a chain of stations. A final amendment is aimed at the alleged monopoly in radio patents.

"I am not yet certain that in the committee I shall approve this provision. I have included it in this bill for much the same reason that I have incorporated the provision with respect to chain broadcasting," Representative White continued. "This question of radio patents is continually discussed, there is a wide spread feeling of dissatisfaction with the existing situation. The subject is surely worthy of investigation and study."

Surprise was occasioned in official circles by the sharp criticism made of the work of the Commission by Representative White at the time he introduced his bill.

"I do not favor the extension of the life of the Commission because of satisfaction with its works, but on the contrary, I propose it because of the failure of the Commission to carry out in important respects the manifest interest of the 1927 Radio Act."

Mr. White said admittedly there were too many stations on the air when the Commission took over the situation and that the law furnished the opportunity and imposed the obligation to eliminate through a refusal to license all stations not contributing to the public need. Another provision required such a distribution of power and time as would give efficient radio service throughout the entire country.

"It has seemed to me that the Commission has completely failed to measure up to expectations in these particulars," Mr. White commented more or less caustically. "It did not require applicants to make an affirmative showing that the operation of their stations would serve the public interest but it automatically issued licenses under the new law to all applying therefor.

"The result is that today there are substantially the same number of broadcasting stations as when the Commission began its activities; there is the same utterly inexcusable concentration of stations in certain congested areas; there is the same absence of stations in many parts of the United States; and it seems to me that the fact itself of the issuance of a license under the new law makes it much more difficult now either to reduce the number of stations or to force a relocation of them in less congested areas throughout the United States; and it seems to me that the fact itself of the issuance of a license under the new law makes it much more difficult now either to reduce the number of stations or to force a relocation of them in less congested areas throughout the United States."

SIMPLICITY WANTED

Numbering Wave Channels Certain to Be Popular.

Efforts of progressive-minded persons to simplify radio by designating ether channels by numbers instead of wave lengths or frequencies is certain to meet with the approval of the radiolist. He long has considered radio unnecessarily technical and will favor anything that tends to clear up the situation.

There appears to be no good reason why receivers should be calibrated for wave lengths running to three numerals when numbers ranging from 1 to 99 could be used without deranging any existing arrangements with regard to assignment of channels. And now that the radio world is thinking in terms of such matters, the radio owner is beginning to wonder why it is necessary to speak of neutrodynes and superheterodynes, eliminators and rheostats, biasing and acuminators and the rest of it.

Today's radiolist is the average person who knows little of radio technique and who is just practical enough to want things made clear. He knows only too well that many radio experts who eat, drink and sleep radio, enjoy their own technique and often unconsciously add to its complication.

ANSWERS TO RADIO TEST

1. One supported by an advertiser.
2. Those portions used to fill out the broadcast between "sponsored" programs and for which the broadcaster stands all the expense.
3. A tube that must be used in a special position, as in the detector socket, audio stages, last audio stages, etc.
4. "Hiss" actually disappears when the carrier wave is picked up.
5. Yes, but poorly and with greatly reduced volume. Many radiolists actually bring about such a condition by operating with a "C" battery until it has no current left for biasing.

Today's Programs in Brief

For the convenience of radio fans the following hourly schedule of broadcasting today is given in brief form. Figures following stations denote wave length.

The hours are based on Eastern Standard Time.

LOCAL STATIONS.

10:30—Church, WLSI, 261.
11.00—Church, WEAN, 275.
1 30—Concert, WCOT, 225.
3.00—Conference, WJAR, 484. Music, WEAN, 275.
4:00—Conference, WJAR, 484. Music, WEAN, 275.
5:30—Church, WLSI, 261.
6:27—Weather, WJAR, 484.
6.30—Organ, WEAN, 275. Music, WJAR, 484.
7:00—Music, WEAN, 275.
7:20—Concert, WJAR, 484.
8.00—Correct time, WEAN, 275. Church, WLSI, 361.
9:00—Music, WEAN, 275. Talk, WJAR, 484.
9:15—Orchestra, WJAR, 484 Correct time, WJAR, 484.
10.00—Music, WEAN, 275.

EASTERN STATIONS.

