LATEST NEWS OF THE AMATEUR AND COMMERCIAL RADIO WORLD

EXPERT SEES RADIO INFLUENCING LIFE

Believes Press, Pulpit, Schools and Theater Will Benefit.

POSSIBILITIES UNKNOWN

Not Likely to Supplant Telephone or Telegraph, Is His Belief.

By M. P. RICE.

Manager General Electric Radio Broadcasting Station.

Radio telegraphy is more than twenty years old, but radio telephony, in its present form, is a very recent product of inventive genius.

A year ago there were hardly 50,000 radio receiving sets in the United States. According to a recent estimate there are now more than 500,000, and there are sending stations of sufficient power to cover the entire area under favorable conditions. The aggregate number of those who "listen in" to the evening programs of the broadcasting stations probably approaches 1,000,000, and the audience reached by a single station may be 10,000 or more.

A quarter of the population of the United States is within the area reached by "WGY," and under favorable conditions the broadcasting from this station at Schenectady, N. Y., might extend much further. When all the people have access to receiving outfits a speaker at a powerful broadcasting station might address the entire population of the United States at one time.

Possibilities of Radio.

The radio phone is therefore a new publicity agent which literally has everybody "by the ears." It immediately takes its place with the telegraph, telephone, post office, press, pulpit, school and theater as a means of reaching the public and its possibilities are obviously so great that it cannot be regarded as a plaything or a passing fad.

What is likely to be its field of application in the immediate future? In suggesting an answer to this question we do not need to draw heavily on our imagination. Radio has already spurned the limited creations of imaginative writers and has again proved that fact is stranger than fiction.

The telephone has not supplanted the telegraph and radio is not likely to supplant either. It is already in general use for transoceanic communication, and this application will be extended, but radio will not under present conditions supersede the telegraph or telephone for obvious reasons. Broadcasting the morning order for groceries or a chat with an intimate friend might be more entertaining than practicable.

Real Field of the Radio.

The great publicity field for radio is the broadcasting of information or entertainment designed to reach large numbers. If the matter is of universal interest and importance it would be radiated from a few suitably located stations of great power. Matter of more local interest would be broadcast from less powerful stations, which would be installed at suitable intervals throughout the land.

National news would be broadcast from the few powerful stations and local news from the numerous local stations. The President of the United States might address the entire population from a high powered central station, the Governor of New York might address the people of the State through a local station. The message in either case would reach instantly localities not reached by telephone, telegraph, post office or newspaper.

The distribution of music and other forms of entertainment and the broadcasting of educational and religious programs will undoubtedly develop along similar lines.

Radio broadcasting, which is now being done largely by manufacturers as an experimental accessory to the development of the art, will undoubtedly be undertaken as a public service, the details of which will have to be worked out.

Audiences of the Radio.

Ten thousand individuals could probably not be found who would be willing to read consecutively every page of the same newspaper or magazine, and it is not reasonable to suppose that the radio audience will all want the same program at the same time. Therefore, an assortment of wave lengths will be provided; one for market and weather reports, one for financial reports and others for local news, for advertising, for concert music, for dancing, for educational programs, for church services and for theatrical productions.

Radio will exert a powerful influence on the press, the pulpit, the schools and the theater, but it will not supplant them. Public taste will be educated and it will be more critical. It will demand higher standards. There will be a beneficial evolution of press, pulpit, school and theater in which the inferior and the mediocre will be eliminated.

Radio broadcasting carries with it responsibility. It is to be hoped and expected that the power to say something loud enough to be heard by thousands will give rise to a desire to say something worth while and to say it well.

BROOKLYN RADIO SHOW TO START TO-MORROW

Army to Take Leading Part at Dean Street Armory.

So many radio enthusiasts live in Brooklyn, where opportunities for aerials are better than in Manhattan, that that borough will have its own radio show this week.

To-morrow afternoon at 2 o'clock an exhibition of all kind of radio equipment will be opened in the armory of the Twenty-seventh Division, Signal Corps, in Dean street near Washington avenue. The show will continue all week from 2 to 11 P. M.

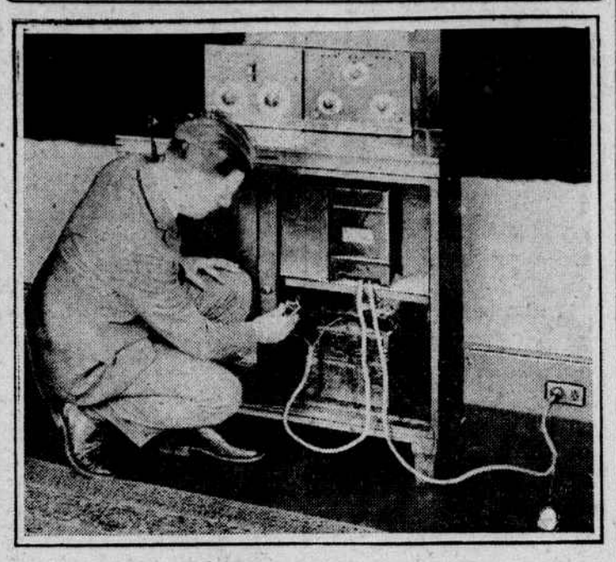
In addition to the commercial exhibits, the army has a truck, rigged with an aerial for field service and a number of other pieces of equipment of interest to the radio fan. The concerts and lectures broadcast by stations at Newark, Fort Wood, Schenectady and elsewhere will be reproduced on loud speakers by the army.

