THE PROVIDENCE SUNDAY JOURNAL, JUNE 30, 1929

#### **PROGRAMS** NEWS

# HOOK-JUPS COMMENT

### Motor Tourist Now Finds Radio Necessary Adjunct

Regular or Portable Receiver Entertaining and Useful Instrument to Take Along.—Power Furnished by Auto Battery and B Units

BY BRAINARD FOOTE Motor touring and camping has grown springs. The tubes, properly wrapped, is immense proportions in the United can usually be stowed away inside the sates and the nomad habit seems to be set A small-size horn type or cone loudpining fast every summer. This year will speaker is satisfactory, as a large amount ge many thousands of automobile traveless off on trips varying from two weeks headphones, used in place of the speakto two months duration -- taking them in some instances to the opposite coast.

The auto camper has his tent, cooking equipment and supplies stowed away in boxes, hampers, running board car-ties and the like. Many of them find a portable radio set, or their usual set rigged up for the purpose, an entertaining and useful instrument to take along others would like to do it, too, if they knew that it was possible, and if they

An important question is that of obtaining the necessary power to operate the set. An all-electric set is naturally out of the question, as it could only be used when the tourist happened to stop at a camp or locking place where the right kind of electric power could be tapped"-usually 60 cycles, 110 volts.

Battery Type Needed.

The type of set operated from batteries is the kind required. A set that is erdinarily run from A and B elimina-tors at home will answer the purpose admirably. As every car has a storage battery, the most important item of power supply is solved at once. The car battery will run the set many hours each night, where the tourist travels 10 miles or more in the daytime, and foes little night riding.

The operation of the car keeps the battery fully charged. The auto storage bettery can supply power enough and to spare for a five, six or seven-tube set. Most storage batteries have three cells. giving six volts in all, the right volt-age for the radio tubes. A few cars, how-eur, have 12-volt batterles, with six cells. In using these for radio purposes. it is best to provide strong spring bat-ter clips, with which contact can be made with only half the battery. If this a done for two or three days, the con-ticts can be "switched" over to the other half of the battery for another

Ordinarily, a flexible lamp cord to fymish the power can be attached bemeath the dash, in most cases by at-taching one clip to the metal frame of the car most anywhere and the other clip to one of the reer binding posts of the dashboard ammeter.

B Cells for Plate. B batteries will furnish the "plate" energy. The smallest size B batteries are mical for any set, and should not be bought except in extreme cases for space-saving. The medium size is recommended for five-tube sets and heavy-duty size for six tubes or more. be removed and wrapped in cloth or

#### RADIO CLUB OF R. I.

Tomorrow Night to Be Devoted to Remodelling Clubhouse. Amed with hammers, saws and other tools, members of the Radio Club of Rhode Island will devote tomorrow evesing, the regular meeting night, to the work of remodelling the organization's nomity acquired clubhouse and labora-tory, which is located at the foot of Pearl

In order that they may take advantige of all the daylight available, at least 20 members of the club will arrive on the scene as soon after their regular working hours as possible. Reconstruction of the interior of the building an the installation of benches, shelves and laboratory equipment, as well as the creation of a regular meeting place which will seat at least 50 persons, will start

It is expected that the work to be done will be carried out in short order, due to the intensive efforts of those members who have volunteered their services. building, few other activities will be undertaken at tomorrow's regular session Charles N. Kraus, president, announced However, there will be a brief business session and the club's operators will maintain their regular schedule over station WIBCR, the official transmitter.

Clinton A. Sherman, who recently was assigned the call letters, W1CBS, will be on the air with his new station in another month, he announced.

Frederick L. Shaw, secretary of the club and owner of Station WiBN, has been granted authority to operate his nitter as a portable. His license is now valid at any point in the First Radio District, which takes in the New England

WIBCR, official station of the club has been in communication with several foreign countries since its installation in the new clubhouse. It has been operating almost exclusively in the 20-metre band, which makes possible extreme DX

### "HAMS" HEAR THORNLEY

Crystal-Control His Subject at Amateur Meeting. Howard Thornley, Providence radio

engineer, opened the summer session of technical talks of the Associated Radio Amateurs of New England, Inc., with an flustrated lecture on crystal-controlled broadcast transmitters
The meeting which he addressed was

held at the association's headquarters on Kelley avenue. East Providence. Mr. Thornley explained the import Ence of the recently developed thermo-static method of controlling the tempersture of the crystal, which assures a contant frequency at all times As an example he explained in detail

the apparatus used in the crystal-controlled installation recently placed in opextion at Station WJAR. He declared It is his belief that the majority of the ansmitting amateurs will be using cystal installations in the fall in order ercome the present-day crowding or

the high frequencies.