9.00—Feature, WJZ, 454; WPAP, 395.
9.30—Church, WKBW, 217.
10:20—Concert, WFI, 405.
10:30—Church, WHAM, 278; WKBW, 217. WGY, 380.
10:45—Church, WGR, 303; WBZ, 333; WIP, 508.
10:50—Church, WEEI, 448; WICC, 365.
11:00—Church, WRNY, 809; KDKA, 316; WRC, 369; WAAM, 349. WDRC, 283.
12:00—Orchestra, WEEI, 448.
12:30—Music, WEVD, 246.
1:00—Feature, WJZ, 454. WHN, 396; WRC, 469. Music, WEAF, 492; KDKA, 316; WBZ, 333. WHAM, 278. Orchestra, WEEI, 448.
1:30—Music, WHN, 396.
2.00—Church, WEAF, 492; WFBL, 258. Orchestra, WRC, 469; WHN, 396. Feature, WEEI, 448; WICC, 265. Roxy and his gang, KDKA, 316; WBZ, 333; WJZ, 454.
2.30—Sunday school, WOO, 508. Music, WICC, 265.
3:00—Church, WRC, 469 WKBW, 217. Talk, WBZ, 333, WEEI, 448. Ensemble, WJZ, 454 Conference, WEAF, 492; WTIC, 535. Music, WFBL, 258; WRNY, 326; WOR, 422. WICC, 265.
3:15—Talk, WEEI, 448. Church, WRNY, 236. Organ—WPG, 273
3:20—Feature, WRNY, 326.
3.30—Feature, WICC, 265; WDRC, 283. Orchestra, WGY, 380. Music, WJZ, 454; WEEI, 448. WRNY, 326 WBZ, 333. Concert, WHAM, 278.
3:45—Music, WRNY, 326, WAAM, 349
3.55—Church, WJZ, 454.
4.00—Organ, WGY, 380. KDKA, 316; WHAM, 278 Lecture, WIP, 508. Church, WRC, 469. WAAM, 349 Conference, WEAF, 492. WEEI, 448. WFAG, 517; WTIC, 535 Music, WFBL, 258, WICC, 265. WOR, 422. WRNY, 326.
4 15—Music, WPG, 273. WRNY, 326.
4 30—Church, WFI, 408
4 45—Church, KDKA, 316.
5.00—Music, WRNY, 326; WHAM, 278. Orchestra, WHN, 396. Church, WFBL, 258 Feature, WLWL, 370.
5 15—Music, WAAM, 349.
5 30—Music, WEAF, 492; WRNY, 326; WEEI, 448. WGY, 380. Feature, WJZ, 454. Ensemble, WHN, 396. Vespers, WBZ, 333. WHAM, 278
6.00—Lecture, WRNY, 326. Orchestra, WHN, 396. Organ, WOO, 508 Music, WEAF, 492, WFI, 405; WEEI, 448. WGY, 380, WRC, 469.
6.15—Forum, WRNY, 326. Orchestra, KDKA, 316.
6:30—Feature, WHAM, 270. KDKA, 316 WBZ, 333. WBAL, 286. WHN, 396. WJZ, 454. Band, WEAF, 492, WGY, 380; WGR, 303. WEEI, 448. WRC, 469. WTAG, 517. WTIC, 535. Music, WFBL, 258
7.00—Ensemble, WHN, 396 Church, KDKA, 316; WKBW, 217. WOO, 422. Music, WHAM, 267; WBZ, 333; WJZ, 454. Forum, WICC, 265.
7 20—Capitol Theatre program, WEAF, 492. WGY, 380. WTAG, 517. WRC, 469. WTIC, 535. News, WEEI, 448
7 30—Church, WGR, 404 Music, WEEI, 448. WJZ, 454. Talk, WBAL, 286.
7 45—Music, WJZ, 454. WOR, 422.
7 50—Music, WBZ, 333.
8 00—Church, WLWL, 270. Music WHAM, 278; WBAL, 286; WHAP, 236.
8.15—Music, KDKA, 316; WBZ, 333; WJZ, 454.
8 30—Reader, WHAP, 236.
8 45—Chimes, WOR, 422.
9.00—Church, WBAL, 286. Talk, WGY, 380, WGR, 303; WRC, 469, WEAF, 492; WTAG, 517; WTIC, 535. Feature, WOR, 422. Music, WFBL, 258, WHAM, 278 News, WEEI, 448; WPG, 273.
9 10—Music, WEEI, 448, WPG, 273
9 15—Atwater Kent hour, WEAF, 492. WEEI, 448, WGY, 380; WFI, 408, WRC, 469. News, WTAG, 517. Music, WBS 333, WJZ, 454; WHAM, 278; KDKA, 316; WGBS, 349
9 30—Music, KDKA, 316, WFBL, 258; WHAM, 278, WJZ, 454; WOR, 422
9 40—Operetta, WGBS, 349.
9.45—Music, WHAM, 278, WJZ, 454; KDKA, 316.
10 00—News, WBZ, 333. Music, WFBL, 258; WOR, 422; KDKA, 316, WHAM, 278, WPG 273, WJZ, 454.
10 05—Music, WBZ, 333.
10 10—Music, WHN, 396.
10.15—Orchestra, WIP, 508. Music, WJZ, 454; KDKA, 316; WKBW, 217. Drama, WEAF, 492; WGY, 380; WRC, 469, WFI, 405. Talk, WEEI, 448.
10 20—News, WEEI, 448.
10 35—Weather, WJZ, 454.
11.00—Organ, WHN, 396.
11 30—Orchestra, WHN, 396.
12.00—Orchestra, WHN, 396. Church, WBSO, 384.

