NEWS

Laying Out Scanning Disc Requires Great Accuracy the laying out of the 48-hole spiral, except that 48 radii, cutting the circumference of the disc into 48 equal arcs, must be provided. This is easily

If Holes Are "Off," Dark or Light Streaks Will Mar Reproduction of Image.—Directions Given for Construction of 24 and 48-Hole Combination

BY CHARLES NEWTON KRAUS
(President, Brown University Radio
Club.)

Having described in our last article BY CHARLES NEWTON KRAUS

Having described in our last article the functions of the neon tube, we now turn our attention to the scan-

rolved by a motor. In order to bring the picture "in phase," the disc must be revolving in perfect synchronism with the disc of the broadcasting station. Its holes must correspond exactly with the holes in the broadcasting disc.

Some television transmitting stations now on the air use 24-hole discs. Others use 48-hole discs.

In consequence, the writer has a combination disc, perforated with two

combination disc. perforated with two spirals, one of 24 holes and the other

When reception from a station with a 24-hole disc is desired, the neon tube s placed so that its glowing plate, or electrode, is immediately behind the 24-hole spiral. This means bringing the neon tube toward the centre of the disc, which is shown in the accompanying illustration. Hole No. 1 is even

nying illustration. Hole No. 1 is even with the top of the glowing plate and hole No. 24 is even with the bottom.

Electrode Appears.

The disc is then placed in operation. As it gathers speed the holes have the effect of merging in front of the glowing electrode of the neon tube. Interesting spaces disappear just as do tervening spaces disappear, just as do the spokes of an automobile wheel revolving at high speed.

Soon the spectator sees the 11/2-inch glowing plate in its entirety. And, if the disc is revolving in perfect unison with the transmitting disc, he sees the image that is being transmitted. How clear and sharp and distinguishable it is depends, for one thing, upon the ac-curacy with which the spiral of 24 holes

This is true of the 48-hole spiral, shown near the circumference of the disc pictured in the accompanying il-

48-hole reception is desired, the neon tube is placed so its glowing plate is directly back of the 48-hole spiral. Hole No. 1a is even with the top of the plate. Hole No. 48a is even with

MISS EVA MOTT

286 Broad Street, Providence, R. I. won the ATWATER KENT RADIO On display at Kingston Fair

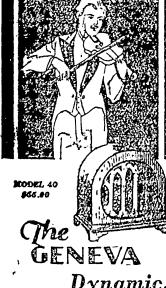
Main Radio and Jewelry Co. WAKEFIELD, R. I.

CARL A. KELLERMAN

RADIO-TRICIAN HURON ST. OAKLAND BEACH Warwick Neck 303-W

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Authorized Radinia Bervice re They KNOW the Neutrodyne R-A-D-I-O Exclusively 94 DORRANCE STREET Opp Narragansett Hotel



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Operadio satisfies every musical and artistic requirement-a speaker to better any set-with wide range of price from \$15 to \$275.

The beautiful Geneva Dynamic Speaker illustrated here offers emezing volume, pure, undistorted-rich as the tones of a rare eld violin. Be sure to hear the Operadio before you buy!



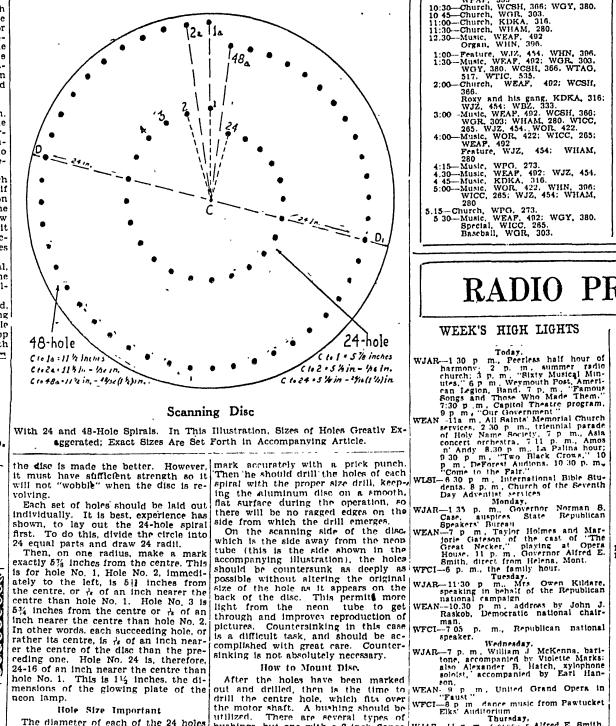
FRANKLIN Auto Supply Co. BROAD AND STEWART STS.

Phone Gaspee 3474 DISTRIBUTORS FOR OPERADIO SPEAKERS

Sheet Aluminum Used

smaller spiral to the circumference, and bisecting the 24 equal arcs they form by means of compass or dividers.

Hole No. 1a is exactly 11½ inches from the centre of the disc. Hole No. 2a. immediately to the left, is 11 15-32 inches from the centre, or 1-32 of an inch nearer the centre than Hole No.



The diameter of each of the 24 holes is important. When the disc is whirling, if the holes are not of the same their circumferences will either overlap or fall to touch. If they overlap, light streaks will be reen in the picture. If they fall to touch, dark streaks will requit.

As, when the disc is revolving at proper speed, the holes give the effect of lying one above the other, it nator fall to touch. If they overlap, light

of lying one above the other, it nator lying one above the other. It hat operation and speed control, will be urally follows that there will be 24 discussed in a later article. Also will layers of them in the 1½-inch aperbe discussed the use of square holes, ture through which the tube plate is rather than round holes, in the scanseen. Therefore, the 1½ inches should ning disc.

Radio Questions and Answers

Radio Editor, Sunday Journal: I have seen an advertisement of a

\$4.50. Is this a practical change to make on a charger and would it cheaper than buying a regular trickle

Providence.

(Yes, the rectifier is made by several different companies. Buy it from a reliable dealer to whom you can go for attention if you have trouble in makng it work. The initial cost would be only half to a third that of a trickle charger, unless, of course, you can sell your present charger for a suitable price. The ready-made low rate charger s to be recommended in preference to the addition of a dry rectifier to your present charger .- Ed.)

Radio Editor, Sunday Journal: Kindly explain what is meant by the

erm "neon lamp" used in connection with television T. C. C. Providence.

(The neon lamp was described in deail in the Sunday Journal of Sept. 9. It is a glass bulb containing two metal plates, or electrodes, their surfaces parallel and very close together. The bulb is evacuated and then neon gas is introduced. This will pass current elec-

tricity, causing the gas to glow brightly. The slightest variation in the strength of the current causes an immediate change in the brightness of the

The same procedure is followed in accomplished by continuing the 24 radii necessary in the laying out of the maller spiral to the circumference, and

be divided by 24. The quotient is he of an inch, or the proper diameter of each of the 24 holes.

Determining Hole Size

Sheet Aluminum Used Each succeeding hole is 1-32 of an In the making of the scanning disc. inch nearer the centre than the prenow turn our attention to the scanning disc, another important item in
the first step is to procure a piece of
the scanning disc, as has been pointthe scanning disc, as has been pointthe scanning disc, as has been pointthe first step is to procure a piece of
ceding one. Hole No. 48a, therefore, is
the scanning disc, as has been pointfeet square and 1-16 of an inch thick.
A circle exactly 2 feet in diameter must
was the case in the 24-hole spiral, prothere has a motor. In order to bring he cut from the

Hole Size Important

size or if they are inaccurately drilled,

in brilliancy necessary for reproduction of the "televised" image.—Ed.)

Radio Editor, Sunday Journal: Radio Editor, Sunuay Journal.

Please state the difference between the dynamic and the ordinary loudspeaker.

H. N.

operation and speed control, will be

drill the centre hole, which fits over the motor shaft. A bushing should be

There are several types of

bushings, but one with a 2-inch flange with a 2-inc

speaker. H. N.
Providence.
(The dynamic speaker uses a unit of different design. The fine wire winding is actually fastened to the vibrating unit which replaces the vibrator or bulb surface—cone or other type—and the nets. In the ordinary unit, the fine wire coll is wound over the ends of the magnets and a light armature of from is caused to vibrate by the magnetic distance. netic fluctuations. This armature is pinned by a driving rod to the vibrating surface. The dynamic speaker is better fitted to handle high volume than the ordinary type.-Ed.)

> THEY cost so little and save so much -classified ads.

RADIO SHOW

Exhibition to Be Staged Here Oct. 16

to 19 Inclusive.

Announcement that the Second Annual Rhode Island Radio Show would be held in the Elks' Auditorium in Providence, Oct. 16, 17, 18 and 19 has been made by Sheldon Fairbanks of Boston, who promoted the exhibition

here last year.

The majority of local radio establishments has already reserved exhibit space for the show, at which radio equipment of the latest designs will be

In addition to the radio sets that will be exhibited, there will be enter-tainment features of interest to radio fans, Mr. Fairbanks said. The program

ASK ABOUT the special price dis lamp. Thus, the lamp is a most rapid ASK ABOUT the special price device for producing the quick changes count on telephone classified ads.

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 station de-note wave length.

The hours are based on Eastern daylight saving time.

LOCAL STATIONS. 11:00 -- Church, WEAN, 275 1 30-- Music, WJAR, 484 2 00 -Church, WJAR, 484. 2 30--Parade, WEAN, 275.

3.00 -Concert, WJAR, 484. 5.55 - Weather, WJAR, 484. 6 00-Band, WJAR, 484. 6.30-Lecture, WLSI, 248.

7:00-Music, WJAR, 484 Music, WEAN, 275. 7.11-Feature, WEAN, 275. 7.20-Feature, WEAN, 275. 7.30—Correct time, WEAN, 275. Concert, WJAR, 484.

7.31-Music, WEAN, 275. 8 00-Church, WLSI, 248. 8 30--Music, WEAN, 275. 9 00-Talk, WJAR, 484.