Albert Maker, Providence radiotrician tis elected to membership in the asso-dation at the business meeting which cation at the business meeting which a clean cloth. This will remove grimy is a clean cloth. This will remove grimy in a cloth in a clean cloth. This will remove grimy in a cloth cloth in a cloth cloth

# tissue paper unless the sockets have

er, will be useful when you are quite disant from any stations and cannot re-elve them strongly enough.

The B batteries can be tied to the set. together for easier carrying. A strap is useful for this purpose.

Antenna and ground connections are

easily arranged. For an aerial that is easy to put up and that does not need insula-tors, take along about 125 feet of flexible well-insulated wire. Attach a weight such as a heavy fishing "sinker" to one end and coat it with tape to prevent weakening of signals should this touch anythirg. The wire can then be thrown over a tree, and with a smooth-surface weight, it can easily be drawn down again, or "pulled through." Ground Connection.

The body of the car usually suffices for the "ground" connection, and with most sets, this will be taken care of through the battery contact, since the ground post of the set is also joined with the filament circuit of the set. A better ground can be obtained by running out 100 feet of insulated wire on the earth, underneath the serial. You will often find that fence-wires make an excellent antenna or ground. Be careful about attempting to make contact or throwing your weight over any phone, lighting or telegraph wires, as you are endangering your life if you try this. Your own pertable antenna will bring you good results at night from stations hundreds of miles away.

If possible, locate your set on the floor of the car, where it can be reached by opening the door, and then you can have all the wires connected except the aerial all the wires connected except the writer and in the wires connected except the will find the dry-cell operated superheterodyne receiving sets perfect for auto tour service. Still better, perhaps, are the new makes of set designed to be installed in automobiles, and which are permanently installed out of the way under the dash with tuning knobs on the dashboard.

However you do it, you'll find a bit of radio entertainment mighty pleasurable when you're camped under the trees, with a comfortable camp-fire be-fore you. And you not only get ac-quainted with new territory in your daytime driving, but make other contact with people in cities new to you by your radio touch at night.

#### JUNE IN RADIO

Month, in 1898, Saw First Paid Radiogram Transmitted.

June 3, 1898—The first paid radiogram was transmitted from the Needles (Isle of Wight) station. June 25, 1902-The first moving wire agnetic detector actuated by clockwork was installed on the Italian cruise

Carlo Alberto. L. 1 States Government requiring radio and radio equipment and operators on certain passenger-carrying vessels. June, 1913—Wireless telegraph bill presented to the Ottawa Parliament and passed under the title, "Radiotelegrap! Act of Canada."

June 2, 1917-Marked the "coming of age" of wireless telegraphy in England; that is, 21 years had clapsed since the registration of patent 12039 in 1896. June 30, 1919—There were 2312 ship stations in the United States, as compared with 1478 on June 30, 1918. At this time, new ship stations were in creasing at a rate of about 100 a month June 20, 1927—One of the first nation-wide hook-ups was used to broad-cast an event of national importance when more than 100 stations broadcast the Lindbergh reception from Washing-

June 29, 1927-Radio was used by the airplane America for the first time by any airplane in crossing the Atlantic June 27, 1928-Two-way short-wave

circuit was first used commercially for elephony between America and Europe This short-wave circuit supplements the long-wave circuit which was opened for

#### BOARD REORGANIZES

Each Commissioner Placed in Charge Special Division. The activities of the Federal Radio Commission have been divided so that the burden of the work will be taken off the shoulders of the chairman, it was announced recently. While no announcement has been made it is likely that Judge Ira E. Robinson will be retained as chairman of the commission

ndefinitely.