Many radio experts will be present to help those newer to the field to solve problems of all descriptions. The exhibition is under the direction of the Radio Exhibitors Syndicate.

RADIO SAVES LIVES ASHORE.

Although ordinary uses of radio have made it one of the most important methods of communication, it is even more essential in times of disaster. It has saved as many lives on land in times of flood, earthquake, insurrection or other disturbance cutting off other means of communication as it has on sea, although its latter use is better known.

Recharging a Radio Battery at Home



The sudden popularity of radio, which has snowed under manufacturers of wireless equipment everywhere, has also stimulated the demand for other electrical equipment, including, of course, storage batteries.

The General Electric Company, which manufactures much radio equipment, is finding also a big demand from radio enthusiasts for the Tungar battery charger, a gas filled rectifier which formerly was used principally for recharging storage batteries used on automobiles. The smaller sizes, like the two and five ampere capacity chargers, are most wanted by radio operators or broadcast listeners who desire to charge their batteries at home.

The electrical theory on which it works is similar to that of the two element vacuum tube, which has done so much to make radio telephony possible.

The essential part is a bulb, or glass tube, which contains a cathode and an anode. The cathode is a short tungsten filament and the anode—or, in terms of radio, the "plate"—is a graphite disc.

After being exhausted of all air, the bulb is filled with argon, an inert gas. This is the chief difference between the Tungar bulb and other two element bulbs, such as the Flemming valve and the kenetron.

The vacuum tube depends for operation on the emission from an incandescent filament of small particles of electricity, electrons, negatively charged. The electrons themselves are the only current carriers, so that consequently the tube will rectify only a small amount of current at a comparatively high voltage.

In the case of the Tungar bulb the electrons emitted by the heated filament ionize the gas, thereby making it conductive. This ionized gas acts as the principal current carrier, with the result that the bulb operates with a very much lower voltage drop (5 to 10 volts) and is capable of passing a current of several amperes.

The action of the bulb on alternating currents is similar to that of a one way valve or a flow of water. During one-half of the cycle electric current flows through the bulb from anode to cathode, that is, from the "plate" to the filament. But during the other half of the cycle the current cannot flow back. Hence the term "half wave" rectifier.

The two ampere Tunger will charge a six volt battery at two amperes, or a twelve volt battery at one ampere. The five ampere outfit will charge a six volt, three cell battery at five amperes, or a twelve volt six cell battery at three amperes.

It is possible to connect up this rectifier and go away and leave it to work by itself. It will recharge a battery overnight. If the liene voltage fails the battery cannot discharge back through the Tungar. It has the approval of the National Board of Fire Underwriters.

EASY FOR NOVICE TO HEAR BROADCASTS

All He Needs Is a Single Strand of Wire Slung 30 to 50 Feet Above Earth.

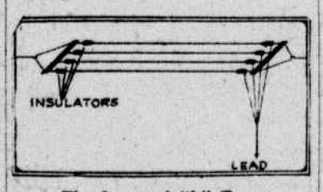
To the novice, trembling on the verge of entry into the radio world, the aerial is the most formidable of the obstacles to be surmounted before the sweet strains of W J Z enter his ears by way of his own set.

The greatness of the difficulties which he must overcome depends upon many and varied things. If he is an apartment dweller, the temperament of his landlord, the shape and height of the roof, and the nearness of power lines or telephone wires all enter into the matter. If he is a suburbanite, the length of his backyard, the nearness of big trees, and the need for a tower or some other support, preferably higher than the house end of his antenna, all enter into the matter.

The radio amateur who desires only to listen to the broadcasts sent out by Newark, Pittsburgh, Springfield or Medford Hillside, need not lose too much sleep and hair over his problem, for all he needs is a single strand of wire, preferably between 175 and 200 feet long, of copper, phosphor-bronze, or aluminum, slung at from thirty to fifty feet above the earth.

A somewhat more elaborate antenna is needed by the novice who hopes some time to go into the sending end of the game, but these are not so terrifically difficult as they may seem after listening to the chatter of expert amateurs.

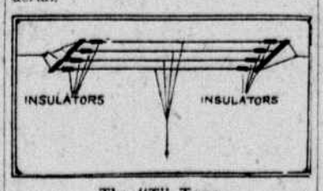
Three types of antenna, the inverted L, the T and the umbrella, which are sufficiently efficient for the work contemplated.



The Inverted "L" Type.

The first of these, much used on ships, is called the inverted L, because the lead-in from the four strands composing it is from one end, giving the appearance of an L with its toe pointing earthward. If you desire to receive one station particularly well—Newark, for example—the aerial should point in that direction, with the lead-in to the apparatus indoors from the end nearest the station. This type is particularly effective in receiving long wave stations. The length of the aerial should not exceed 100 feet, as in sending a longer aerial would give a natural wave length above the 200 meters at present permitted to amateurs.