DISTANT STATIONS

11 45—Special, WGHP, 277.
1:00—Music, WOC, 353, WLW, 428; WTMJ, 294.
2.00—Music, WMAQ, 448. Roxy and his gang, KYW, 526; WOC, 353; WJR, 294; WTMJ, 294. Organ, WLW, 428.
3:00—Conference, WOC, 353; WTMJ, 294. Music, WLW, 423; WGHP, 294; WSAI, 428; KYW, 526, WMAQ, 448.
4 00—Organ WTMJ, 294 Music, WSAI, 428; KFI, 469; KGO, 345; WTAM, 448.
4 15—Orchestra, WTMJ, 294
5 00—Music, KNX, 396; WMAQ, 448.
5 30—Music, WJR, 294; WSB, 476; WMC, 517. WOC, 353.
5 45—Trio, WMAQ, 448.
6.00—Music, KGO, 384; KFI, 469; WTMJ, 294. Orchestra, WTAM, 400.
6.30—Travelogue, KYW, 526. WJR, 294 Drama, WSAI, 428.
7.00—Orchestra, WTMJ, 294. Music, WOC, 353. Ensemble, WJR, 441.
7 15—Music, WMAQ, 448
7 20—Music, WTAM, 400. Chimes, WSAI, 428. Capitol Theatre program, WSM 341, WSB, 476, WWJ, 375, WFAA, 545; WMC, 517.
8 00—Music, WTMJ, 294, WMAQ, 448.
8:15—Music, KYW, 526; WJR, 441; WCCO, 405, WLW, 428, WSAI, 361.
8:30—Organ, KOA, 326. Music, KFI, 469; WTMJ, 294.
9:00—Talk, WSAI, 361; WSB, 476, WTMJ, 294; WWJ, 375, WTAM 400. WMAQ, 448. Music, WOHP, 294.
9 15—Music, WLW, 428. WJR, 441. Atwater Kent hour, WSAI, 361, KMTR, 526, WSM, 341, WOC, 353 WWJ, 375, WSB, 476, WCCO, 526 WFAA, 545. WMC, 517. WTAM, 400.
9 17—Talk, KW, 526
9.30—Music, KFI, 469; KGO, 345; KOA, 326. WJR, 441. KMTR, 526
9.37—Music, KYW, 526.
9 45—Music, WJR, 441
10 00—Orchestra, KMTR, 526
10.15—Drama, WSAI, 428. WOC, 353; WFAA, 545. Music, KYW, 526; WTAM, 400; WTMJ, 294. WMAQ, 448. Feature, WCCO, 526.
10 35—Music, KFI, 469
10 45—Trio, WTMJ, 294. Organ, WCCO, 526.
11 00—Organ, WGHP, 310. 526. Music, KFI, 469. KNX, 336; WMAQ, 448.
11 15—Music, WTAM, 400.
11 30—Orgaan, WGHP, 310
12:00—Music, KFI, 469; KNX, 336.
1.00—Orchestra, KFI, 469.
7:45 p. m.—Weather report.
7:50 p. m.—Feature.
8:00 p. m.—RCA hour.
9.00 p. m.—Philco Hour presenting the "Serenade" by Victor Herbert.

WLSI—LINCOLN STUDIOS, INC.—261

Today.

10.30 a. m.—International Bible students' program.
5:30 p. m.—International Bible students' program.
8:00 p. m.—Service from the Church of the Seventh Day Adventist.

Monday.

7:00 p. m.—Hotel Dreyfus string ensemble.

Tuesday.

8.30 p. m.—Dick Harrington and his gang.
10.00 p. m.—Hotel Biltmore orchestra.

Wednesday.

6.00 p. m.—Providence College orchestra.
7 00 p. m.—Blackstone twin city old timers.
7:30 p. m.—Travel talk by Eli Aylsworth.
8.00 p. m.—Musical program.

Thursday.

6 00 p. m.—Guernsey Plaza orchestra.
7 00 p. m.—Rainbow Garden orchestra.
8.00 p. m.—Mrs. Marian Tetreau, astrologist and psychoanalyst.
8.15 p. m.—Twilight Hawaiian quintet.

Friday.

7 00 p. m.—International Bible students' program.
8 00 p. m.—Studio program.
8.15 p. m.—Musical program furnished by Rhode Island Academy of Hairdressing and Cosmetic Therapy.
8:30 p. m.—Cinderella dance orchestra.

Saturday.

7 00 p. m.—Hotel Dreyfus string ensemble.
10.00 p. m.—Hotel Biltmore orchestra.

WCOT—CONN'S OLYMPIA—225

Today.

1:30 p. m.—Hilo Hawaiians.

Monday

2:30 p. m.—Studio program.
7:30 p. m.—Feature.

Tuesday.

2:30 p. m.—Studio program.
7.30 p. m.—Milt MacNeil and his Blackstone Serenaders.
8.30 p. m.—Musical program.

Wednesday.

2:30 p. m.—Studio program.
7:30 p. m.—Marion Prescott and Florence Deitz, banjo and piano specialties.
7:50 p. m.—Arthur Guilmet, whispering tenor.
8:15 p. m.—Peter Favali, tenor, in popular ballads.

Thursday.

2:30 p. m.—Studio program.
7:30 p. m.—Wailana Hawaiians.

Friday.

2:30 p. m.—Studio program.
7:30 p. m.—Ford's musical aces.

Saturday.

2:30 p. m.—Studio program.
7:30 p. m.—Pioneer entertainers.
8.00 p. m.—Rejala entertainers.

WFCI—FRANK CROOK, INC.—242

Monday.

2:00 p. m.—Rajah Raboid, Oriental mystic.
2:30 p. m.—Maybelle Lemoi, pianist.
7:30 p. m.—Musical program arranged by Alice Champoux.
8:30 p. m.—Concert by the merry old-timers.

Tuesday.

2:00 p. m.—Rajah Raboid, Oriental mystic.
2:30 p. m.—Musical program.

Wednesday.

2:00 p. m.—Rajah Raboid, Oriental mystic
2:30 p. m.—Musical program.
7:00 p. m.—Uncle Dave's radio pal period.
7:30 p. m.—Boy Scouts anniversary program.

Thursday.