9 15-- News, WJAR, 484. 9 30-- Feature, WEAN, 275, 10.00-Music, WEAN, 275, 10 30-Music, WEAN, 275, 11:00-News, WEAN, 275,

EASTERN STATIONS 9:00—Children's hour, WJZ, 454; WPAP, 353
10:30—Church, WCSH, 366; WGY, 380.
10:45—Church, WGR, 303.
11:00—Church, KDKA, 316.
11:30—Church, WHAM, 280.
12:30—Music, WEAP, 492
Organ, WHN, 396.

1:00--Feature, W.I.Z. 454. WHN, 396. 1:30--Music, WEAF, 402; WGR, 303. WGY, 380. WCSH, 366. WTAG, 517. WTIC, 535. 2:00-Church, WEAF, 402; WCSH,

2:00 - Gnirel, WEAF, 402, WCSH, 366.
Roxy and his gang, KDKA, 316; WJZ, 454; WBZ, 333.
3:00 - Music, WEAF, 402, WCSH, 366; WGR, 303; WHAM, 280, WICC, 265, WJZ, 454, WOR, 422.
4:00 - Music, WOR, 422; WICC, 265; WEAF, 402
Frature, WJZ, 454; WHAM, 280

280
4:15—Music, WPG, 273.
4:30—Music, WEAP, 402: WJZ, 454.
4 45—Music, KDKA, 316.
5:00—Music, WOR, 422. WHN, 306: WICC, 265: WJZ, 454: WHAM, 280
15-Church, WPG, 273.
5 30—Music, WEAP, 402: WGY, 380.
Special, WICC, 265.
Baseball, WGR, 303.

WEEK'S HIGH LIGHTS

WFCI-8 p m dance music from Pawtucket
Elks' Auditorium
Thursday,
WJAR-11 p m. Coverner Alfred E. Smith,

music.

Friday.

WJAR-8-30 p m. talk by Mrs John H.

Wells, chairman, International Institute of Y. W. C. A. 9.35 p m.

program by Claude L. Weitz, baritone

WEAN-801 p m., program of Hawaiian WPCI-6pm. the family hour.
WLSI-8.40 p. m., J. Lee Murphy, first radio
playwright.
Saturday

playwright.

Saturday.

WJAR-8-55 p. m. talk by Mrs. Philip II.
Carey, recretary, Rhode Island Association for the Blind

WEAN-8-01 p. m. -WNAC Players, in "The
Heart Cry."

WFCI-2 p. m., the Virginian troubadours.

WJAR-THE OUTLET COMPANY-184

RADIO PROGRAMS

6:00—Band, WEAP, 492: WGR, 303; WTAG, 517; WGY, 380, WPI, 405: WCSH, 366: WTIC, 535, Music, WJZ, 454, WICC, 265. 6:30—Music, WJZ, 454; KDKA, 316; WBAL, 286; WBAL, 333.

7.00—Music, WEAF, 402; WGY, 380; WICC, 285, WTIC, 535, WBAL, 288, WTAG, 517, WFI, 405; WGR, 303, WJZ, 454.

7.15-Music, WJZ, 454, WBAL, 286, Church, WIP, 349. 7.30-Music, WJZ, 454: WOR, 422. Church, WFI, 405. Capitol Theatre program, WEAF, 492: WGY, 380: WTIC, Baseball, WTAG, 517.

7 35-Music, WTAG, 517. 7.45-Church, WGR, 303. 8:00—Church, WHAP, 236. WICC, 265; WTAG, 517; WOR, 422. Feature, WHAM, 280, WJZ,

454.

8:15—Music, KDKA, 316, WBZ, 333, WJZ, 454.
Reader, WHAP, 236.

8:30—Music, WICC, 265.
8:45—Music, WHAM, 280.
Speaker, WHAP, 236.
9:00—Talk, WGR, 303, WTAG, 517; WEAF, 492, WTIC, 535, WGY, 380, WCSH, 366, Music, WICC, 265.
Feature, WGR, 422, News, WPG, 273.

Music, WICC, 205.
Feature, WOR, 422.
News, WPG, 273.
9.10-Music, WPG, 273.
9.15-Music, KDKA, 316; WHAM, 380, WBZ, 333; WJZ, 454; Atwater Kent hour, WGR, 303; WGY, 380; WEAP, 492.
Speaker, WHAP, 230.
9:30--Music, WICC, 265.
9:45--Music, WHAM, 280; WEAP, 492; WGY, 280; WGR, 303.
10:00-Music, WHAM, 280; WGR, 422; WGC, 265; WGBS, 349; WHAM, 280.
10:15--Music, WJZ, 454; WGBS, 349; WHAM, 280.
10:30--Music, WICC, 265.
Feature, WGR, 422.
10:45--Music, WIAM, 280.
11:00--Orchestra, WHN, 396.

DISTANT STATIONS DISTANT STATIONS
9 00—Church, WSAI, 361.
10:30—Sunday school, WLW, 428;
WBB, 476
11:30—Church, WGHP, 277.
11:45—Church, WCCO, 405. WMAQ,
448.
11:50—Church, WLW, 428.
11:50—Church, WBAI, 361: WSB, 476.
12:45—Church, WGHP, 277. WOC,
375

375 12.50 -Church, WCCO, 405.

Monday

6.55 pm —Providence Journal and Evening Bulletin news flashes.
7.00 p. m —Mu'ual savings bank hour—National Broadcasting Company fea-

program, Congressman Gunton
speaker.

8.30 p. m.-A. & P. Gypsies—National
Broadcasting Company feature.

9.30 p. m. General Motors family party—
National Broadcasting Company fea-

10 00 p. m.—Correct time.
10 00 p. m.—Providence Journal and Evening Bulletin news flashes.
10 05 p. m.—Baseball scores.

National Broadcasting Company tea-ture.

a m Republican national campaign program National Broadcasting Com-pany feature. Mrs. Owen Kildare. speaker.

p. m.—Providence Journal and Eve-ning Bulletin news flashes.

p. m.—Studio program.

p. m.—Weather report

p. m.—Continuation of studio pro-gram

1 30 p. m. - Continuation of studio program
6 45 p m Providence Journal and Evening Bulletin news flashes
6 50 p m Passeball scores
7.00 p m Voters' revice program, sponsored by the National League of Women Voters- National Broadcasting Company feature
7.30 p m - Soconyland sketches - National Broadcasting Company feature
8 00 p m Safety talk, sponsored by the Providence Safety Council.
8 05 p. m Musical program.
8 00 p m Selerling singers- National Broadcasting Company feature.
9 00 p m Eveready hour National Broadcasting Company feature.
10 00 p m Cilequot Club Eskimos National Broadcasting Company feature.
10 30 p. m Correct time Wednesday

1:30-Music, WSAI, 361; WSM, 337. 2.00—Church, KFI, 469; KNX, 336; KOA, 326; WOC, 375; WBAI,

Music, WMAQ, 448; KYW, 526. 3:00—Music, WGHP, 277; WSB, 476; KOA, 326, WSAI, 361; WOC, 375, WMAQ, 448, Church, KFI, 489; KGO, 384.

3:30—Band, WLW, 428. 4:00—Music, KOA, 326; WBAI, 361. Peature, KYW, 526; WLW, 428. 4:30—Music, KOA, 326; WBAI, 361. 5.00—Music, KNX, 336, KYW, 526; WLW, 428; KBTP, 220. Church, KNX, 338.

5:30-Music, WSAI, 361; KGO, 384 6:00-Music, WLW, 428; WSAI, 361. Church, WSB, 476.

5:30—Music, WSAI, 361; KGO, 384.
6:00—Music, WLW, 428; WSAI, 361.
Church, WSB, 476.
6:10—Church, WCCO, 405.
6:30—Music, WLW, 428; KYW, 526.
6:45—Music, WMAQ, 448.
7:00—Music, KYW, 526; KNX, 336;
WLW, 428; KGO, 384.
7:30—Organ—KYW, 526.
Angliothheater program, WSB, 476, WSM, 337.
Peature, WLW, 428, Music, KGO, 384; KFI, 469;
WSAI, 301.
7:50—Orichestra, WMAQ, 448.
8:00—Music, WLW, 428; WSAI, 361.
Church, KYW, 526; WCCO, 405.
8:10—Music, KYW, 526; KOA, 326;
WLW, 428, WSAI, 361.
8:30—Talk—WMAQ, 448.
8:15—Sermonette, WSAI, 361.
8:45—Sermonette, WSAI, 361.
9:00—Talk, WSB, 476; WSM, 337; WSAI, 361; WCC, 375.
Music, WGHP, 277; PWX, 400; KSTP, 220; WMAQ, 448.
9:15—Music, KOA, 326; WSB, 476.
Atwater Kent hour, KGO, 384; WCCO, 405; WCC, 375; KFI, 469; WSAI, 361.
church, WLW, 428.
0:17—Talk, KYW, 526.
0:30—Music, KSTP, 220, PWX, 400.
Church, WCCO, 405; WCC, 375; WSAI, 361.
10:00—Music, KSTP, 220; PWX, 400.
Church, WSM, 337.
10:15—Music, WCCO, 405; WLW, 428; WSAI, 361.
10:00—Music, KSTP, 220; PWX, 400.
Church, WSM, 337.
10:15—Organ, WCCO, 405; WLW, 428; WSAI, 361.
10:00—Music, KSTP, 220; PWX, 400.
Church, WSM, 337.
10:15—Organ, WCCO, 405; WLW, 428; WSAI, 361.
11:00—Music, KNX, 336; WGHP, 277; KBTP, 220.
11:10—Organ, KSTP, 220.
12:10—Organ, KSTP, 220.
12:10—Orchestra, KFI, 469.

Weekly Radio Test 1-Can a condenser and a tube

be shielded as a unit or is it necessary to shield them separately?

2-Why is it necessary to use a very hot iron when solder-ing large surfaces of copper? 3-How much more charging

must a storage battery be given than it is expected to deliver on being used? 4-What are "neutrodons"? 5-What is the chief advantage of a toroidal or doughnut type of coil?

(Answers to questions will be found elsewhere in Radio Section.)

(Copyright, 1928.)

11:00 p. m.--Providence Journal and Evening Bulletin news flashes.
Thursday.