Major General C. McK. Saltzman, for mer chief of the Signal Corps, was put at the head of the engineering division Judge Eugene C. Sykes, vice chairman is in charge of the legal department. The personnel department has been taken over by H. A. Lafount and William Starbuck is director of the press relations unit. Chairman Robinson will have general supervision of all these depart-

Controlling Regeneration smooth form of regeneration con-is a variable resistor. A method widely used in short wave sets is to employ a 25,000 or 50,000-ohm high-grade variable resistor in series with the tickler coil. An objection to the use of a resistor in this manner, however, is its tendency to become noisy. It is recommended that a 1/2 or 1-mfd. condense or connected across the resistor to minimize the noise. A high-grade resistor of 0-200 ohms may be connected across the tickler coil without the fixed condenser

The tickler coil 'n either case is fixed. Lubricating Receiver Use just a trace of vaseline, not much on the wearing parts of the rheostats and potentiometers. Before lubricating, it is 10 00 p. m.—Black Piag Boys. a good plan to rub the instruments with 10.30 p. m.—Night Club Romances. good plan to rub the instruments with

### Today's Programs in Brief

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For the convenience of radio fans the fol- owing hourly schedule of broadcasting today	Music, WBZ, 303; WGBS, 254; WEAF.	WKBW, 204. WPO, 273. 10:45-Music. WHN, 297; WRO, 469. Feature, WEAF, 454. 11:00-Music. WHN, 297; WABC, 349-WPG,	ŀ
s given in brief form. Figures following sta-	454, WOR, 422, WRC, 469, WPO, 273.	10:45Music. WHN, 297: WRO, 469.	ŀ
ions denote wave length.	469. WARC 349 WORS 254. WOR.	11:00Music, WHN, 297; WABC, 349- WPG,	ľ
The hours are based on daylight saving	422	273	١
LOCAL STATIONS	Forum, WOR, 545, WTAO, 517, Organ, KDKA, 306, Peature, WJZ, 385; WGY, 380; WEAF, 454, WCSH, 319 4.10—Music, WBZ, 903 4:30—Church, WFJ, 536, Music, WHP, 210, Feature, WJZ, 203, WBAL, 283, WBZ,	11 100 - Organ, WBZ, 303. 111 15 - Organ, WPO, 273. Music, WEAP, 454; WRC, 469; WBAL,	١
B 00-Feature, WEAN, 545.	Peature W.IZ 305: WGV 380: WEAP.	Music, WEAP, 454; WRC, 469; WBAL,	ı
9.00-Music, WEAN, 545.	454, WCSH, 319	283. WELL AND 454. WELL 460	ı
0.00-Feature, WLSI, 248.	4.10-Music, WBZ, 303	11:30 - Peature, WEAP, 454; WRO, 469. Orchestra, WABC, 349. 11:45 - Peature, WIZ, 395; KDKA, 396. 12:00 - Peature, KNX, 286. 1:00 - Peature, KNX, 286. 1:30 - Concert, WLS, 345 2:00 - Music, WLW, 428, KYW, 294 - WMAQ.	ı
1:00-Church, WEAN, 545.	4:30-Church, WFI, 536.	11:45-Feature, WJZ, 395; KDKA, 306.	ı