The second type, the T, is much like the inverted L, for it consists of four wires suspended in the same plane. The lead-in to the set in the case of the T, however, is directly in the center of the span. The amateur must take care to get the precise center if he hopes to secure the maximum efficiency of his aerial.

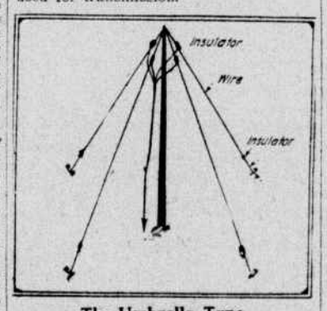


The "T" Type.

The T type should not be longer than 135 feet, and neither of these aerials, if used for transmitting, should be higher than thirty-five feet. Otherwise the natural wave length will exceed the present 200 meters permitted. In the use of this aerial the amateur will discover that the waves come in strongest from stations which are in line with the length of the antenna.

The third type of aerial, the umbrella, is more or less of a make shift, designed for use where the spanning space is not sufficient for either the inverted L or T aerial. This type receives or transmits waves equally well in all directions, but is not a very good radiator in any direction. It consists of a pole or mast, from which four wires stretch downward and outward. The lead in this case is from the upper end of these wires, which are, of course, carefully insulated from both the pole and the stakes at the foot, holding the antenna wires.

There is nothing particularly mysterious about the aerial or its insulation. The object of the aerial is to intercept feeble radio waves. These waves induce in it a current of feeble voltage, but of high frequency oscillation. Naturally this wire should be a good conductor and should be insulated from its supports, so that the whole energy of the current may be led to the receiving apparatus which is to translate it into sound, slight or great, according to the apparatus. Greater care in insulation should be taken if the aerial is to be used for transmission.



The Umbrella Type.

The insulators may be purchased, if other amateurs have not already cleaned out the nearby stores, or ordinary electric light wire porcelain cleats may be used. The lead-in must also be carefully inaulated and should be kept clear of all obstructions.

The lead-in should be brought down to a knife blade switch which may direct the surrent either to the set or through an outdoor connection to the ground. This switch should be thrown to send the current on the latter path when not in use or during thunderstorms. The radio instruments inside the house should be connected permanently to a ground, preferably to a water pipe, by ground clamps. A radiator or a gas pipe may also be used as a ground.

VAUDEVILLE CONTRACTS FORBID RADIO SINGING

Broadcasting Cuts Into Attendance at Theaters.

From Chicago has come the news that singers on vaudeville circuits are prohibited in new clauses in their contracts from singing for radio telephone broadcasting stations. According to the Western Vaudeville Managers Association the best efforts of the singers are needed for the stage and not for the ether.

One reason for the prohibition is believed to be the fact that the increasing number of radio enthusiasts is cutting perceptibly into the attendance at theaters. Many former ardent movie and vaudeville goers are now occupying free seats at home and getting free music and other entertainment via the air route.

In New York city there are also a few signs that theaters either feel now or anticipate a drop in attendance because of radio's popularity.

"Forget that radio music and come to hear our new jazz band," one movie house in Brooklyn appeals in a banner outside its door, and several other signs of similar character are scattered about the city. Even Greenwich Village, which is as proud of its conservatism in the matter of architecture as of its radicalism in art, is waking up to radio. Several tea rooms have installed receiving sets.

AMATEURS BETTER OFF IN U. S.

Freedom of the ether is far greater in this country than in Great Britain, which probably accounts for the greater number of enthusiasts in this country. The British amateur is forbidden to relay messages and can use power up to only ten watts, which means ordinarily a sending radius of ten miles.

EVENTS FO THE WEEK IN THE RADIO FIELD

'La Traviata,' to Be Given in Full by Opera Company at WJZ To-morrow Night—Three Musical Programs From Big Schenectady Station.

The programs for the coming week of the various broadcasting stations which can be heard within a radius of several hundred miles of New York are presented herewith. During the week THE NEW YORK HERALD will print the daily programs of the stations each morning.

Tune instruments for 360 meter waves except in the case of WVP, which sends on 1,450 meters.

Station WJZ, Newark.

(Westinghouse)

Musical program weekdays every hour from 11 A. M. to 6 P. M. on the hour.

Weather forecast (official), daily, 11:00 A. M., 12:00 M., 5:00 and 10:01 P. M. sharp.

Shipping news, week days, 2:05 P. M. (excepting Saturday) by *Marine Engineering and Shipping Age.*

Official Arlington time, 3:32 P. M.

Agricultural reports (official), daily, 12:00 M. and 6:00 P. M.

SUNDAY.

3:00 P. M.—Radio chapel services. Sermon by the Rev. J. P. Stocking, D.D., assisted by the quartet and organist from Christian Union Congregational Church of Upper Montclair.

4:00 P. M.—"Great Books and Life Teachers," by Frederick G. Melcher. Chautauqua lecturer, in a campaign to promote religious education.

6:20 P. M.—"Sandman Tales," by Abbie Phillips Walker; "The Bubble Book That Sings," Ralph Mayhew; courtesy of Harper & Bro.