"Carry Me Back to Old Virginny:"
orchestra; "Bpring Song." Mendelasohn, tenor solo, "Mother Machree,"
Olcott; orchestra, "Berenade," Victor
Herbert; male quartet, "De Gospel
Train," Burleigh, bass solo, "Old
Black Joe." male quartet, "Requiem,"
Homer.

8 55 p. m.—Weather report.
6 00 p. —Weather report.
7.00 p. —Weather report.
7.00 p. — Weather Assional Broadcasting Company feature
7.00 p. — "Pamous Songs and Those Who
Made Them"—National Broadcasting
Company feature, 'Drink to Me
Onis With Thine Eyes." 'The Pretty
Creature, 'Storice-Wilson, 'Sally in Our
Alley," Carey-Spier, "Til Sall Upon
the Dog-Star," Purcell
7.30 p. m —Capitol Theatre program
0 00 p. — "Our Government," by David
Lawrence, editor of the United States
Daily—National Broadcasting Company feature
9.15 p. m.—Providence Journal and Evening Bulletin news flashes.

Monday 10 45 a. m — Musical program
11 13 a m — Radio household institute— National Broadcasting Company feature
10 3 p m — Providence Journal and Evening Bulletin news flashes.
1 10 p. m — Studio program.
1 30 p. m — Weather report.
1 35 p m — Governor Norman S. Cafe, auspices State G. O. P. Speakers 11:15

Bureau

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— National Broadcasting Company feature

1:03 p. m.—Providence Journal and Evening Bulletin news flashes.

1:10 p. m.—Studio program.

1:10 p. m.-Studio program. 1:30 p. m -- Weather report. 7.30 p. m.—Rhode Island historian.
7.40 p. m.—Baseball scores
7.43 p. m.—"The District Nurse," by Mary F. Gardner, director of the Providence District Nursing Association.
7.50 p. m.—Arthur Guilmette.
7.51 p. m.—Weather report
800 p. m.—Republican national campaign program, Congressman Simeon D. Fess, speaker. gram.

7.25 p. m.—Providence Journal and Evening Builetin news flashes.

7.30 p. m.—Coward comfort hour—National Broadcasting Company feature.

8 00 p. m.—Chiropractic Society of Rhode Island talk

8 05 p. m.—Baseball scores.

8 10 p. m.—Hawaiian Island Quintet.

8.50 p. m.—Rhode Island State Board of Public Roads talk

8:55 p. m.—Weather report.

9 00 p. m.—Republican national campaign

8:55 p. m --Weether report.

9:00 p. m --Republican national campaign program--National Broadcasting Company feature

9:30 p. m.--Major and Minor Boys--National Broadcasting Company feature.

10:00 p. m.--Broadcasting Company feature.

10:30 p. m.--Correct time

10:30 p. m.--Providence Journal and Evening Bulletin news flashes.

10:30 p. m.--Proyled of the flashes.

10:40 p. m.--Program to be announced.

11:00 p. m.--Democratic national campaign program: Address by Governor Alfred E. Smith, Democratic nominee for President, direct from Minneapolis--Italional Broadcasting Company feature.

Friday.

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.

10.45 a. m.—A&P bureau of home econom-

10.45 a. m.—-A&P burrau of home economics.

11:00 a. m.— Musical program.

11:15 a. m.—-Radio household institute—National Brondeasting Company feature.

1.05 p. m.—Providence Journal and Evening Bulletin news flashes.

1:10 p. m.—Studio program.

1:30 p. m.—-Continuation of studio program.

2 gram.

1.35 p. m.—Continuation of studio program.
7.25 p. m.—Providence Journal and Evening Bulletin news flashes.
7.30 p. m.—The Oh Boy detectives.
7.50 p. m.—Rhode Island dance band, direction of Samuel Silverman.
8.30 p. m.—Roseball scores.
8.35 p. m.—Roy Partington, tenor, accompanied by Violette Marks.
8 p. m.—'Serving Young Women," by Mrs. John II. Wells, chairman of the International Institute of the Y. W. C. A.

WJAR—THE OUTLET COMPANY—184

1:30 p m—Peerles half hour of harmony—National Broadcasting Company Feature (1970) and Providence Journal and Expense Star' from Tannhauser, Wagner; bart tone solo, "Love of Vesteryrar," Byeaks, "Frolic of the Coons" (1970) and Corbo, the Feature and Country, the Speaks, "Frolic of the Coons" (1970) and Corbo, the Feature and Country, the Speaks, "Frolic of the Coons" (1970) and Corbo, the Feature (1970) and Corbo, the Feat RICHARDON TRANSPORTER STATES TO A S. S. S. P. M. --Weather report.

9.00 p. m. --"An Evening in Paris," National Broadcasting Company feature.

9.30 p. m. -- Correct time.

9.30 p. m. -- Automobile Club of Rhode Is-9.30 p. m.—Automobile Club of Rhode Island talk.
9.35 p. m.—Musical program featuring Claude L. Weltz. baritone, accompanied by Miss Kjellman.
10:00 p. m.—Providence Journal and Evening Builletin news flashes.
10:05 p. m.—Baseball scores.

10.45 a. m.—Musical program. 11.15 a m.—Radio Household Institute— National Broadcasting Company fea-National Broadcasting Company feature

1.05 p. m.—Providence Journal and Evening Bulletin news flashes.

1:10 p. m.—Philip Casacelenda and his new Roseland Orchestra.

1:30 p. m.—Weather report.

1:35 p. m.—Philip Casacelenda and his new Roseland Orchestra.

8.45 p. m.—Providence Journal and Evening Bulletin news flashes.

8.50 p. m.—Baseball scores and weather report.

8.55 p. m.—"Lighting the Way." Mrs. Philip H Carry, secretary Rhode Island Association for the Blind.

9:00 p. m.—Variety hour, with Mildred.

Continued on Page Eight.

MOVIE FOLK WORRIED

Radio Pictures Cause Will Hays to Appeal to U. S.

It has been reported in Washington that because of the rapid development broadcasting of motion pictures into the homes, that Will H. Hays, President of the Motion Picture Producers and Distributors, had become apprehensive over the situation and had asked that the Federal Radio Commission go slow in assigning frequencies for this

Some confusion was caused by the further report that he was sending the "Governor of Maine" as his personal representative in the matter, observers of the commission wondering what that particular official could have to do with such a request.

When Will Hays was subsequently approached, he was silent with regard to the television phase of it, but said: "The Secretary of our associattion is Carl Milliken, who was formerly the Governor of Maine. He was in Washington a few days ago and made some phone.

inquiry there for some of our company members who have broadcasting sta-

The Walter W. Massie

16 Windsor Rd., Edgewood Telephone Broad 0507 MASSIE SERVICE "THE BIG ½"

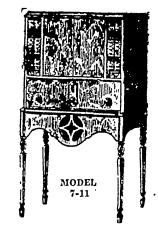
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We sell, service and repair all standard makes of radio apparatus.

OUR AD-TAKER is as handy as you

You Would Pay Nearly \$250 for the Radio Alone . . . **BUT LOOK!**



This All Electric Radiola 18 IN HANDSOME CABINET

BUILT: IN RADIOLA 100-A CONE SPEAKER

ORTHOPHONIC VICTROLA COMBINED ONLY \$250 ALTOGETHER

> And let us show you how easy you may pay for it.

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495 Westminster Street

O Peautiful / NEW-A.C.TUBE / Tomberg-Carlson The No. 636 Art Console,

THE same glorious tone, the same sensitivity, the same

Totally shielded. Has single tuning dial marked in wave length meters as well as divisional scale so that you merely need to know the wave length of a station and turn to that number on the dial. Dual circuit volume control. Phono-

Superb two-toned Cabinet with vertical panels in orange tone and top of matched Walnut butts.

UNITED MUSIC CO

233 Weybosset Street

selectivity for which all Stromberg-Carlson Receivers are famous

graph jack to facilitate electrical reproduction of records.

Come in and let us arrange a demonstration.

New England's Largest Stromberg-Carlson Dealer

RADIO PROGRAMS

Continued from Page Seven Hunt, soprano—National Broadcasting Company feature. 10:00 p. m.—Lucky Strike Orchestra—Na-tional Broadcasting Company feature.

11:00 p. m.—Providence Journal and Evening Bulletin news fiashes.

11:05 p. m.—Baseball scores.

WEAN-THE SHEPARD STORES-275 Today

Today

11:00 a. m.—Services of All Saints Memorial Church.

2:30 p. m.—Proceedings and ceremonies of the Holy Name Society's triennial parade, broadcast from Providence City Hail, Providence Biltmore Hotel, Cathedral of SS. Peter and Paul, State Armory and Dexter Training Ground.

7:00 p. m.—Asia Concert Orchestra.

7:11 p. m.—Amos 'n' Andy.

7:20 p. m.—Newscasting.

7:30 p. m.—Correct time. 7:30 p. m.—Correct time. 7:31 p. m.—Continuation of Asia Concert

7:30 p. m.—Correct time.
7:31 p. m.—Continuation of Asia Concert Orchestra.
8:30 p. m.—La Palina hour—Columbia Broadcasting System feature
9:20 p. m.—Moran and Mack, Maiestic's "Two Black Crows'—Columbia Broadcasting System feature.
10:00 p. m.—Deforest Audiens—Columbia Broadcasting System feature.
10:30 p. m.—'Come to the Fair'—Columbia Broadcasting System feature: Orchestra, "Trish Dance No 1." Ansell: mixed quartet, "Pretty Polly Oliver," arr. by Chaffin: orchestra, "Midsummer Night's Serenade," Albeniz: baritone solo, "Drinking Song," Wilson: orchestra, "Cuban Dance No. 1." Cervantes: mixed quartet, "In These Delightful Fleasant Groves," Purcell: orchestra, "Danse Slave," Chabrier: male quartet, "Old King Cole," Cecil Forsyth: orchestra, "March of the Tin Soldlers," Plerne: full ensemble, "Polovetzian Dance," Borodine
11:00 p m.—Providence Journal and Evening Bulletin news flashes.

Monday.

Monday.