2:00 p. m.—Mrs. Spencer Arnold, reader.
2:30 p. m.—Musical program.

Friday.

2:00 p. m.—Musical program.
8.00 p. m.—The Reo Wolverines.
9.00 p. m.—Eddy Casey and his harmonies and tiple orchestra.

Saturday.

2.00 p. m.—Musical program.

Continued on Page Eight.

RADIO PROGRAMS

Continued from Page Six.

7.30 p. m.—La Lysine International presents the Chicago Civic Opera Company in "The Jewels of the Madonna" with Rose Raisa, Augusta Lenska, Antonio Cortis, Giocomo Rimini, Ballet, Conductor Roberto Moranzoni.

Wednesday.

9:45 a. m.—Women's Institute conducted by June Abbott. "Learn to Earn Leisure," by June Abbott.
10.00 a. m.—Musical program.
10:15 a. m.—Rhode Island Society for Mental Hygiene, speaker, Esther F. Greene, General Secretary.
10:30 a. m.—Session, Rhode Island State Federation of Women's Clubs.
11:00 a. m.—Symphony Orchestra.
11.30 a. m.—Musical program.
11.55 a. m.—Time signals.
12:00 m.—Asia Serenaders.
12 30 p. m.—Weather report.
12:35 p. m.—Continuation of musical program.
4:00 p. m.—Musical program.
4:30 p. m.—Weather report.
6.30 p. m.—Hotel Narragansett ensemble
7:30 p. m.—"Studies of the Constitution" under the auspices of Mrs. Althea M Jencks in co-operation with the Rhode Island State Board of Education, also Dr. Walter E. Ranger.
8:00 p. m.—Correct time.
8 01 p. m.—Ables Orchestra.
9.00 p. m.—Columbia Chain program.
10:30 p. m.—Columbia Chain program.

Thursday.

9.45 a. m.—Women's Institute conducted by June Abbott. "Learn to Earn Leisure," by June Abbott.
10.00 a. m.—Home service radio chat.
10 30 a. m.—Cooking School, conducted by Alice Bradley.
11:00 a. m.—Symphony Orchestra.
11:30 a. m.—Musical program.
11 55 a. m.—Time signals
12.00 m.—Hofman studio ensemble.
12.30 p. m.—Weather report.
12 35 p. m.—Continuation of musical program.
4:00 p. m.—Musical program.
4:30 p. m.—Weather report.
6:30 p. m.—Asia Serenaders.
7.30 p. m.—Dudley Radio carollers of the Dudley Bible Institute.
8:00 p. m.—Correct time.
8:01 p. m.—Dudley radio carollers.
8.30 p. m.—Broadcast from Metropolitan Theatre Studio
9 00 p. m.—Vesper trio
9 30 p. m.—Original melody ramblers.

Friday.

8.30 a. m.—Morning sing by the Shepard Stores chorus.
9.45 a. m.—Women's Institute conducted by June Abbott. "Learn to Earn Leasure," by June Abbott
10:00 a. m.—Session, Rhode Island State Federation of Women's Clubs, "American Homemakers," by Mrs. Ida S Harrington
10:30 a. m.—"Good Groceries," by Sally Sawyer.
11 00 a. m.—Symphony orchestra.
11:30 a. m.—"Microphone sets suggestions from Dorothy Dow."
11:55 a. m.—Time signals.
12:00 m.—Asia Serenaders.
12.30 p. m.—Weather report.
4.00 p. m.—Musical program.
4.30 p. m.—Weather report.
6:00 p. m.—"Uncle Red," auspices Providence Safety Council.
6 30 p. m.—Dinner dance
7.30 p. m.—F. M. Hathaway of the Better Business Bureau.
7.35 p. m.—Miss Eva Bacon, soprano; Miss Mary Taylor, accompanist.
8:00 p. m.—Correct time.
8 01 p. m.—Amateur boxing bouts from Arcadia, auspices Providence Athletic Club.
9 00 p. m.—Columbia Chain program.
10 00 p. m.—Columbia Chain program.
10:30 p. m.—Columbia Chain program.

Saturday.

9.45 a. m.—WEAN Women's Institute conducted by June Abbott "Learn to Earn Leisure," by June Abbott
10 00 a. m.—Musical program.
10 30 a. m.—"Flowers in the Home," by Marjorie Lane.
10 45 a. m.—New and attractive merchandise, by Anne Howe.
11 00 a. m.—Symphony orchestra.
11 30 a. m.—Musical program.
11 55 a. m.—Time signals.
12.00 m.—Hofman studio ensemble.
12 30 p. m.—Weather report.
12:35 p. m.—Continuation of musical program.
4 00 p. m.—Musical program.
4:30 p. m.—Weather report
6:30 p. m. Boston dinner dance.
7:00 p. m.—Dok and his Sinfonians
7:50 p. m.—La Lysine International presents the Chicago Civic Opera in "Rigoletto," with Elde Norena, Lorna Doone Jackson, Antonio Cortis, Richard Bonelli, Virgilio Lazzari; conductor, Roberto Moranzoni.

WJAR—THE OUTLET COMPANY—481

Today.

3.00 p. m.—Young People's radio conference under the direction of the Greater New York Federation of Churches
4 00 p. m.—Men's conference from Bedford Branch Y M C. A.
6 27 p. m.—Weather report.
6 30—Weymouth Post No. 73, American Legion, band.
7.20 p. m.—Capitol Theatre program.
9 00 p. m.—"Our Government," by David Lawrence.
9 15 p. m.—Correct time.
9 15 p. m.—Robert W. Powers's orchestra.