7:00 P. M.—Recital by Ruth McGuirk, pianist, age 12, who began her musical career ten years ago. Program "Rustles of Spring," "The Palms," and "National Guard March."

Duets by Walter McGuirk and Harold Kelly, age 7, who first sang before the public four and a half years ago. Program, "Tuck Me to Sleep in My Old Tucky Home," "Somebody's Mother," "All By Myself," and "Ain't We Got Fun." Ruth McGuirk at the piano. These boys entertained over half a million soldiers in the camps during the last two days of the war.

7:30 P. M.—"U. S. Coast Guard Service" by B. L. Reed, Commander, New York Division, U. S. C. G.

8:00 P. M.—Recital by Yvonne de Treville, coloratura soprano, Opera Comique, Imperial Theater, Petrograd; Theater Royal, Brussels; to whom was awarded a service medal for singing to 40,000 people at Washington on Armistice Day. The program—Air "Variation," Croch; "Joyous Youth," Corby; "Villonelle," Dell-Acqua; selections from "Barber de Seville," Rossini, and "La Traviata," Verdi. Mabelanna Corby, composer, at the piano.

9:30 P. M.—Recital by Mlle. F. Rezia, who sang in all the large opera houses abroad—England, France, Italy, Belgium and also in Argentina, Havana and Mexico. Program: "Musette Perilhon," "Maman, dites moi," "Bell Song," from "Lagme"; "The Water of Minnetonka," Lieurance; "Just You," Burleigh; "La Partida," "Green," Debussy; "Musetta's Waltz," from "Boheme," Puccini. Courtesy Aeolian Company.

MONDAY.

7:30 P. M.—"Save a Life," by Capt. Charles Scully, associate director, life saving, Atlantic Division American Red Cross Society.

8 P. M.—"La Traviata," an opera in three acts, by Giuseppe Verdi, will be performed via radio under the personal direction of Charles D. Isaacson of the New York *Evening Mail.* The performance has been rehearsed, coached and conducted in radio technique by Maestro S. Avitabile, who has sponsored and directed many operatic ventures in New York.

The Cast — *Violetta Valery*, the woman, Grace Hoffman; *Flora*, her friend, Clara Spencer; *Alfred Germont*, lover of the girl, Edward Battente; *Georgio Germont, Alfred's* father, Domenico Lombardi; *Gastone*, Viscount of Letoriers, A. Baldi; *Baron Douphol*, rival of *Alfred*, P. Moscoto; ladies and gentlemen, friends of *Violetta*, matadors, picadors, gypsies, servants, &c. The action is laid in Paris 1700. Act I.—Drawing room in *Violetta's* Paris mansion. Act II.—A little house near Paris, the home of *Alfred* and *Violetta*. Act III. — *Violetta's* apartment.

Story of the opera, delineation of the scenery, action, chorus work, ballet and embellishment of the singing, by Charles D. Isaacson, during the course of the evening.

9:30 P. M.—Recital by Lattice Howell, American coloratura soprano, who has been engaged by William Hinshaw to sing the leading role for the Society of American Singers; Miss Mary Ludington, accompanist.

TUESDAY.

7:00 P. M.—"Man in the Moon" stories for children (C), Newark *Sunday Call.*

7:30 P. M.—"Food Sanitation," by Prof. W. Paul Heath.

8:00 P. M.—A popular concert by the Brooklyn Teachers Orchestra (forty-five men and women), organized under the auspices of the Brooklyn Teachers Association by District Superintendent James J. McCabe, a musician of broad experience.

Assisting Artists — Michael Hoffman, concert violinist; Claire M. Gillespie, soprano, noted by her recent successes at Strand concerts; Max Weinstein, barytone, an army song leader, now in the musical department of the Board of Education; David Shapiro, accompanist, and Louise Phillips Pfeiffer, the regular accompanist of the orchestra. James J. McCabe, the conductor, is an educator and composer.

The Program—Orchestra, "The Star Spangled Banner"; overture, "Massaniello," Auber; "The Swan," Saint-Saens; "Kuyawiak," Wieniawski; "Ten Little Fingers and Ten Little Toes," fox trot; "Suwanee River Moon," waltz; overture, "Italiana in Algeria"; "Largo," Handel; "Stealing," fox trot; "Three o'Clock in the Morning," waltz; "The Stars and Stripes," Sousa; "My Country, 'Tis of Thee" (American tune), finale.

Soprano solos by Miss Gillespie: "A Birthday," Woodman; "The Sweetest Story Ever Told," Stoltz; "Caro Nome" ("Rigoletto"), Verdi; waltz song, "Sometime," Frimi.

Violin solos by Mr. Hoffman: "O Days of Youth," Tschaikowsky; "Russian Air," Wieniawski; "Spanish Dance," Granados; "The Rosary," Nevin-Kreisler.

Barytone solo by Mr. Weinstein.

WEDNESDAY.

7:00 P. M.—"Animal Stories" by Florence Smith Vincent, New York *Evening Telegram.*

7:45 P. M.—"How Much Meat New York Consumes," by John H. Dohony, Bureau of Markets.