9:45 a. m.—Women's institute conducted by June Abbot.
10:00 a. m.—Blue Monday gloom chasers.
10:30 a m.—"Good Groceries," Sally Sawyer.
a. m.—Musical program.
Time signals. a. m.—Time signals.
m.—Asia serenaders
p. m.—Providence Journal and Evening Bulletin news flashes.
p. m.—Official market reports of
Providence Bureau of Markets, Rhode
Island State Department of Agriculture.

Island State Department of Ingentium.

p. m.—Weather report.
p. m.—Weather report.
p. m.—Providence Journal and Evening Bulletin news flashes. p. m .- Port Arthur orchestra. p. m .- Taylor Holmes, Marjorie Gateson, appearing in "The Great Necker." Providence Opera House.

7:11 p. m.—Amos N Andy.
7:20 p. m.—Newscasting.
7:30 p. m.—Sportograms.
7:35 p. m.—Information service.
7:45 p. m.—Providence Community Fund speaker.
8:00 p. m.—Correct time.
8:01 p. m.—Ceco couriers, Columbia Broadcasting System feature.
8:30 p. m.—Melodies and memories.
9:00 p. m.—Lowney radio hour, Columbia Broadcasting System feature.
9:30 p. m.—Vitaphone jubilee hour, Columbia Broadcasting System feature.
10:00 p. m.—Democratic national committee.
10:00 p. m.—The captivators.
11:00 p. m.—The captivators.
11:00 p. m.—The rovidence Journal and Eventual captures.

Bailey Allen.

10:30 a. m.—Organ recital, broadcast from the Strand Theatre.

11:00 a. m.—Home Service Radio Chat.

11:55 a. m.—Time signals.

12:00 m.—Classical music program.

1:00 p. m.—Providence Journal and Evening Bulletin news flashes.

1:05 p. m.—Official Market Report of Providence Bureau of Markets, Rhode Island State Department of Agriculture.

land State Department of Agriculture.
4:00 p. m.—Musical program.
4:30 p. m.—Weather report.
6:00 p. m.—Providence Journal and Evening Bulletin news flashes.
6:05 p. m.—Army recruiting realities revealed.
6:15 p. m.—American broadcasting period, "America for Americans."
6:30 p. m.—Biltmore Hotel concert orchestra.
7:11 p. m.—"Amos 'N' Andy." tra.
7:11 p. m.—"Amos 'N' Andy."
7:20 p. m.—Newscasting.
7:30 p. m.—Sportograms.
7:35 p. m.—Information service.
7:45 p. m.—Providence Community Fund

speaker.

8 00 p. m.—Providence Community Fund
speaker.

8 00 p. m.—Correct time.

8 01 p. m.—Musical program.

8:30 p. m.—Republican national committee program—Columbia Broadcasting
System feature.

9.00 p. m.—The Music Room—Columbia 9:00 p. m.—The Music room—College Broadcasting System feature.
9:30 p. m.—Hank Simmons' show boat—Columbia Broadcasting System feature. ture.

10:30 p. m.—John J. Raskob, Democratic National Chairman.

11:00 p. m.—Providence Journal and Evening Bulletin news flashes.

Wednesday
9.45 a. m.—Women's Institute program,
conducted by June Abbott. conducted by June Abbott.

10:30 a. m.—Organ recital, broadcast from
the Strand Theatre.

11:00 a. m.—Colonial trio.
11:55 a, m.—Time signals.

12:00 m.—Classical music program.

THE RHODE ISLAND SHOPPING MECCA

CALLENDER M'AUSLAN & TROUP COMPANY

12:30 p. m.—Weather Report.
1:00 p. m.—Providence Journal and Evening Bulletin news flashes.
1:05 p. m.—Official Market Report of Providence Bureau of Markets, Rhode Island State Department of Agriculture. gram.

1:00 p. m.—Providence Journal and Evening Bulletin news flashes.

1:05 p. m.—Official market report of Providence Byreau of Markets, Rhode Island State Department of Agriculture.

land State Department of Agriculture.
4 '00 p. m.—Musical program.
4 30 p. m.—Weather report.
6 00 p. m.—Providence Journal and Evening Bulletin news flashes.
6 0.5 p. m.—"Uncle Red." auspices Providence Safety Council.
6 25 p. m.—Radio talk, Rhode Island Society of Optometry.
6 30 p. m.—Dinner dance.
7 11 p. m.—"Amos 'n' Andy."
7 20 p. m.—Continuation of dinner dance music. land State Department of Agriculture.
4:00 p. m.—Musical program.
4:30 p. m.—Weather report.
6:00 p. m.—Providence Journal and Evening Bulletin news fiashes.
6:05 p. m.—Asia Serenaders.
7:00 p. m.—Musical program.
7:20 p. m.—Newscasting.
7:30 p. m.—Sportograms.
7:35 p. m.—Information service.
7:45 p. m.—Providence Community Pund speaker.

speaker.
8 00 p. m.—Correct time.
8 01 p. m.—Nicholson Thackray
Sweet Home." 9.30 p. m.—Vitaphone jubilee hour, Columbia Broadcasting System feature.
10:00 p. m.—Democratic national committee.
10:30 p. m.—The captivators.
11:00 p. m.—Governor Alfred E. Smith, from Helena, Mont
12:00 p. m.—Providence Journal and Evening Bulletin news flashes.

Tuesday
9 45 a. m.—Women's Institute program, conducted by June Abbott.
10:00 a. m.—National Home-Makers, Ida Bailey Allen.
10:30 a. m.—Organ recital, broadcast from the Strand Theatre.
10:30 m.—Hence Sewite Parks Chair.
10:30 p. m.—Republican national a Broadcasting System feature.
10:00 p. m.—United Grand Opera in "Faust."
10:00 p. m.—United Military Band—Columbia Broadcasting System feature.
10:00 p. m.—Volted Military Band.
11:00 p. m.—Women's Institute program.
11:00 p. m.—Women's Institute program.
11:00 p. m.—Women's Institute program.
11:00 p. m.—Theorem of the Strand Theatre.
11:00 p. m.—Providence Journal and Evening System feature.
11:00 p. m.—United Grand Opera in "Faust."
11:00 p. m.—Volted Military Band—Columbia Broadcasting System feature.
10:00 p. m.—United Military Band—Columbia Broadcasting System feature.
10:00 p. m.—Kolster the Military Band—Columbia Broadcasting System feature.
10:00 p. m.—Wolted Military Band—Columbia Broadcasting System feature.
10:00 p. m.—Wolted Military Band—Columbia Broadcasting System feature.
10:00 p. m.—Wolted Military Band—Columbia Broadcasting System feature.
10:00 p. m.—Volted Military Band—Columbia Broadcasting System feature.
10:00 p. m.—Volted Military Band—Columbia Broadcasting System feature.
10:00 p. m.—Volted Military Band—Columbia Broadcasting System fea 8 01 p. m.—Kalua Hawalian Troupe.
8 30 p. m.—Republican national committee
program, through Columbia Broadcasting System.
9.00 p. m.—True Stories—Columbia Broadcasting System feature.
10 00 p. m.—United Choral Singers—Columbia Broadcasting System feature.
10.30 p. m.—United Salon Orchestra—Columbia Broadcasting System feature.
11:00 p. m.—Providence Journal and Evening Bulletin news flashes.
Saturday.

Thursday
"Thursday institute program,

ning Bulletin news masnes.

Thursday

9:45 a. m.—Women's institute program, conducted by June Abbott.

10 00 a. m.—Musical program.

11 00 a. m.—Home service radio chat.

11:53 a. m.—Time signals,

12:00 p. m.—Weather report.

1:00 p. m.—Providence Journal and Evening Bulletin news flashes.

1:05 p. m.—Official market report of Providence Bureau of Markets, Rhode Island State Department of Agriculture

4:00 p. m.—Columbia phonograph hour.

4:00 p. m.—Columbia phonograph hour.

6:00 p. m.—Providence Journal and Evening Bulletin news flashes.

6:05 p. m.—Dinner dance.

7:00 p. m.—Information service.

7:11 p. m.—Newscasting.

7:20 p. m.—Sportograms.

7:35 p. m.—Physical culture foot peppers, relayed from WNAC.

8:00 p. m.—Correct time.

8:01 p. m.—Musical program. 9 45 a. m.—Women's institute conducted by June Abbott.
10 00 a. m.—Children's assion.
11:00 a. m.—Musical program.
11:33 a. m.—Time signais.
12 00 m.—Port Arthur Orchestra. 12 00 m.—Port Arthur Orchestra.
1.00 p. m.—Providence Journal and Evening Bulletin news flashes.
1.05 p. m.—Weather report.
4.00 p. m.—Musical program.
4.30 p. m.—Providence Journal and Evening Bulletin news flashes.
1.05 p.m.—Providence Journal and Evening Bulletin news flashes. tra.

7 11 p. m — Amos 'n' Ondy.

7:20 p. m.— Continuation of Biltmore Hotel orchestra.

7:25 p. m.— Newscasting.

7:30 p. m.— Sportograms.

7:35 p. m.— Information service.

7:45 p. m.— Providence Community Fund speaker.

7 30 p. m.—Sportation
7 35 p. m.—Information
7 45 p. m.—Providence Commun.
8 00 p. m.—Correct time,
8 01 p. m.—WNAC Players, "The Heart |
Cry."
90 p. m.—Dance music broadcast from
102-on-the-Pawtuxet.
103-relation Eve 8 00 p. m.—Correct time.
8 01 p m.—Musical program.
9.00 p. m —United Light Opera Compan;
—Columbia Broadcasting System fea p. m.—The Buccaneers—Columbia Broadcasting System feature. p. m.—The Thirty-Minute Men—Co-10.00 Broadcasting System feature.

10:30 p. m—The Thirty-Minute Men—Columbia Broadcasting System feature.

11:00 p. m—Providence Journal and Evening Bulletin news flashes.

Friday

9:45 a. m—Women's institute program.

Cry."

9 00 p. m—Dance music broadcast from Rhodes-on-the-Pawtuxet.

10:00 p. m—Dance music broadcast from Rhodes-on-the-Pawtuxet.

10:00 p. m—Providence Journal and Evening Bulletin news flashes.