Monday.

10 45 a. m.—WJAR listening-in embroidery talk by Joan Kaye
10 55 a. m.—Musical program
11 15 a. m.—Radio household institute.
1 05 p. m.—Studio program.
1 30 p. m.—Weather report.
1 35 p. m.—Continuation of studio program.
6.45 p. m.—Earl Shean and his orchestra assisted by William I. Carrigan, tenor.
7 30 p. m.—Weather report.
7.35 p. m.—Harold Strong, tenor soloist, Valeda Gibeault, sopran, Hilda Whiting, reader.
8:20 p. m.—"The Rhode Island Historian."
8 30 p. m.—Correct time.
8 30 p. m.—A. & P. Gypsies.
9 30 p. m.—General Motors family party
10 30 p. m.—"Fisk Time to Retire Boys."

Tuesday.

10:45 a. m.—Musical program.
11 15 a. m.—Radio Household Institute
1.05 p. m.—Studio program.
1:30 p. m.—Weather report.
1 35 p. m.—Continuation of studio program.
6 45 p. m.—Weather report
6.50 p. m.—Hon. J. Hector Paquin, Mayor of the city of Woonsocket, and Daniel J. Morris, President of the Woonsocket Automotive and Electrical Association, will talk on the coming auto and Electrical Show.
7 00 p. m.—Voters' service.
7 30 p. m.—National musicalities.
8 00 p. m.—Seiberling singers.
8 30 p. m.—Safety talk sponsored by the Providence Safety Council.
8:35 p. m.—Friedolf Freedlund, bass soloist, accompanied by Mildred Bidwell.
9 00 p. m.—Correct time.
9 00 p. m.—Eveready hour.
10 00 p. m.—Auction bridge game.

Wednesday.

10:00 a. m.—Housewives Radio Exchange, a department conducted by Mrs. Wood on matters of household interest Questions submitted will be answered by radio
11 00 a. m.—Betty Crocker home service talk.
11 15 p. m.—Radio Household Institute
11 30 a. m.—Providence Better Business Bureau talk.
1 05 p. m.—Studio program.
1 30 p. m.—Weather report.
1:35 p. m.—Irving Spector, violinist
6 30 p. m.—Leo J Paucher and his artists present a selected dance program. Soloist, Raymond Pigeon on the marimbaphone.
7 25 p. m.—Weather report.
7.30 p. m.—The Boconyans.
8 00 p. m.—Statler Hotels program.
9 00 p. m.—Correct time.
9 00 p. m.—Ipana Troubadours
9.30 p. m.—Goodrich orchestra and quartet.

Thursday.

10 00 a. m.—Housewives Radio Exchange, a department conducted by Mrs. Wood on matters of household interest Questions submitted will be answered by radio
11 00 a. m.—Musical program.
11:15 a. m.—Radio Household Institute.
1 05 p. m.—Studio program.
1 30 p. m.—Weather report.
1 35 p. m.—Continuation of studio program.
6:45 p. m.—Assumption Catholic Club minstrel troupe under the direction of Tom Giblin, with Mrs. Tom Giblin, pianist.
7 15 p. m.—Weather report.
7.20 p. m.—F. Stewart Stranahan, Jr., of the Title Guarantee Company of Rhode Island, will give one of the series of human interest talks.
7 30 p. m.—Coward comfort hour.
8 00 p. m.—Dodge Brothers presentation.
8:30 p. m.—Rhode Island State Board of Public Roads talk.
8:35 p. m.—The Boy Friends.
9:00 p. m.—Correct time.
9:00 p. m.—Cliequot Club Eskimos.

Friday.

10 00 a. m.—"Musical Appreciation," by Walter Damrosch, especially arranged to appeal to children of grammar school grade.
11 00 a. m.—Betty Crocker home service talk.
11 15 a. m.—Radio Household Institute.
1:05 p. m.—Studio program.
1 30 p. m.—Weather report.
1 35 p. m.—Pollyanna.
7 45 p. m.—Irving Spector and his Lantern of the White Duck orchestra.
8 30 p. m.—Weather report.
8 35 p. m.—To be announced.
9 00 p. m.—Correct time
9 00 p. m.—Whittall Anglo-Persians
9 30 p. m.—Automobile Club of Rhode Island talk.
9 35 p. m.—William J. McKenna, baritone soloist, accompanied by Violette Marks.
10 00 p. m.—Palmolive hour.

Saturday.

10 00 a. m.—Housewives Radio Exchange, a department conducted by Mrs. Wood on matters of household interest Questions submitted will be answered by radio
11 00 a. m.—Musical program.
11 15 a. m.—Radio Household Institute.
1.05 p. m.—Al Williams and his orchestra.
1 30 p. m.—Weather report.
1:35 p. m.—Al Williams and his orchestra.
7:30 p. m.—Madge Hart O'Rourke, soprano soloist.