8:30—Concert by the Arion Singing Society of Newark, 60 voices, Otto Wick, director. This society, famed in Newark for its annual concerts, was founded in 1859. The roster of the organization contains the names of many prominent musicians as leaders and members. Though originally a German speaking organization and singing German songs, it is to-day as cosmopolitan as any singing society.

The Arion Society takes special pride in its radio concerts and it will live in memory as vividly as its concert for Mr. Edison's phonograph in 1888.

The program—Arion Chorus, "Shepherd's Song" (German), Kreutzer; "Just Being Happy" (English), Jacobsen; "Homeland" German, Fischer, and "Rosary" (English), Nevin.

Miss E. Diemer, soprano, formerly of the Chicago Opera, who recently returned from an operatic career in Europe, will sing "Arie der Agatha aus Freischutz" (German); "Winter" (German), Wick; "My Lovely Celia" (Old English), and "My Shadow" (English), Hadley.

E. Habig, pianist, who studied under the late C. Wenham Smith, will play "Polonaise in E," Liszt, and "Scherzo, op. 31," Chopin.

8:00 P. M.—"Making Optical Lenses," by J. C. Reiss.

9:30 P. M.—Recital by the Fleming Sisters Trio (Miss Marie, pianiste; Miss Ethel, violiniste, and Miss Florence, celliste). The trio recently toured the United States and won much praise from the musical critics. Program—"Prelude," Rachmaninoff; "Souvenir," Drdla; "Hungarian Dance No. 5," Brahms; "My Heart at Thy Sweet Voice," from "Samson and Delilah," Saint-Saens; selection "Miserere" from "Il Trovatore," Verdi; "To the Spring," Grieg; "Torch Dance from Henry VIII.," German.

THURSDAY.

6:30 P. M.—C. E. Le Massena's operetta "Pandora" will be broadcasted under the personal direction of the composer, who will give an exposition of the plot and dialogue. All seventeen musical numbers will be rendered with the following cast: *Pandora* (soprano), Mrs. C. E. Le Massena; *Hope* (alto), Miss Marion Helm; *Epimetheus* (tenor), Mr. Philip Spooner; *Quicksilver* (barytone), Mr. William H. Henningsen. The Edith Rose Trio (violin, cello and piano) will provide the instrumental numbers and accompaniments and a selected choir will sing the choruses. This operetta is especially interesting to young folks and is presented at an early hour for their accommodation. Courtesy Aeolian Company.

7:30 P. M.—"Little Jack Rabbit and the Fox," by David Corey, New York *Evening Mail.*

7:45 P. M.—"The Priceless Ingredient in Food and Drug Products," by William R. M. Wharton, Bureau of Chemistry, United States Department of Agriculture.

8 P. M.—Concert by the Roseland Orchestra of Newark under the leadership of Joseph Murray.

9:15 P. M.—Recital by Esther Dale, soprano, recently soloist with the Boston Symphony Orchestra and teacher of singing at Smith College, who recently scored a success by recitals in New York and Boston. The program includes "Allelulia, from Mottette," "Exultate," Mozart; "Volkslieder," Brahms; "Les Cigales," Chabrier and "The Beloved Stranger," Herreshoff.

FRIDAY.

7 P. M.—"Man in the Moon" stories for children (C), Newark *Sunday Call.*

7:30 P. M.—"Crime Wave," by Francis M. Hugo, vice-president National Surety Company.

8 P. M.—Concert by the Hexamer Drum, Fife and Bugle Corps of Newark, who are the Eastern States' champions and winners of 38 first prizes; Major J. J. Morrison, director. The program: "Regimental Pride" (March); "Repasz Band March," "Emblem of Peace" (March), George A. Reeg, Jr.; "Tenth Regimental March," B. B. Hall; "Invercargill" (march), "National Spirit" (march), "Greeting to Bangor" (march), B. B. Hall; "The New Colonial March," B. B. Hall; "Haymaker" (march), Drum Major, William Martin; "National Airs."

9:30 P. M.—Recital by Miss Mabel Leggett, soprano; Marguerite Baille, pianiste.

SATURDAY.

6:45 P. M.—"Uncle Wiggily's Bedtime Stories," by Howard R. Garis, the author of the "Uncle Wiggily" stories printed in many newspapers and frequently appearing on KDKA'S and WBZ'S radio programs.

7:45 P. M.—"Our Defense Against Invasion of Plant Enemies," by Dr. Harry B. Starr, pathologist in charge of the Federal Horticultural Board, New York city.

8:00 P. M.—Dance music, by West's Colored Syncopaters of New York, under the direction of William West. The orchestra was founded in 1918 by Laura Irene West; to-day it consists of thirty-five talented musicians. The following members will give the radio concert: ; Bernard Evans, pianist; Cornelius Woodby, violinist; Samuel Nicholas, violinist; William West, banjo mandolin; Seymour Iricks, cornetist; Fitz Smaile, cornetist; George Dayle, saxophone; Leo Billings, trombone, and Jesse West, traps. The program consists of twenty-eight numbers, which will be announced on the night of the concert.

SUNDAY.