11:00 p. m—Providence Journal and Evening Bulletin news flashes.

11:00 p. m—Dance music broadcast from Rhodes-on-the-Pawtuxet.

10:00 p. m—Providence Journal and Evening Bulletin news flashes.

10:00 p. m—Providence Journal and Evening Bulletin news flashes.

10:00 p. m—Providence Journal and Evening Bulletin news flashes.

10:00 p. m—Providence Journal and Evening Bulletin news flashes.

10:00 p. m—Providence Journal and Evening Bulletin news flashes.

10:00 p. m—Providence Journal and Evening Bulletin news flashes.

10:00 p. m—Providence Journal and Evening Bulletin news flashes. m—Women's Institute program.

moucted by June Abbott.

m.—"American Homemakers," by

conducted by June Ab 10:00 a. m.—"American Ho Mrs. Ida S. Harrington. Silent.

Monday.

10.30 a. m.—Hints for home-makers by Cynthia Sage.

2.00 p. m.—Studio program.

6.00 p. m.—Baseball scores.

7.00 p. m.—Başeball scores.

7.05 p. m.—Pawtucket Furniture Company 10.30 a. m .- "Good Groceries," Sally Saw

10.30 a. m.—"Good Groceries," Sally Sawyer.
11:00 a. m.—Colonial Trio.
11:30 a. m.—Democratic national committee, from New York.
11:55 a. m.—Time signals.,
12:00 m.—Musical program.
12:30 p. m.—Weather report.
12:35 p. m.—Continuation of musical pro-ACCOUNT OF THE PROPERTY OF THE

Tuesday.

2 00 p. m.—Studio program.
6.00 p. m.—Al Thornton and his merry10 00 p. m.—French trio, with Charles Premmakers
7:00 p. m.—Baseball scores.
10 30 p. m.—"Pipe Dreams." 6.00 p. m—Al Thornton and his merry-makers
7.00 p. m.—Baseball scores.
7.05 p. m.—Republican national speaker.
7.20 p. m—The Hawalian serenaders.
7.50 p. m.—To be announced. Wednesday.

WFCI-FRANK CROOK, INC .-- 212

program.

. m.—Arabian Coffee Syrup feature.

Silent.

Saturday.

m.—Musical program.
m.—Biltmore Hotel concert orches-

Wednesday.

10:30 a. m.—Hints for home-makers by Cynthia Sage.

2:00 p. m.—Studio program.

6:00 p. m.—The family hour.

6:30 p. m.—Hoover minute man.

6:35 p. m.—Continuation of family hour.

7:00 p. m.—Baseball scores.

7:05 p. m.—Poultry feeding hints.

7:15 p. m.—J. A. Landry program.

7:25 p. m.—Eddle Pierce at the plano.

8:00 p. m.—Dance music direct from Pawtucket Elks Auditorium by Rhodes Islanders dance band. Islanders dance band.

Thursday. 2 00 p. m.—Studio program.
6 00 p. m.—The family hour.
6:30 p. m.—Hoover minute man.
6:35 p. m.—Continuation of family hour.
7 00 p. m.—Basebail scores.
7:05 p. m.—Republican national speaker.
7:20 p. m.—Exide hattery boys.

10 30 a. m — Hints for home-makers by Cynthia Bage. Cynthia Bage.

2:00 p. m.—Studio program.

6:00 p m.—The family hour.

6:30 p. m.—Hoover minute man.

7:00 p. m.—Gontinuation of family hour.

7:00 p. m.—Baseball scores.

7:05 p. m.—Merchants' musical feature.

Saturday.

2:00 p. m.—The Virginian troubadours.

6:00 p. m.—The family hour.

6:30 p. m.—Hoover minute man.

6:35 p. m.—Gontinuation of family hour.

7:00 p. m.—Baseball scores.

WLSI-THE LINCOLN STUDIOS, INC .. -248

Today. m -- International Bible Students' 8 00 p. m.—Services direct from Church of the Seventh Day Adventist.

Monday. Bilent.

Tuesday. Wednesday. . m.—Uncle Dave with the children. . m.—Market report. Thursday.

KDKA-PITTSBURGH-316 KDKA—PITTSBURGIA

a. m.—Correct time.
a. m.—Church services.
p. m.—Same as WJZ.
p. m.—Vespers.
p. m.—Same as WJZ.
p. m.—Collier hour.
p. m.—Choristers.

. m —Same as WJZ. . m.—Concert orchestra. . m —Same as WJZ.

WBZ-SPRINGFIELD-333 WCSH-PORTLAND-366

WEAF—NEW YORK—192

12 30 p. m—Sylvettre cozy hour.

1:30 p. m—To be announced.

2:00 p. m—Same as WJAR.

3:00 p. m—Same as WJAR.

4:00 p. m—Same as WJAR.

4:00 p. m—String orchestra.

5:30 p. m—String orchestra.

5:30 p. m—String orchestra.

6:00 p. m—Same as WJAR.

7:00 p. m—To be announced.

7:30 p. m—Same as WJAR.

9:00 p. m—Same as WJAR.

9:00 p. m—Same as WJAR.

9:00 p. m—Atwater Kent hour.

9:45 p. m—Correct time.

9:45 p. m—National light opera.

6 00 p. m.—Same as WJAR. 7 00 p. m.—Lehigh hour. 7.30 p. m.—Church services.

WGR-BUFFALO-303 10.45 a. m.—Westminster Presbyterian Church services.
12:00 m.—Correct time and weather re-

12:00 m.—Correct time and weather report.

1:30 p. m.—Peerless half hour.

3:00 p. m.—Same as WJAR.

5:45 p. m.—Baseball scores, news flashes.

6:00 p. m.—Same as WJAR.

7:00 p. m.—Lehigh hour.

7:45 p. m.—Central Presbyterian Church services

9:00 p m.—Same as WJAR.

9:15 p. m.—Same as WEAF.

9:15 p. m.—Atwater Kent audition for girls.

10:45 p. m.—Weather report, late news

WGY-SCHENECTADY-380 1:30 a. m.—First Baptist Church services.
1:30 p. m.—Musical program.
1:30 p. m.—Same as WEAP.
1:30 p. m.—Same as WJAR.
1:30 p. m.—Lehigh hour
1:30 p. m.—Same as WJAR.
1:30 p. m.—Same as WJAR.
1:30 p. m.—Same as WJAR. 9 15 p. m.—Same as WEAP. 9:45 p. m.—Correct time.

WHAM-ROCHESTER-280 WHAM—ROCHESTER—280

11:30 a. m.—Church services.
3:00 p. m.—Down melody Jane.
4:00 p. m.—Same as WJZ.
4:30 p. m.—Same as WJZ.
6:30 p. m.—Same as WJZ.
8:00 p. m.—Same as WJZ.
8:00 p. m.—Melodrama with in music.

8:45 p. m.—Music hour.
9:45 p. m.—Recital.
10:15 p. m.—Reinbow quartet.
10:45 p. m.—Organ recital.
11:05 p. m.—Weather report. with incidental

7 25 p. m - Newscasting.
7 25 p. m - Sportograms.
7 35 p. m - Information service.
7 35 p. m - Providence Community Fund
8 00 p.
8 15 p. WHAP-NEW YORK-236 p. m.—Sacred music.
p. m.—Christian Science reading from writings of Mary Baker Eddy, and

remarks. 8:45 p. m.—Sibyl Marvin House, speaker. 9:15 p. m.—James P. B. Hyndman, speake WHN-NEW YORK-306 12.30 p. m.—Organ recital.
1 00 p. m.—'Three Little Sachs,"
5 00 p. m.—Dance orchestra.
10 00 p. m.—American celebrity hour,
11.00 p. m.—Orchestra.

WICC-BRIDGEPORT-265 3.00 p. m — Same as WEAN.
4 00 p. m.—Same as WEAN,
5 00 p. m.—Dorothy O'Brien
5 30 p. m.—Mrs. Styles Northrop 6 00 p. m. - Etude school of music. 7 00 p. m. - Eric Peterson and his orches

tra.

8 00 p. m.—Sunshine girls.

8 30 p. m.—Stanley Broad and George Dana.

9 00 p. m.—Same as WEAN.

9 30 p. m.—Same as WEAN.

10.00 p. m.—Same as WEAN.

10.30 p. m.—Same as WEAN. WIP-PHILADELPHIA-319

7:15 p. m -- Holy Trinity Church services. WJZ-NEW YORK-131 a. m - Children's hour. p m - Program, direction Mary Dam

9 00 a, m — Children's hour. 1 00 p m — Program, direction rosch, 2 00 p, m — Roxy and his gang. 3 00 p, m — Continentals. 5 00 p. m.—Twilight reveries 6 00 p m.—String trio, with Frances Po-

perte.

p. m — Baseball scores.

p. m — Whittail Anglo-Persians.

p. m — Mariorie Horton and Cyril

Pitts, with string trio.

p. m — Sonata, Kathleen Slewart and

Herbert Borodkin.

8 00 p. m — Echoes of the Orient.

8:15 p. m.—Collier hour.

9:15 p. m.—River choristers.

9:45 p. m.—"El Tango Romantico."

10 00 p. m.—Correct time.

10 15 p. m.—Lew White, organ recital.

10 45 p. m—South Sea Islanders. WOR-NEWARK-122

3 00 p. m.—Americana, Part V.
4.00 p. m.—"Si Mark's." Venice.
7 30 p. m.—Emil Velazce, organist.
8:00 p. m.—Choir invisible.
9:00 p. m.—Market and Halsey Street Play-

WPAP-PALISADES-395 9.00 a. m .- Children's hour. WPG-ATLANTIC CITY-218 4:15 p m —Community vocal and instrumental recital.
5:15 p. m —Religious services.
9:00 p. m —News flashes and baseball scores.

9 10 p. m —Concert orchestra. 10 00 p. m.—Sunday evening musical. WTAG-WORCESTER-517 m.-Peerless half-hour. m-Same as WJAR 6 00 p. m — Same as WJAR.
7 00 p. m — Same as WJAR.
7 30 p. m.—Baseball scores
7 35 p. m.—Concert program.
8 00 p. m.—Sager hour of hospitality.
9 00 p. m.—Same as WJAR.
9.15 p. m.—News flashes.