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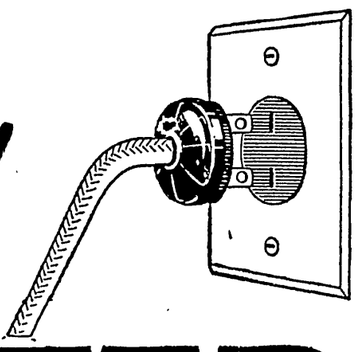

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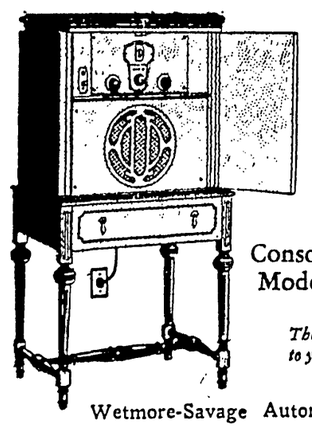

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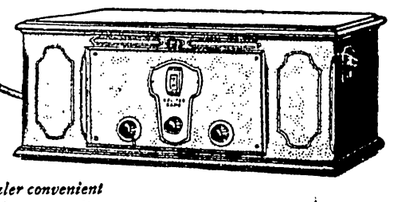

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RADIO PROGRAMS

Continued from Page Seven.

EASTERN STATIONS

KDKA—PITTSBURGH—316.
10:45 a. m.—Correct time.
11:00 a. m.—Church service.
1 00 p. m.—The Golden Strand program
2:00 p. m.—Roxy and his gang.
400 p. m.—Organ recital.
4:45 p. m.—Vesper service from the Shadyside Presbyterian Church.
6:15 p. m.—Symphony orchestra.
6:30 p. m.—Cook's travelogue.
7:00 p. m.—Service from Calvary Episcopal Church.
8:15 p. m.—Collier's hour.
9 15 p. m.—Paula Hemminghaus, contralto.
9:30 p. m.—Vibrant melodies.
9:45 p. m.—Utica jubilee singers.
10 00 p. m.—Utica jubilee singers.
10:15 p. m.—Don Amalzo, the wizard.

WBAL—BALTIMORE—286.
6:30 p. m.—National religious service.
7:30 p. m.—Cook's travelogue.
8 00 p. m.—Concert orchestra in "All-Hungarian" program.
9.00 p. m.—Cantata, "Penitence, Pardon and Peace."

WBSO—BABSON PARK—384.
12:00 p. m.—Midnight ministry.

WBZ—SPRINGFIELD—333.
10.45 a. m.—Service from the First Church of Christ Scientist.
1.00 p. m.—Golden Strand group
2.00 p. m.—Roxy and his gang.
3:00 p. m.—Address by Henry J. Ryan
3:30 p. m.—Blue and Gold Trio.
5:30 p. m.—National religious service.
6:30 p. m.—Cook's travelogue.
7:00 p. m.—National associated studio of music.
7:45 p. m.—News flashes.
7:50 p. m.—Ensemble.
8 15 p. m.—Collier's radio hour.
9:15 p. m.—The K. and S. Ladies' Quartet.
10 00 p. m.—Correct time.
10:00 p. m.—News flashes.
10:05 p. m.—Musical program.
10:35 p. m.—Correct time and weather.

WDRC—NEW HAVEN—283
11:00 a. m.—Services from the Church of the Redeemer.
3:30 p. m.—Chinatown rescue mission program.

WEAF—NEW YORK—492
1:00 p. m.—Hour of chamber music with Katherine Palmer, soprano.
2.00 p. m.—Interdenominational Church services under the direction of the Greater New York Federation of Churches.
4:00 p. m.—Men's Conference from the Bedford Branch Y. M. C. A.
5:20 p. m.—Acousticon hour.
6:00 p. m.—Herbert Borodkin, viola and Samuel Jospe, pianist.
6.30 p. m.—Weymouth Post American Legion band.
7:20 p. m.—Capitol Theatre program.
9:00 p. m.—"Our Government," by David Lawrence.
9:15 p. m.—Correct time.
9:15 p. m.—Atwater Kent hour.
10:15 p. m.—Biblical drama.

WEEI—BOSTON—448
10:50 a. m.—Service from Old South Church.
12:00 m.—Capitol Symphony orcehstra.
1.00 p. m.—Concert orchestra.
2.00 p. m.—Sager hour of hospitality.
3:00 p. m.—Weekly book talk by John Claire Minot, Literary Editor of the Boston Herald.
3:15 p. m.—Sam Curtis radio chat.
3.30 p. m.—Copley players.
4:00 p. m.—Dr. S. Parkes Cadman, Bedford Branch Y. M. C. A.
5 30 p. m.—Acousticon hour.
6.00 p. m.—Musical program.
6.30 p. m.—Weymouth Post No. 79, American Legion band.
7:20 p. m.—News dispatches.
7.30 p. m.—Concert orchestra.
9.00 p. m.—Newspaper sidelights.
9:10 p. m.—Masterpiece pianist.
9:15 p. m.—Correct time.
9:15 p. m.—Atwater Kent hour.
10:15 p. m.—Cruising the air with Bill Harrison.
10:20 p. m.—News dispatches.

WFBL—SYRACUSE—258.
2:00 p. m.—International Bible Students' program.
3.00 p. m.—Columbia Chain program.
4:00 p. m.—Columbia Chain program.
5:00 p. m.—Service, from First Presbyterian Church.
6.30 p. m.—Orchestra.
9 00 p. m.—Columbia Chain program.
9 30 p. m.—Columbia Chain program.
10:00 p. m.—Columbia Chain program.