2.15-Organ, WEAN, 545.	Peature, WJZ, 305: WBAL, 283, WBZ,	DISTANT STATIONS	ı
1 00-Missic, WEAN, 545	Prature, WJZ, 395; WBAL, 283, WBZ, 303, WOBS, 254, WRC, 469, WPG,	1-00Peature, KNX, 286.	L
2.15—Chorus WEAN 545	273.	1 30 - Concert, WLS, 345	ı
2:30-Baseball game, WEAN, 545.	4.45Church, KDKA, 306. Music, WOBS, 254. 5.00Church, WRC, 469. Music, WBAL, 246; WBZ, 303; WHP, 210WBC, 349 5.15Frature, WDC, 422. Music, WBZ, 303, WOBS, 254. Church, WPG, 273.	2 00 -Music, WLW, 428, KYW, 294- WMAQ,	ı
4 00-Porum, WJAR, 337.	5 00-Church, WRC, 469.		ŀ
5.30-Church, WEAN, 545	Music, WBAL, 286; WBZ, 303; WHP,	2 03 - Music, WIS, 345 2:30 Music, WMAQ, 448; KBTP, 205; WIS,	ı
6 00-Music, WEAN, 345.	5.15 Feature WOR 422	2.45 - Perite) WIA 345	ı
6 30-Music, WEAN, 545.	Music, WBZ, 303, WOBS, 234.	3.00 -Music, WMAQ, 448; KSTP, 204, WLW.	L
7 00-MOUSIC, WEAN, 345.	5.30-Music, WEAP, 454	2 45 - Recital, WLB, 345 3.00 - Music, WMAQ, 448; KBTP, 204, WLW, 428, WBB, 405, KYW, 294, 3 30 - Music, KYW, 294 3 45 - Baseball game, WLW, 428, 4:00 Forum, KOA, 361 Music, KBTP, 205; KNX, 386; WSB,	ı
7.11-Peature, WEAN, 545.	Church WRZ 303	3 45 - Baseball game, WLW, 428.	1
7.25-Weather, WJAR, 337,	Feature, WJZ, 395, WBAL, 283,	4:00 Forum, KOA, 361	ı
Music, WEAN, 545.	5 45-Orchestra, WOBS, 254, WEEL, 508.	Music, KSTP, 205; KNX, 386; WSB,	ı
Music WYAN 543	6.00-Music, WEAF, 454, WRO, 469, WABC,	4:15 Forum KGO 384	ı
8.00-Music, WEAN, 545.	Church, WBZ, 303, WBAL, 283, Frature, WJZ, 395, WBAL, 283, 5 45—Orchestra, WGBS, 254, WEEI, 508, 6.00—Music, WEAF, 454, WRO, 469, WABO, 349, WHP, 210, WTAO, 517, WEEI, 508, WOBS, 254.	5 00 -Music, KSTP, 205; KNX, 286.	
8:30-Music, WEAN, 545.	6 05Orchestra, KDKA, 306.	5 30 -+Orchestra, KYW, 204	ı
9:00—Talk, WJAR, 337.	6:15-Peature, WEAP, 454; WGBS, 254;	428. KPI 469: WSB, 405	ı
9:15—8pecial, WJAR, 337.	508, WOBS, 254, 6 05-Orchestra, KDKA, 306, 6:15-Feature, WEAP, 454; WGBS, 254; WOR, 422, 6:30-Feature, WJZ, 305; KDKA, 306, WABC, 349, WBAL, 283, WBZ, 303, WNAC, 214, WRC, 460 6 45-Eharmble, WGBS, 254,	405. Forum, KGO, 384 5 00 - Music, KSTP, 205; KNX, 286. 5 30Orchestra, KYW, 294 Music, KOA, 261; KGO, 384; WLW, 428; KPI, 469; WBI, 405 6 00Music, KPI, 460; KNX, 286. 6 05Orchestra, KYW, 294 6:30Music, WJW, 428, KOA, 361; KPI, 409, KGO, 384, KYW, 294; KSTP,	
9.45-Feature, WJAR, 337.	WABC, 349, WBAL, 283, WBZ, 303,	6 05-Orchestra, KYW. 294	ı
0 00-Music, WEAN, 545.	WNAC, 214, WRC, 440	409. KOO. 384. KYW. 294; KSTP.	
0:30-Music, WAN, 545		205	Г
0 45-News, WJAR, 337	7:00-Music, WBAL, 283, WEAP, 454, WHP, 210, WOR, 473, WEEL, 508, WPG, 273,	7 00 Orchestra, W.W. 475, R.S.P. 448;	