WTIC-HARTFORD-535 1 30 p. m - Peerless half-hour. 6.00 p. m. - Same as WJAR.

"COLORING" PROGRAMS

Regulation of Lights in Home Reighten:

Musical Effects. The idea of using color to lend the proper atmosphere to a radio program is something which the average racloist has not given much, if any, other trouble in the neighborhood thought. In the theatre, lighting is in entertainment. It is only the ex-

cptional performer who is able to reg-

ister satisfactorily without the assist-

Yet the radio owner expects to obtain maximum enjoyment from a program with nothing but the unadorned It he would catch the spirit of the proadcast and arrange lighting effects in his own living room accordingly, surprising results could be achieved in the attainment of greater enjoyment. For certain types of music, especially that which typifies the spirit of gaiety, a well-lighted room is the logical arrangement, whereas sombre and more subdued music goes best, and actually

This suggestion may bring to the attention of the radioist the importance of giving thought to his own staging of the program. As yet this cannot be done over the ether, although that time is surely coming. Lacking television at present, the wise course is to stage one's own shows as one goes

Aerial Intelligence.

The type and location of an antenna to be erected depend largely upon the location of the receiver in the building and upon the space available in the vicinity. Two forms of outdoor antenna in popular use are the inverted 'L" and "T," which derive their names from the resemblance they bear to those letters. The inverted "L" is, perhaps, the more common of the two It consists of a horizontal wire with a vertical lead-in. This antenna is generally employed where it is convengenerally employed where it is conven-ient to run the antenna away from the building, the lead-in wire being attached at the end of the horizontal wire nearest the set. The "T" antenna consists of a similar horizontal wire with a vertical lead-in connected at the centre. This type is often employed where it is more convenient to suspend the antenna directly above the receiver. Ship antennas are often of this type. Either form of antenna will give about the same results, and the choice is

Audio Transformer Tests. To test an audio transformer, con-nect one terminal of a weak dry cell to one binding post of the primary of the transformer and fasten the two headphone tips to the other battery terminal and the remaining binding post of the transformer primary. If the primary is in working order, a sharp click will be heard in the phones or just a tiny click, is heard, the pri mary winding is broken. The second winding seldom gives trouble.

The Dial's Diary

By the Trouble-Shooter

I wonder how many radoists realize how much trouble I give them when I'm trying to solve some one fellow's worries. My guess is that very few people ever suspect that their troubles may be someone trying to solve some Sometimes it's just a neighbor tink-ering with his set and forgetting about Modulat the squeaks and howls he's sending out | er are as near naturalness as possible ver the immediate ether. Very often This, of course, is dependent on the over the immediate ether. Very often it's a professional trouble-shooter go-ing through some of the business of mitting station and the efficiency of the

ance of lighting effects which add to checking trouble for a customer.

Like a lot of other trouble-men, I order to test receivers when there are the no nearby stations on the air. Sometimes in order to check pecul:ar troubles, I may use this device in the afternoon or in the evening and the next door neighbor may think he is having trouble with his own equipment if he happens to be listening in. He gets a peculiar buzzing noise.

I had a good opportunity to check up on this recently. Went to a customer's house to work on the radio and commenced to pickup a lot of stray noises is improved so far as the listener is that sounded for all the world like some concerned, through the use of subdued unthinking radio operator making life miserable for the neighbors. "That's someone who doesn't know much about radio," I told him. "Who's

much about race,
your neighbor?"
"No use suspecting him," my cusreplied. "He's very considerate
of care of his receiver.

But, looking out the front window, I caught sight of the trouble wagon of a competing radio repair man. That supplied the answer. Someone was giving us trouble trying to find out the cause of their own worries.

This is apt to be the case where a radio owner goes trouble-hunting alone and where he makes a lot of experiments without any regard for the way it may be affecting other receivers in the vicinity.

ANSWERS TO RADIO TEST -If they are of the same stage they may be shielded as a unit and may also include the inductance. -Because the copper dissipates heat

so rapidly. 3-In practice, the percentage runs about 25.

-The neutralizing coils between r. i stages of a neutrodyne receiver.

-It confines stray flux lines because there are no free ends. A toroi-dal coll, in reality, is a sclenoid

bent into ring shape.

Cleaning Hydrometre After the hydrometre has been used several times to test a storage battery the glass barrel usually becomes clouded, due to particles in the acid, and further readings with the device become difficult because of the low visibility of the float. A simple way to clean the barrel is to purchase a six-ounce bottle of denatured alcohol, and after taking a reading with the hydro-metre to insert nozzle in the bottle and allow it to fill up. After the al-cohol has been squirted back into the bottle, the barrel of the metre will be found to be perfectly clear. The same alcohol can be used indefinitely.

This Has Important Effect on of Reproduction: The quality of a loud speaker is partly due to the proper location. rooms, as a rule, have poor acoustle properties. Speech or music ensuing from the reproducer is forced against the walls of the room at various angles and reflected back a fraction of a second later, not tardy enough to be noticed, but important enough to destroy the natural reproduction of the music

SPEAKER LOCATION

Modulated tones from the loud speak radio receiver employed. If the sounds from the speaker are obsorbed by the use a local, portable transmitter in walls of the room, instead of reflected quality of reproduction will be nearly perfect.

radio room with heavy curtains for obsorbing the sound, moving the reproducer to different points of the room may result in improved reproduction.
It should never be placed in an angle or corner of the room. This will tend to reflect the sound to the opposite side. giving more chance of echo. Smooth surface painted walls have been found to have undesirable reflect-

ing qualities. Papered or rough sur-faces will not cause the echo effect in readily as those whose are smooth. Most cone speakers are designed to radiate sound in all directions. For this reason it is desirable to place them from one to two feet from the adjacent wall. Loud speakers also should be mounted on objects which are not likely to resonate at a certain frequency or tone. Hollow pieces of furniture will some times contain an air chamber capable of resonating at a certain frequency, causing excessive amplification of the tone This results in blasting. Mounting the speaker base on some soft material such

as felt will help. Reproducers should not be placed atop of radio set cabinets. Not only will the cabinet tend to resonate at a certain frequency, but other troubles are frequently encountered. Mechani-cal vibrations may be set up in the tubes of the receiver due to the direct contact of the speaker with the cabinet.

These mechanical vibrations in the tubes when inaudible cause distortion gradually building up in volume a tremendous howl.

Battery Acid Destructive The liquid which bubbles out of a storage battery when it is on charge should not be allowed to come in contact with anything which is considered

OUR AUTO NUMBER FRAMES WILL BEAUTIFY YOUR CAR



J. M. BAKER PATTERN CO. 114 WEST EXCHANGE STREET, At end of Mathewson St., Prov., R. I



---AND NOW! B. & H. Supply Co., Inc. Puts On Their Own

Thursday-Friday and Saturday Evenings

of this week we will have on exhibition at our showrooms, 116 Mathewson Street, Providence, the newest and finest display of radio sets that has ever been shown in Rhode Island.

Factory Representatives from:— RADIOLA ATWATER KENT **MAJESTIC** KOLSTER

will be on hand to explain in detail the latest ideas and improvements incorporated in their new lines.

> Do not miss this opportunity to see and hear first hand all the LATEST STANDARD ALL ELECTRIC RADIOS AND SPEAKERS.

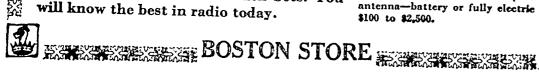
> > REMEMBER - - - -

Thursday-Friday and Saturday Evenings of This Week September 27-28 and 29th

B. & H. Supply Co., Inc.

116 Mathewson Street

Phones Gaspee 5550-1-2-3



VEN Zenith, always a center of interest

at the radio shows, has never known

done on Zenith Radio-all these years of

quality workmanship and radio experience

are behind the sets that are now presented

See and hear the New Zenith Sets. You

such enthusiasm as was awakened by the All-Electric embodied in a beauti-New Zenith Sets at the trade show this year. ful "Low-Boy" Console with open face. The cabinet is made of highly 15,000 radio manufacturers, dealers and figured walnut veneers in dull rub engineers were amazed at the quality, the finish, handsomely shaded, with attractive overlay. beauty and the new improvements that are All metal construction, fully embodied in the Zenith sets this year. They are the latest and finest creations of the world's largest manufacturer of high grade radio. As far back as 1915 the first work was

shielded and assembled with the skill and care that distinguish Zenith Quality workmanship. A cone speaker of advanced design and capacity is mounted behind the carved grille in the lower part of the cabinet. Price, less tubes-\$230. For battery operation, price, less tubes - \$180.

Your eyes and ears will vote Yes!

on this fine example of radio art

and science. It's a Zenith Six-Tube

30 Models-3 different circuits-6, 8 and 10 Tubes including DeLuxe Models-with or without loop or antenna-battery or fully electric

Thursday.

8 00 p. m — Market report.

8 10 p. m.—Twilight Hawaiian quintet.

8 20 p. m — WLSI Movie Club with Hawaiian quintet.

9:00 p. m.—Prot. Franklin N. Strickland.

Friday.

7 50 p. m.—Market report.

8:00 p. m.—Mrs. Marion Tetreau, astrologist. 8 20 p. m —Studio program.
8.40 p. m —J. Lee Murphy, first radio playwright.
Saturday.

WBAL-BALTIMORE-280

WEAF-NEW YORK-193

WFI-PHILADELPHIA-103 WGBS—NEW YORK—349 m.—Vocal quintet. m.—Sonia Greenov, folk songs. m.—Recital hour.

10:45 p. m.—Weather report, late news flashes.

means of communica-

tion.
"Wireless," in a form unknown to broadcasting companies, has existed in incarried in the stone age. The authority for this assertion is the Natal Mercury, a newspaper published in Mercury, a newspap purban, East Africa.