WFI—PHILADELPHIA—405.
10:20 a. m.—Service from Arch Street Methodist Episcopal Church.
4:30 p. m.—Meeting from the Central Branch of the Y. M. C. A.
6:00 p. m.—Sonata, Herbert Borodkin, viola and Samuel Jospe, pianist.
9:15 p. m.—Correct time.
9:15 p. m.—Atwater Kent hour.
10:15 p. m.—Biblical drama.

WGBS—NEW YORK—349.
9:15 p. m.—Seumas O'Doherty, Irish tenor, Lillian Smith, Irish soprano, with Josephine Smith at piano
9:40 p m.—"Poppies of Old Japan," operetta, sextet.

WGR—BUFFALO—303.
10:45 a. m.—Service from Westminster Presbyterian Church.
12 00 p. m.—Weather forecast.
6.30 p m.—Weymouth Post American Legion Band.
7.30 p. m.—Service from Central Presbyterian Church.
9:00 p. m.—"Our Government," by David Lawrence.
9 15 p. m.—Atwater Kent hour.
10:15 p. m.—Weather forecast.

WGY—SCHENECTADY—380.
10:30 a. m.—Service from First Church of Christ Scientist.
3:30 p. m.—Symphony orchestra.
4:00 p m.—Men's Conference, Bedford Branch, Y. M C. A.
5 30 p. m.—Acousticon program.
6:00 p. m.—Musical program
6:30 p m.—Weymouth Post American Legion Band
7:20 p. m.—Capitol Theatre program.
9 00 p m.—"Our Government," by David Lawrence
9 15 p. m.—Correct time.
9 15 p. m.—Atwater Kent hour.
10:15 p. m.—Biblical drama .

WHAM—ROCHESTER—278
10 30 a m.—Morning church service.
1 00 p. m.—Golden Strand Group.
3:30 p. m.—Symphony concert.
4 00 p. m.—Organ recital.
5:00 p m.—"Musical Milestones," by Marjorie T. MacKown
5 30 p. m.—National Church of the Air.
6 30 p. m.—Fireside Forum.
7:00 p. m.—Theatre hour.
8.00 p. m.—School recital.
9 00 p. m.—Tommy Weir, tenor.
9:15 p. m.—Paula Hemminghaus, contralto.
9 30 p. m.—Vibrant melodies.
9 45 p. m.—Utica Jubilee Singers.
10:00 p. m.—Correct time.
10 00 p. m.—Utica Jubilee Singers.
10.15 p. m.—News and weather.

WHAP—NEW YORK—236
8 00 p. m.—Sacred choral music.
8.30 p. m.—Augusta E. Stetson, D. S. D., Christian Science reading from the writings of Mary Baker Eddy, and remarks.

WHN—NEW YORK—306
1:00 p. m.—"Three Little Sachs"
1:30 p. m.—Studio broadcast.
2:00 p. m.—Symphony orchestra.
5.00 p. m.—Dance orchestra.
5.30 p. m.—Ensemble.
6:00 p. m.—Concert orchestra.
6:30 p. m.—Special.
7.00 p. m.—Ensemble.
10:00 p. m.—News flashes.
10:10 p. m.—Celebrity hour.
11:00 p. m.—Organ recital.
11 30 p m.—Orchestra.
12:00 p. m.—Orchestra.

WIP—PHILADELPHIA—508
10:45 a. m.—Service from the Holy Trinity Church.
4:00 p m.—"St. Paul Appealed Neither to Miracles Nor Authorities," lecture by Arthur Holmes, psychologist.
10:15 p. m.—Symphony orchestra.

WJZ—NEW YORK—454
9:00 a. m.—Children's hour.
1:00 p. m.—Gold strand group.
2 00 p. m.—Roxy and his gang.
3.00 p. m.—Ensemble.
3:30 p. m.—Devora Nadworney, contralto, assisted by Arcadie Birkenholz, violinist.
3.55 p. m.—St. George's vesper service.
5:30 p. m.—National religious service.
6:30 p. m.—Cook's travelogue.
7:00 n. m.—Correct time.
7 00 p m.—Summary of programs
7 00 p. m.—Organ music.
7:30 p m.—Buckley and Chadbourne with string trio.
7.45 p. m.—String quartet
8 15 p. m.—Collier's radio hour.
9:15 p. m.—Paula Hemminghaus, contralto with 'cello.
9 30 p. m.—Vibrant melodies.
9:45 p. m.—Utica jubilee singers.
10:00 p. m.—Correct time.
10 00 p. m.—Utica jubilee singers.
10:15 p. m.—Don Amalzo, the wizard.

WKBW—BUFFALO—217
9.30 a. m.—Episcopal service from the Church of the Good Shepherd.
10.30 a. m.—Public worship, Churchill Tabernacle.
3:00 p. m.—Service with sermon by Rev. J. T. Haugh.
7:00 p. m.—Evangelistic service.
10:15 p. m.—Back home gospel melody hour from the studio.

WLWL—NEW YORK—370
5.00 p. m.—Columbus Council, K. of C. forum.
8 00 p. m.—Services from Paulist Church.