3:00 P. M.—Radio chapel services by Mgr. F. McHugh, St. Patrick's Cathedral, Central avenue and Washington street, Newark; sacred music.

4:00 P. M.—Recital by the St. Cecile Male Quartet—Homer Burress, first tenor; Delos Becker, second tenor; Alvah Nichols, first bass; James Thomas, second bass.

Program: Quartet—"Jolly Fellows," Herbert; "Border Ballad," Hatch; "The Drum," Gibson; "Sunset," Van der Water, and "The Lost Chord," Sullivan. Solos—By Homer Burress, "E lucevam le stelle" (La Tosca), Puccini; "Captain Mac," Sanderson, by Alvah Nichols; "Hear Me, Ye Winds and Waves," Handel, by James Thomas. Duet from "La Forza del Destino," Verdi, by Homer Burress and Alvah Nichols. Courtesy Aeolian Company.

6:00 P. M.—"Sandman Stories," by Abbie Phillis Walker; "The Bubble Book That Sings," by Ralph Mayhew. Courtesy Harper & Bro.

7:45 P. M.—"Metropolitan Museum of Art," by Miss Edith Abbott.

8:00 P. M.—Recital by Helen Yorke, soprano; Mabelanna Corby, composer and accompanist.

9:30 P. M.—Recital by the Jones Trio, Arthur Jones director.

Station WYG.

(General Electric).

TUESDAY.

8:00 P. M.—"Serenade Espagnole," harp and violin duet; Miss Elizabeth Reardon, violin, and Master Casper Reardon, harpist; "By Her," humorous reading, Clarence Bennett; fantasie impromptu, op. 66, harp solo, Master Casper Reardon; "The Fat Little Purse," reading, Miss Elizabeth Jane Stahr; "The Rosary," harp and violin duet, Miss Elizabeth Reardon, violin, and Master Casper Reardon, harpist; gavotte, musical reading, Miss Stahr, reader, Raymond Sachse, pianist; "Cradle Song," harp and violin duet, Miss Reardon and Master Reardon; prologue to the play "A Man of the People," reading, Miss Elizabeth Jane Stahr; wooden shoe dance, harp solo, Master Casper Reardon; tribute to John Howard Payne, reading, with musical setting, of "Home, Sweet Home," Clarence E. Bennett, author, Raymond Sachse, pianist.

THURSDAY.

8:00 P. M.—Program to be given by pupils of the Schenectady Conservatory of Music: "Sous Bois," piano solo, Miss Magdalene Stephens; "Lovely Celia," soprano solo, Miss Mathilde Bigelow; Hindu chant, violin solo, Master Francis Jones; "Foolish Questions," reading, Miss Mary Molloy; "My Heart at Thy Sweet Voice," from "Samson and Delilah," contralto solo, Miss Edith Pierson; Viennese melody, violin solo, Miss Dorothy Ritz; pastorelle, soprano solo, Miss Mathilde Bigelow; "The Deceitful Man," reading, Miss Edith Williams; impromptu in A flat, piano solo, Miss Signe Tinnerholm.

FRIDAY.

8:00 P. M.—Program will be given by artists of Albany: "Automne," op. 35, No. 2, piano solo, Mrs. Ralph G. Winslow; "My Heart Is Singing," mezzo-contralto, Mrs. Burt R. Rickards; "The Old Refrain," violin solo, Thomas F. O'Neill; "Invictus," barytone solo, Ralph G. Winslow; "Arabesque," piano solo, Mrs. Winslow; "To You," mezzo-contralto, Mrs. Rickards; "Mazurka de Concert," violin solo, Thomas O'Neill; "The Bird's Courting," barytone solo, Ralph G. Winslow; "Autumn," opus 55, No. 4, piano duet, Mrs. Winslow and Mrs. Rickards; "Conto Amoroso," violin solo, Thomas F. O'Neill.

Station KDKA, Pittsburgh.

(Westinghouse.)

SUNDAY.

10:45 A. M.—Services of Calvary Episcopal Church, Shady avenue, Pittsburgh, the Rev. E. J. Van Etten, rector.

2:45 P. M.—Children's Bible stories, "The Boy With the New Coat."

3:00 P. M.—Radio Chapel at Station KDKA, conducted by the Rev. John Ray Ewers, pastor East End Christian Church, Pittsburgh.

7:30 P. M.—Services of the Point Breeze Presbyterian Church, Fifth and Penn avenues, Pittsburgh, Pa., Dr. P. H. Barker, minister.

MONDAY.

12:30 P. M.—Lenten services from Trinity Episcopal Church, Pittsburgh, Pa., conducted by the Rev. W. H. Anthony, New Brighton, Pa.

8:00 P. M.—"Pittsburgh and Its Scientific Importance," by Dr. E. R. Weidlein, Mellon Institute of Industrial Research, University of Pittsburgh, from the Pittsburgh *Post* studio.

8 P. M.—"Engineering and Happiness," by Dr. F. Paul Anderson, dean of engineering, University of Kentucky. From the Pittsburgh *Post* studio.

8:30 P. M.—Vocal and instrumental selections by Chester Humphreys, Clara Goode, Jessie Wise-Greenewald and Earl B. Collins.

TUESDAY.