Says the Mercury: "The mysterious bush telegraph, by which the fall of ghartoum is said to have been known o the natives of Sierra Leone 2000 of the interest of Sterra Leone 2000 mles away, long before the cables had borne the news, is something more than a legend.
"One never catches a native village

by surprise. For years, it was a matter beyond explanation, but study of the drum language has solved the mys-"Most of us have heard of the fa-

"talking drums" of the Gold
Then there are the tree drums of Nigeria, a still more primitive form

\$1000

by Saving

\$5 a Month

="At the Bend in the Road"

Call personally for full particulars

OLD COLONY CO-OPERATIVE BANK

58 Weybosset Street-Providence

of communication. In every Nigerian chain are obliged to wear tuxedos while illage where one of the sacred drums on duty in the New York studios. The eposes before the chief's house, two "tucks" are supplied by the company, nen are seated listening. Sooner or later their trained cars pick up faint suits.

tap-tappings from the forest.
"Seizing his two sticks, the drummer repeats the tones of the distant drums, and the message is sent to the next village, perhaps 15 miles away. "No form of Morse signalling is em-

badge of office for the announcer, also are working clothes. If a plano must ployed. The fact must be accepted be shifted in a studio before the protection at mastery of must put his shoulder to the heavy the science of phonetics greater than piece of furniture. There's no time to the white man's. It is the sound of call a porter. the words, not the words themselves, If a dramatic soprano is overcome that the drums convey. His repertoire with emotion and must weep on a consistimited to certain stock phrases, but there are few situations that cannot be on the announcer's jacket that take up the surplus face powder—and the following day the "tuck" must go to

described by the talking drums.
"One interesting fact remains. The Asbanti word for the drums is 'ntum-jane.' The ancient Greeks called the drum 'tumpanon.' " **•** • •

For cleaning and pressing tuxedos

the purchase of semi-formal attire.

Here's why:

The Installment Plan

Folks buy a lot of things on the so-called

installment plan. Most of those things

naturally wear out. Not so with Old Colony

installment shares. Folks who take out

monthly payment BOOKS are actually buy-

ing financial independence on the install-

Thousands of your neighbors are doing

Why not follow their thrifty

Staff announcers of this particula

"Tother night I went DXing. I tuned in a mysterious station. I kept \$1000.

If bills were presented annually, that tuned in for 20 minutes, which emed an eternity, for I was awaiting announcer's voice. But the anwould be one received by one of the big radio networks that serves Rhode the announcer's voice. But the announcer gave his call letters not once. All I heard was 'Beautiful Isle of Some-Island and the other States. And there'd probably be another one from a clothier for a greater amount for

RADIO AIDS POLICE

One City Airendy Uses System to Talk With Officers

H. C. N. of Providence complains:

and each announcer must have two

suits. Upkeep of the tuxedos also is taken care of by the company and it's

an unusual dinner jacket that doesn't have to go to the cleaner once a week.

Commercial use of short waves is reaching a new level of utility, but one of the most serviceable uses of this type of transmission is that found in the radioized police fleet. It already

is a reality in one city. Police officers, in their cars, may be anywhere in or about the city, when a call is sent out to them from headquarters. Lights flash in the driving compartment of each one of the radioized cars the instant an alarm is recelved at headquarters. Immediately the officers of each car tune in to headquarters and take the message given them over the air.

The receivers are located in the rear deck of each car and are of the short the public by providing adequate space wave, fixed-tuned variety. That is, they in the ether." pick up only short waves and are fixed for the wave upon which the police department broadcasts its messages.

Robinson, Caldwell, Pickard Air Their Views

Next Few Years, Belief of One. Sykes Discusses Legal Aspects

With increased activities in the television field. Government radio experts. and especially members of the Federal Radio Commission, have evidenced the greatest interest in the subject.

"If you refer to the opportunity one interest to the public, perhaps not secondary to our present day radio sound transmission.

"I am hopeful that this form of tele-

Judge Ira E. Robinson, chairman of

the stage of public utility," said Judge Robinson, discussing the problem.

"Other than for experimental purposes," he continued, "the broadcasting band cannot be spared to it without detriment to the public. This is the

ence's most fascinating experiment. But the 'point-to-point' method now used seems to put definite limitations on

Pickard Enthusiastic.

Commissioner Sam Pickard, of Kansas, says that "after witnessing several television demonstrations, I am inclin-ed to believe that nothing can forestall the practical application of this mar-velous invention within the next few

"prove conclusively the feasibility of the methods in use at this time. However, perfection is not yet in sight In my opinion, it will require a few more years of hard work, study and experimenting before the con-

"In fact, I am not yet ready to say that in its perfected state it will have much, if any, commercial value. The public alone can determine this. If it proves to be of interest to the majority of radio listeners, then certainly it could be classed as being in the public interest. However, personally I see no immediate likelihood of television having any particular commercial value It is my opinion the interest now being



othing Can Forestall Practical

Certain to Arise

"Television is of course in the exerimental stage," said W. D. Terrell. thief of the Radio Division of the Department of Commerce, and one of the first radio men in the government ser-

has to see a picture of the party talking at the transmitting station, I can-not see that this presents anything of great interest to the public, but if you refer to the opportunity to receive by radio a reproduction of action, such as the speaker, including the surrounding crowd, sporting events, fires, automobile or train wrecks and things of that kind, I believe that this possesses great

vision will be available to the public within a few years and that those who administer the radio law will make provision for satisfactory reception for

Still Experimental.

the Radio Commission, along with the other members of the Commission, has witnessed television experiments and ing the course of the Commission's

work.
"Plainly, television has not reached

testimony of the leading radio engin-Commissioner O. H. Caldwell, of New York, said: "Television is today sci-

"For along present lines," said Mr. Caldwell further, "either definition must be relatively crude, or if a high efinement of image is secured, the frequency band necessary will be so wide-hundreds of kilocycles-that other channels enough cannot be spared for any number of simultaneous tele-vision broadcasts. Reflecting-layer images or 'ghosts' offer another difficul-ty in radio television. Unless, there-fore, some wholly new principle is dis-covered, it would appear that the real television of the future will be carried on over wires, relieveing that great common conductor, the ether, of this common conductor, the ether, of this latest and most exacting of its many

Harold A. LaFount, radio commissioner from Utah, is another member of the Commission who has expressed much interest in television.

"I am greatly interested in tele-vision," he said. "The different methods employed to produce the same result "Successful experiments and demon-

experimenting before the goal will be reached, and before it will have any material value.

manifest by the public is based on curiosity and interest in the develop



W.F.YOUNG, Inc., Springfield, Mass.

Judge E. O. Sykes, vice-chairman of

"With facsimile and television many new legal questions will arise," he con-tinued. "Will the courts hold, for in-

stance, that a check transmitted by facsimile over radio is a proper check

and should be paid by the bank?
"Suppose that television is so perfected within the next few months

or years that one will not only be able to hear an opera, but also to see it.

"A very interesting legal question will be presented as to whether or not a

witness may be permitted to testify

action seen by him over the radio.

Interesting Question.

"Suppose the broadcaster in Texas,

instead of seeing the shooting affray through the window, had seen it on

his radio by means of television, would

he be accepted as a competent witness to testify against one of those parties in a criminal prosecution?

"The courts now hold that a witness

can testify to a telephonic conversa-tion when he can identify the voice

of the other man on the 'phone. Photographs may be introduced in testimony

after the photographer has testified that they are a true reproduction of

the place in question.
"These facts are mentioned to show

what interesting questions may be pre-

sented to the courts through develop-ment of television and facsimile trans-

The Paper Condenser.

The paper condenser literally is nothing more than two strips of tin-

foil separated by several thicknesses of paper, rolled tightly together, soaked

with wax and pressed flat and hard. A tiny speck of metal imbedded in the paper during the paper-making process, a trace of moisture due to dampness

of the air at the time of winding, the slight perspiration from the fingers of the operator on a warm day, a wrinkle

in the tinfoil, a tear in the long paper strip—these and many other scemingly

Week-End Motor Tours

Gorgeous Autumn Foliage

PERSONALLY CONDUCTED TOURS

To Mohawk Trail—Housatomic Valley— White Mis.—Bennington, Vt.—Cape Cod Canal—Picturesque Provincetown and Plannarth

Pijmouth.

Special tour over Columbus Day Weckend. Storm King Highway-Bear Mt.
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Mass.-New London, Conn., via Shore
line and returning Norwich, Conn.

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14th Beason Comfortable Peerless Sedan

JOHNSON TOURS

147 Warrington St., Prov., R. I. Tel. Broad 5032

slight flaws may spell a poor condenser, which, while it may get by the "flash test," will soon break down in actual ment of the art, rather than upon a real need for the service." Legal Phases Discussed

the commission, has some interesting Separate Rheostats. thoughts on the legal side of tele-If a receiver is built employing radio vision.

"Recently we saw in the papers,"
said Judge Sykes, "where a broadcaster
on looking out of the window of his requency the filament of each radiorequency tube should be controlled by eparate rheostats. When the radio-requency tubes and the detector tubes studio saw a difficulty in progress be-tween two men, in which one of them was shooting at the other with a revolver. He at once stopped his regular program and broadcast to his listeners

control all three tubes the grid base is controlled by the position of the arm on the rheostat. When the bias is on the rheostat. When the blue is used for the detector it may not be correct for the radio-frequency. The audio-frequency tubes are not critical to filament adjustment and may be

In Quest of DX. of the tubes may be getting too much current for the maximum efficiency, while the other tubes may be working at their best. The detector tube re- they can usually be given increased pre- 5037.

In Quest of DX.

Employ phones to locate distant sta- ond Decennial Ed. Am. Digest; also other sets and text books. Call Gas-

quires a grid return to the A plus. The amplifiers require an A minus connection. When one rheostat is used to ume and tuning controls. Many loud-speaker, by manipulating the vot-ume and tuning controls. Many dis-tant stations too feeble to actuate the loud-speaker can be heard with the

> LAW BOOKS FOR SALE

Massachusetts, New York, C. C. A. and United States Reports; First and Sec-

Be Paint-Thrifty!

RESSING up your home in the Fall with Paint and Varnish is a natural expression of self respect and the human desire to surround one's life with beauty and comfort.

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PAINT is an essential protection for all exposed surfaces in your home. Wear and decay are incessantly at the business of deterioration and destruction. Good paint wards them off, securing your investment, lengthening the life of your property and adding materially to its present value.