WOO—PHILADELPHIA—422
2.30 p. m.—Sunday school.
6 00 p. m.—Organ recital.
7.30 p m.—Service from Bethany Presbyterian Church

WOR—NEWARK—422
3.00 p. m.—Symphonic hour.
4 00 p. m.—Cathedral hour.
7.43 p. m.—Sunday evening musical
8 45 p. m.—Randall Hargreaves, song discourse.
9 00 p. m.—Effervescent hour.
9 30 p. m.—American singers.
10 00 p m.—Concert band.

WPAP—PALISADES—395.
9 00 a. m.—Children's hour.

WPG—ATLANTIC CITY—273.
3 15 p. m.—Organ recital.
4.15 p m.—Community vocal and instrumental recital.
9:00 p. m.—News flashes.
9 10 p. m.—Concert orchestra.
10:00 p m.—Sunday evening musicale.

WRC—WASHINGTON—469.
11 00 a. m.—Church service.
1:00 p. m.—Chamber music
2 00 p. m.—Symphony orchestra
3.00 p. m.—Interdenominational church service
4.00 p. m.—Service from Washington Cathedral
6 00 p. m.—National Concert Orchestra.
6.30 p m.—Weymouth Post Band
7 20 p m.—Capitol Theatre program.
9 00 p. m.—"Our Government," by David Lawrence.
9 13 p. m.—Correct time
9 15 p m.—Atwater Kent hour
10 15 p. m.—Biblical drama.
10 45 p m.—Weather forecast.

WRNY—NEW YORK—326.
11:00 a m.—St. Matthew's Lutheran Church services.
3:00 p m.—Harry Darnell, tenor
3 15 p. m.—Dr. Minot Simons, "The Challenge to Youth of a Modern Religion"
3 20 p. m.—All Souls' Unitarian vespers
3 30 p. m.—Joseph Perillo, saxophonist.
3 45 p. m.—Florence Stern, soprano.
4 00 p. m.—Feature.
4 15 p. m.—German hour of music.
5 00 p. m.—Tea music.
5 30 p. m.—Male quartet.
6 00 p m.—"Little Journeys Into Great American Industries."
6 15 p. m.—American Hebrew Forum.

WTAG—WORCESTER—517.
4 00 p m.—Men's Conference from Bedford Branch.
6 30 p m.—Weymouth Post American Legion Band
7 20 p m.—Capitol Theatre program
9 00 p m.—"Our Government," by David Lawrence
9 15 p m.—Correct time
9 15 p. m.—News Bulletin.

WTIC—HARTFORD—535.
3 00 p m.—Young People's Conference
4 00 p m.—Men's Conference with Dr. S Parkes Cadman
6 30 p m.—Weymouth Post, American Legion, band
7 20 p m.—Capitol Theatre program.
9 00 p m.—"Our Government," by David Lawrence
9 15 p. m.—Correct time.

ELECTRIC PLOW KILLS FARM PESTS

An electric plow invented by a Pittsburgh man sends a current of electricity into the ground as it turns the soil and the result is that the crops are not only hurried but various pests which inhabit the soil, are exterminated. It is said to make the use of fertilizer unnecessary and worn-out soils are rejuvenated.

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Aloys Havrilla, the announcer so frequently heard in the East, is a Czechoslovakian and a well-known baritone concert singer.

Argentine has 20 broadcasting stations under Government supervision, giving programs. About 150,000 sets are in use in the republic, the majority being concentrated about Buenos Aires.

Radio reception is sometimes improved by having the antenna face a different direction than its present position. This applies particularly to long-distance signals.

The American Foundation for the Blind, in New York city, has distributed 3000 radio sets to blind persons living in 46 States and the District of Columbia.

A radio tube large enough to hold a tall man now operates in the transmitter of WJZ. It is seven and one-half feet high, weighs 100 pounds and has a power of 100 kilowatts.

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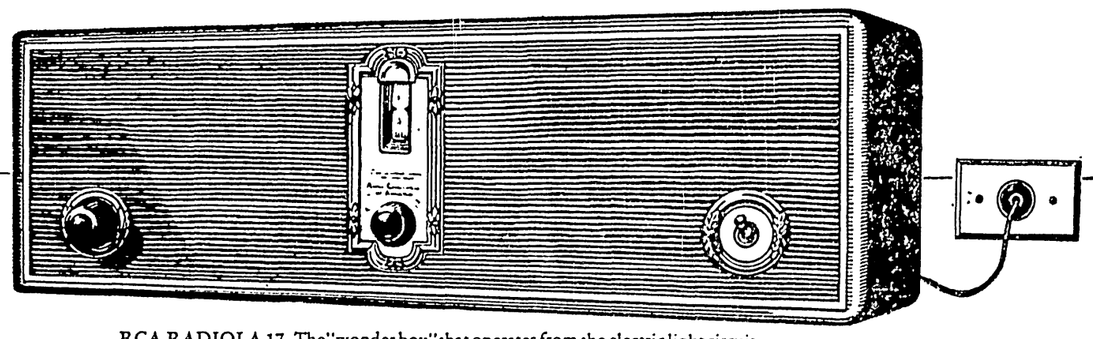

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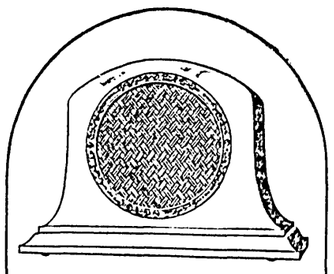

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WJAR KDKA
WTAG WLW
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KSD WOW
WCCO WHAS
WOC WSM
WHO WMC
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