12:30 P. M.—Lenten services from Trinity Episcolal Church, Pittsburgh, Pa., conducted by the Rev. W. H. Anthony, New Brighton, Pa.

8 P. M.—"The Legitimate Mining Business in United States and Mexico," by Marshall M. Hickey. From the Pittsburgh *Post* studio.

8:30 P. M.—Entertainment by Arion Male Quartet.

WEDNESDAY.

12:30 P. M.—Lenten services from Trinity Episcopal Church, Pittsburgh, Pa., conducted by the Rev. Z. B. T. Phillips, St. Peter's Church, St. Louis.

8 P. M.—"Pittsburgh—Its Railroad Problems," by J. A. McCrea, vice-president Central Region P. R. R. From the Pittsburgh *Post* Studio.

8 P. M.—"Helping the Poor to Help Themselves," by J. H. Flaherty, secretary and general manager Pittsburgh Association for the Improvement of the Poor. From the Pittsburgh *Post* Studio.

8:30 P. M.—Instrumental and vocal selections by Hanna Davis Shorthouse, lyric soprano, accompanied by Anna Mae Hardy; Cyrus A. Davis, tenor, accompanied by Mrs. Cyrus A. Davis.

THURSDAY.

12:30 P. M.—Lenten services from Trinity Episcopal, Church, Pittsburgh, Pa., conducted by the Rev. Z. B. T. Phillips, St. Peter's Church, St. Louis, Mo.

8 P. M.—"A Forecast of Business Conditions," by Clark Hammond, vice-president Columbia National Bank.

8:30 P. M.—Versatile entertainment by the Cadman Quartet of mixed voices. Mary Cornelius, soprano; Nellie Gretton, contralto; Robert Reed, tenor; Fred McHugh, barytone, and Lucille Gregg, accompanist and coach.

FRIDAY.

12:30 P. M.—Lenten services from Trinity Episcopal Church, Pittsburgh, Pa. Conducted by the Rev. Z. B. T. Phillips, St. Peter's Church, St. Louis.

7:30 P. M.—"Bedtime Stories," by Howard Garis, author and originator of "Uncle Wiggily." To be given from Pittsburgh *Post* studio.

8:00 P. M.—"A Good Dream Gone Wrong," by George R. Wallace. To be given from the Pittsburgh *Post* Studio.

8:30 P. M.—Entertainment by Selana Gularski, soprano; L. C. West, bass; Agnes McGurrin, pianist.

SATURDAY.

12:30 P. M.—Lenten services from Trinity Episcopal Church, Pittsburgh, Pa. Conducted by the Rev. W. H. Anthony of New Brighton, Pa.

3:00 P. M.—Popular concert by Pittsburgh Strollers Orchestra.

7:30 P. M.—"Bedtime Stories," by Howard Garis, author and originated of "Uncle Wiggily." To be given from Pittsburgh *Post* Studio.

8:00 P. M.—"The Junior Civic Club and Its Accomplishments," by Nellie S. Hoover, Peabody High School.

8:30 P. M.—Entertainment by Mrs. Margaret Davis, soprano; Louis M. Garatt, barytone; Marion Engle, pianist and accompanist.

Station WBZ, Springfield, Mass.

(Westinghouse.)

SUNDAY.

3:00 P. M.—Radio chapel services, sermon by the Rev. H. E. Chapman, Carew Street Baptist Church, sermon on "Abounding Light."

8:00 P. M.—Church services at WBZ, assisted by quartet of the Baptist Church: Clarence Tuber, barytone; Tyler Clark, bass; Elwood Steward, second tenor; C. Bernard Chapman, first tenor, and Mabelle Chapman, pianiste.

MONDAY.

8:00 P. M.—Musical recital by Fabiola Richardson, soprano; Alwyn E. Beach, barytone; Eathe Degray Meteviere, violin; Mrs. S. S. Major, piano; Robert Haley, piano.

TUESDAY.

8:00 P. M.—Metropolitan Quartet, Clara Morgan at the piano; Henry A. Felix, violin; Harry Newsome, violin; Fred Robertson, cello.

WEDNESDAY.

8:00 P.M.—Fenway Novelty Orchestra, George Settle, piano; William Davidson, traps; Dewey Premo, cornet; Thomas Mastroni, violin; Arthur Bassette, banjo; Frank Bocro, trombone; Joseph Burley, saxophone.

THURSDAY.

8:00 P. M.—Concert by Miss A. L. Betralak, soprano.

FRIDAY.

8:00 P. M.—Musical program by International Y. M. C. A.

SATURDAY.

8:00 P. M.—Concert by Frances Lilley, soprano; Honore Savara, piano; Theodore Shortsleeve, violin.

SUNDAY.

3:00 P. M.—Radio chapel services by Dr. Farnham of Advent Christian Church.

8:00 P. M.—Sermon by the Rev. Herbert E. Evans. Musical program by International Y. M. C. A., at studio.

Station WGI, Medford Hillside, Mass.

(American Radio.)

EVERY NIGHT—Late news flashes furnished by the Boston *American* at 7:45 P. M., except on Tuesdays and Thursdays, when at 8 P. M. There is no news report on Sunday night.