1 00-News, WJAR, 337.	KDKA 306	7 00 Orchestrs, W.W. 478, KSTP, 205: KOA, 381: KNX, 286, WMAO, 448; WOC, 300 KGO, 384 KPT, 469 7 30 -Muric, KOA, 381: KYW, 284- WOC,	П
11:10—Music, WEAN, 545	7 05-Peature, WJZ, 395	7 30 Muric, KOA, 361; KYW, 284, WOC,	L
9.00—Music, WEAN, 945. 10.00—Feature, WLS1, 248. 10.00—Church, WEAN, 545. 12.15—Organ, WEAN, 545. 12.15—Organ, WEAN, 545. 10.00—Music, WEAN, 545. 10.00—Music, WEAN, 545. 2.15—Chorus, WEAN, 545. 2.15—Chorus, WEAN, 545. 2.10—Bashbil seme, WEAN, 545. 5.30—Church, WEAN, 545. 5.30—Church, WEAN, 545. 5.30—Church, WEAN, 545. 6.30—Music, WEAN, 545. 7.00—Music, WEAN, 545. 7.11—Feature, WEAN, 545. 7.11—Feature, WEAN, 545. 7.30—Church, WEAN, 545. 7.30—Church, WEAN, 545. 7.30—Church, WEAN, 545. 7.30—Music, WEAN, 545. 7.30—Church, WEAN, 545. 9.30—Music, WEAN, 545. 1.30—Music, WEAN	7 05—Peature, WJZ, 395 7 13—Music, WBZ, 303, 7 15—Music, WOBS, 254	7.45 Feeture 301.8 345	1
9.00-Children's hour, WABC, 349; WJZ,	7 15-Music, WOBS, 254	7 41. Feature, WIR, 345 8 00 Missic, WSM, 441; WI,W, 428; KYW, 204 WMAO, 448; KOA, 361; KSTP, 205 KFI, 469; WSB, 405; WLS, 345.	1
395; WIIP. 210.	Church, WQAO, 297; WPI, 536	294 WMAO, 448, KOA, 361, KBTP.	
10 00-Music, WABC, 349, WHP, 210.	7.30—Feature, WOR, 422; WTAG, 517 Church, WQAO, 297; WPI, 536 Music, WEAP, 454, WOY, 380, WJZ, 395, WBAL, 283, WABO, 349, WOBS, 234, WRC, 469, WNAG, 214, KDKA,	WOC. 300	ı
Feature, WPAP, 207.	395. WBAL, 283, WABO, 349, WGBS,		1
395; WIIP, 210. 10 00— Music, WABC, 349, WHP, 210. 10.30— Music, WGY, 380, WNAC, 214. Feature, WPAP, 297. 10-38—Church, WEZI, 508. 10-45—Organ, WPAP, 297. Church, WIP, 492. 11 00—Church, WQAO, 397; KDKA, 368. WAAM, 240, WCSH, 310, WABS, 349 Music, WHP, 210.	306.	8 15-Music KYW, 294; WSB, 405; KSAP, 205, WSB, 481 8:30- Music, WMAQ, 448 8:45- Music, WMA, 461; KYW, 294, 900-Music, WCC, 300, WSM, 461 9:15- Music, WCC, 300, WSM, 461 9:15- Music, WCC, 300, WSW, 481 9:45- Orchestra, KYW, 294 9:45- Orchestra, KYW, 294	1
10:45—Organ, WPAP, 297.	2.45 Church WUD 210 WORR 254	8 45 Music, WMAQ, 451; KYW, 294.	H
1 00-Church, WOAO 397 KDKA 300	8.00—Church, WLWL, 273 Peature WDZ, 303, KDKA, 306; WJZ, 395, WBAL, 283, WABC, 349, WOR, 422 WEE, 508, WTAG, 517 8.15—Music, KDKA, 306, WJZ, 305, WBAL, 233, WABC, 349, WBZ, 303	9 00 Music, WOC, 300, WBM, 461	ľ
WAAM, 240, WCSH, 310, WABS, 349	Peature WBZ, 303, KDKA, 306; WJZ,	9.15- Music KFI 400 KGO 384 KYW.	ı.
Music, WHP, 210	422 WEEL 508. WTAG, 517	KOA 361 WOC. 300, WSW, 461.	ı
11:30-Fenture, WHP, 210. 12:00-Church, WRC, 469.	8.15-Music, KDKA, 306, WJZ, 395, WBAL,	9.45 - Orchestra, KYW, 204	
Organ, WHP, 210.	283, WARC, 349, WBZ, 303	Peature, KOA, 361, KSTP, 205; WSB;	ı