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A Hundred Helps in Decorating the Home

for daily cheer or special occasions, invour

ART DEPARTMENT

Shades, etc., with the expert advice and assistance of a skilled

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95-99 EMPIRE STREET



Take a Little Walk Along "Real Estate Street"

If all the properties of any kind that are for sale or rent in this city were gathered together on one street-we'd advise you to take a stroll out that way.

But since they're not, we suggest that you do the next best thing-and take a trip through the Real Estate Group in today's Classified Sec-

There you'll find the most attractive homes, business places, apartments and other properties that are on the market this season-all lined up and awaiting your inspection.

The offers of each kind are gathered together in separate classifications-and alphabetically listed for your greatest convenience.

Turn to the Real Estate Ads today!

Commander Byrd

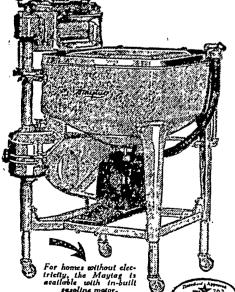
Chooses MAYTAGS for South Pole Expedition of supplies, material and equipment.

NE of the many distinguished honors that have come to the Maytag Aluminum Washer is the selection of Maytags for the Byrd South

Not only the success of this great ioneering adventure, but the lives of the men, depend on the proper selection

are observed in deciding what equipment shall be used. The many outtag world leadership, enabled it to meet the exacting standards demanded by

A Fitting Tribute to the New Maytag on its First Anniversary The noteworthy tribute of being selected for



Phone for a Maytag before next washday. You will discover, as did Commander Byrd, that the Maytag is supreme. If it doesn't sell itself, don't keep it.

use passed the million mark.

MAYTAG RADIO PROGRAMS

the Byrd Expedition comes to the New Maytag as it is celebrating its first anniversary—the end of the most remarkable year in Maytag history -a year in which the number of Maytags in

A FREE Trial Washing

Therefore, the most rigid requirements

WHT, Chicago, Tues., Wed., Thur., Fri., Sat., 9-00 P. M. Chicago Daylight Saving Time. KEX, Portland, Ore., Tues., 8:30 P. M. Pacific Standard Time. KDKA, Pittsburgh, Wed., 10:00 P. M. Eastern Daylight Time. CFCA, Toronto, Can., Tues., 7:30 P. M. Eastern Standard Time. WBZ, Boston, Fri., 7:30 P. M. Eastern Standard Time. WCCO, Minneapolis, Fri., 8:30 P. M. Central Standard Time.

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The F. Hallock Co.

Maylag Aluminum Washer

HOW TO GO ABOUT "TUNING UP" RADIO

Like Automobile, Receiver Can Be Given Additional "Pep"

A and B Batteries or Power Unit Should Be Tested to See They Are in Pink of Condition .- New Tubes Should Be Substituted for

Your radio set, like your automobile can be "tuned up" once in a while for greater enjoyment. And here is how you should go about this "tuning up"

ies, if the set still happens to be operating on batteries. We should examine the A battery. If of the dry-cell type, we should measure the voltage of each cell, which should be 1.1 volts at the very least, and preferably much higher. When dry cells become old through long use, they become noisy as

well as low in voltage.

In the case of the storage battery, we should make sure that the cells are in good condition. The voltage should read not less than 1.8 for a fully-charged cell, and 2.2 for a fully-charged cell, and 2.2 for a fully-charged cell. cell. If the voltage drops below 1.8 and does not pull up even after a charge, that cell is about through. If the battery is still in fair condition, the cell may be rebuilt. Otherwise, a new battery is in order. Of course, the battery should be kept filled with dis-

The next step is to look at the B batteries. These should be discarded when they reach 39 volts, although some au-

should be replaced at least once a year. Water should be placed in wet units to

stunt is to purchase a new tube of each type employed in the receiver and then compare the old tubes with the new tubes, replacing those which are "low."

The old tubes can probably be reactivated for additional service, if of the vated for additional service, if of the battery should be tested before anythoriated tungsten filament variety. It is also a good stunt, occasionally, to disconnect the minus B wire, and then Bolts Paralyza disconnect the minus B wire, and then burn the filaments at a slightly increased voltage for an hour or so, as a by near-by lightning bolts are likely to paralyze the tubes, which will never be helps out quite a bit.

The antenna and ground should be

looked over for improvement. Is the antenna as long as it might be? Is it free of surrounding objects, such as foliage of trees, walls, steel structures, etc.? How about the ground? Is it clean? Is it made to a really good "ground?" Antenna wire of the bare variety becomes corroded in due course. which causes high resistance for the

Vagrant Waves of Interest to Fans

Be sure to apply the proper C voltage or grid bias on power tubes, not only for good tone quality and minimum plate voltage, but also to insure long

Don't use oil to lubricate condenser bearings. Easy operation is a matter of bearing adjustment only.

Mexico has about 20 radio stations.

More women than men buy radio sets n retail stores of New York city.

The radio vote in the presidential campaign is coming to be known as the silent vote.

Roumania's first broadcasting station is to be erected this year at Bucharest. The transmitter will broadcast on any wave length between 200 and 545 metres. The station will have a power

Aviation experts in France are at work perfecting better radio apparatus for use on airplanes. A new outfit weighing 85 pounds is being tried out by the Government's aeronautic serv-

A closet hook of the flapping wing style is a convenient rest for the sol-dering iron.

Good transformers, with proper tubes and ample power, will give not only equal, but better, tone quality, and with far more power in addition.

When the elements of the tube are not firmly held in place, it becomes microphonic. This condition is due to vibration. The noises can be prevented by sponge rubber mountings, anti-howl caps and other devices.

With the aid of receiving sets, fishteries are noisy.

In the case of radio power units, one should be sure that they are kept in the pink of condition. Rectifier tubes to spend many weeks each year on the fishing banks, their only communication with the world being the occamake up for evaporation.

The tubes should be tested. In the sional speaking of a passenger vessel absence of an emission metre the best or the arrival of a vessel from home.

Why Poor Tone Quality.

Bolts Paralyze Tubes.

the same after such an experience, even

Life of Tubes The average life of a vacuum tube is about 1000 hours. Tubes will give just so many hours of service, no matter whether they are used five hours a day or two hours a day.

Plug in Power Last In setting up electric sets for opera-tion, be careful to plug in the power

last and see that the low amperage fuse is in place in the power unit before lighting the tubes.



Buses have to operate on schedule and we make sure of dependable service by using Champion Spark Plugs.

Champion is the better spark plug because it has an exclusive sillimanite insulator specially treated to withstand the much higher temperatures of the modern high-compression engine. Also a new patented solid copper gasket-scal that remains absolutely gas-tight under high compression. Special analysis electrodes which assure a fixed spark-gap under

all driving conditions. Spark Plugs

Toledo, Ohio Dependable for Every Engine

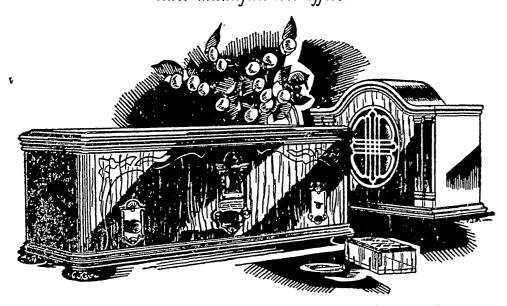
THE**Brunswick**

On Sale in Our Talking Machine Store Third Floor

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in Music...

More to choose from on Brunswick than any other manufacturer offers!



 $P^{\text{RUN'SWICK}}$ this year offers Radio built to the same high musical standards as the Brunswick Panatrope. Just as the Brunswick Panatrope by its marvelously natural tone, set a new standard in recorded music, so Brunswick Radio changes all present conceptions of how beautiful broadcast music can be. Tone is natural beyond comparison. Bass and high notes are in their exact natural relation. Cabinets are of the fine design and workmanship for which Brunswick is noted. Instruments have the latest convenience features: light socket operation, simplified tuning, etc.

Before you buy anything in either radio or record-music this year, see and hear Brunswick's new achievements. Prices from \$25 to \$995.



Above-Brunswick Super-heter-odyne, Model 5NO. This 9-tube set embodies the latest technical developments in the entire radio field. Used in conjunction with the electro-magnetic type Brunswick Speaker shown above, it gives you a quality of tone that will amaze you by its beauty. Complete light socket operation. One dial tuning. Price \$175, less tubes. Bruns-wick Model "A" Speaker \$35.



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FULL LINE OF BRUNSWICK RADIOS AND VICTROLAS

PRUEFER PIANO CO.

559 WESTMINSTER ST. Cathedral Sq.

THE NEW STUDEBAKER. actator e includes ball bearing spring shackles

> IDING comfort, such as Studebaker alone can offer, is yours in full measure in the smart, new Studebaker Dictator at \$1185. For not only The President Eight and The Commander, but also Dictator models are equipped with Studebaker's exclusive ball bearing spring shackles.

> These shackles poise the chassis frictionfree, permitting perfect functioning of hydraulic shock absorbers and long, pliant springs. Lubricant sufficient for more than two years' average driving is sealed in each shackle. They will never squeak, nor rattle.

Studebaker holds more official records for speed and stamina than all other makes of cars combined. The Dictator's record of 5,000 miles in 4,751 minutes stands unequalled by any stock car under \$1,400.

New styles, new lines, new colors, new comfort—at a price possible only because of Studebaker's One-Profit manufacture. And behind it, 76 years of building quality transportation. Come-drive a Dictator-you'll want to own one if you do.

STUDEBAKER'S FOUR NEW LINES The Erskine \$ 835 to \$1045

The Commander..... 1435 to 1665



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如"以一本人的工作的工作的"。 "有一个人的人的人,我们就是一个人的人的人,我们们就是一个人的人,我们们们的人,我们们们的人,我们们的人,我们们们们们们们的人,

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We also have in our show-room six slightly used Dictators for \$985, delivered. Perfect condition. We doubt if anyone could tell them from a new car that had been driven a week. Small payments accepted. Your present car considered in trade.—The Tyas Company.