Police reports for city of Boston at 8 P. M., except on Tuesdays and Thursdays, when at 8:15 P. M.

(The broadcasts below follow directly after the police reports, except the Bedtime Stories, which are at 7:45 P. M.)

SUNDAY.

Radio Church Service—Sermon by the Rev. Isaac Smith, D. D., pastor of the Third Universalist Church, West Somerville. Subject, "Modern Science and Religion." Special church music, soloist, Brent Curtis, boy soprano, Trinity Church, Boston; E. Lewis Dunham, accompanist, on Estey organ.

MONDAY.

Weekly business report.

Dramatic incidents from Edward Everett Hale's "The Man Without a Country," by Charles F. Atkinson. This isin commemoration of the 100th anniversary of the birth of Edward Everett Hale. "Success," Bayard Taylor, by Mr. Atkinson.

"Saving the Children," by Dr. James L. Barton, national chairman Near East Relief.

Musical program arranged by W. J. Fitzgerald.

TUESDAY.

Bedtime story for the little folks, "Red Squirrel's April Fool," by Miss Eunice L. Randall.

"What We Hear With," personal hygiene talk No. 12, by B. A. Welcome, executive secretary, Junior Department, American Red Cross.

Marimba Solos, by Arthur C. Haskell. The marimba is a rare musical instrument of the Xylophone type of South African and Central American origin.

"What the Movie Cameraman Is Up Against," by George W. Smiley, manager Pathe Exchange, Inc. (The voice with the radio smile.)

WEDNESDAY.

Weekly market report, by Miss D. H. Goodwin of Massachusetts Division of Markets, Department of Agriculture.

Musical program by Ed Andrews and his Orchestra Incomparable.

Selections by Miss Ethel Kenna Brooks, operatic soprano: (1) Aria, "Una Voce Poco Fa," from opera "Il Barbiere di Siviglia," Rossini; (2) "Swiss Echo Song," in English, by Echert; (3) "Villanelle," by Dell Acqua.

THURSDAY.

"Just Folks," by Edgar A. Guest, "the Poet of the People."

Bedtime story for the little folks, "Some Bluejays' Ways" and "The King of the Birds," by Miss Eunice L. Randall.

Dramatic solos by Miss Mary Clark, soprano, accompanied at the Duo Art piano by Mr. Henry Levine. Miss Mary Clark was a protegee of the late Enrico Caruso. (1) "Un bel di," aria from "Madame Butterfly," Puccini; (2) "Mighty Lak a Rose"; (3) "Good Night," Ball; (4) "Annie Laurie"; (5) "For You," Montague.

"The Value of Gold; a Reply to Thomas A. Edison's Questionnaire," by Harvey A. Wooster, Jackson professor of political science and head of the department of economics, Tufts College. This is the first of a series of radio lectures by some of the most prominent educationalists in the country.

FRIDAY.

Amateur night, code practice. Announcement of amateur activities.

Dance music by Jenkins's Cliftondale Orchestra.

SATURDAY.

Weekly fashion talk by Miss Harriet E. Ainsworth, manager clothing information bureau, William Filene's Sons Company.

Popular violin selections by Arthur Eastwood of Westfield, N. H., including "The Angels' Serenade," "Fifth Nocturne," Leybach.

Station WVP, Signal Corps, U.S.A.

(Fort Wood, N. Y. C.)

MONDAY.

8:50 P. M.—"Radio To-day and Tomorrow," by Kenneth W. Payne, editor of *Popular Science.*

9:15 P. M.—Joint recital by Miss Marguerite Cartwright, soprano, and John Wainman, barytone, assisted by Miss Ruth Pearcy, pianist, and G. C. Rudin, violinist.

TUESDAY.

8:50 P. M.—"How to Tune a Regenerative Receiver," courtesy of *Popular Radio.*

9:00 P. M.—"The Big News of the Week," by Mr. H. V. Kaltenborn, associate editor of the Brooklyn *Daily Eagle.*

9:15 P. M.—Miss Sally Hamlin, Brooklyn child entertainer, will recite "Jes' 'Fore Christmas" (Eugene Field), "Casey at the Bat" (Ernest L. Thayer) and "Wynken, Blynken and Nod" (Field), with musical background, "Berceuse" (Grieg). Miss Hamlin will play on the piano "Country Gardens" (Percy Grainger) and prelude in C sharp minor (Rachmaninoff).

Joint recital by Miss Marguerite Cartwright, soprano, and John Wainman, barytone, assisted by Miss Ruth Pearcy, pianist, and G. C. Rudin, violinist.

WEDNESDAY.

8:50 P. M.—"Selecting the Radio Telephone Broadcast Receiving Set," by Mr. Edgar H. Felix, A. I. R. E.

9:00 P. M.—*Evening Mail* special concert of Okeh record artists under direction of Fred W. Hager. The feature of the evening will be the original radio song, "Kiss Me by Wireless." The program follows: William Tildman, master of ceremonies:

1. Virginia Burt and company of Hawaiian players; Justin Ring, pianist and director: (a) "Hawaiian Starlight," Hawaiian intermezzo (Ring-Hager); (