	8.30Music, WOR, 422, WABC, 349, WGBS, 254, WTAO, 517.	Muste KPI 469, KOO, 384; WLW.	ı
2:30-Music. WEAF, 484, WJZ, 395; WABC, 249; WPAP, 297.	8 45—Feature, WHP, 210. 9 00—Musir, WABC, 340. WOBS, 254, WHAP, 231	405, WOC. 300 Music, KPI, 469, KGO, 384; WLW, 428, WBM, 461,	ı
2:45—Organ, WPAP, 297, 1:00—Organ, WJZ, 395, Feature, WHF, 210, WEAP, 454	9 00-Mustr. WARC. 340. WOBS. 254.	10 00 - Music, WCCO, 370, WMAO, 448. 10:15 - Music, WLW, 428 KOA, 261, KGO, 364, KFT, 409, KYW, 294; KBTP, 205; WMAQ, 448, WOC, 300	
Feature, WHP, 210, WEAP, 454	WHAP, 231	10:15-Music. WLW, 428 KOA, 261. KGO.	ı
1 15-Orchestra, WIFP, 210. 1.30-Peature, WCSH, 319, WBZ, 303.	Talk, WC8H, 319, WEZI, 508; WGY, 389, WEAF, 454, WTAO, 517 9 10-Concert, WPG, 273.	WMAO, 448, WOC, 300	ı
1.30-Feature, WCSH, 319, WBZ, 303.	9 10Concert, WPG, 273.		
Music, WEAP, 454, KDKA, 306, WRC,	9 15-Music, KDKA, 306- WJZ, 395; WBAL, 283, WBZ, 303, WOBS, 254, WTAO,	10 45-Orchestra, KGO, 384, KOA, 361; KPI, 469; WOO, 300, KYW, 294 11 00-Music, KBTP, 205, KNX, 286.	
1 45—Peature, WABC, 340. 2.00—Music, WHP, 210.	283. WBZ, 303, WOBS, 254, WTAO,	469: WOO. 300. KYW. 294	
2.00-Music, WHP, 210.	Atwater Kent hour, WEAP, 454,	11 00Music. KBTP, 205, KNA, 280,	
283 KDVA 301 WIZ 305 WDZ 303	Atwater Kent hour, WEAP, 454, WOY, 380. WFI, 536; WRC, 469, WEEL, 508.	11:15 - Feature WIAV 428 KOA 361: KYW.	
Feature, WEAF, 454.	WEET, 508.	11:15 Frature, WMAQ, 448, 11:15 Frature, WLW, 428, KOA, 361; KYW, 294, WOC, 300, W8M, 461.	
233. KDKA. 103. WJZ. 305. WBZ. 303. Feature, WEAF, 454. 215—Feature, WEAF, 454. 215—Feature, WABC, 340. 2 30—Music, WEAF, 454. WGY, 380; WHP, 215—Feature, WABC, 340. 2 30—Music, WEAF, 454. WGY, 380; WHP, 215—Feature, WABC, 340. 2 30—Music, WEAF, 454. WGY, 380; WHP, 215—Feature, WABC, 340. 2 30—Music, WEAF, 454. WGY, 380; WHP, 215—Feature, WABC, 340. 2 30—Music, WEAF, 454. WGY, 380; WHP, 215—Feature, WABC, 340—Music, WEAF, 454. WGY, 380; WBZ, 300—Music, WEAF, 454. WGY, 380—Music, WEAF, 454. WGY, 454.	Reading, WHAP, 231, 9-30—Music, WIP, 231; WOR, 422, 9-40—Readings, WHAP, 231,	I I DO O-Shorter Water 204	٠,
2 30-Music, WEAP, 454, WGY, 380; WHP,	9 40-Readings, WHAP, 231.	Music, KOA, 361, WOC, 300.	i
Peature, WIP, 492	9.45-Orchestra, KDKA, 305; WJZ, 395.	Music, KOA, 361, WOO, 300.  11-40Peature, WMAQ, 448 11-40Peature, WW. 428, KPI, 469. 12-00Music, KYW, 294; KNX, 288; WLW, 12-10Music, WBB, 405	1
2:45-Music, WABC, 394.	WBAL, 283; WEAP, 454; WEEL, 508,	12.00Music, KYW. 294: KNX, 288: WLW.	ı
3:00-Music, WJZ, 395, WBZ, 303; WABC,	WRC. 469, WPI, 536, WTAG, 517	428. KPI, 469.	1
434 WBAL 261	10:00-Music, WABC, 349- WIP, 492	12 10-Music, WBB, 405	1
Peature, WQAO, 297, KDKA, 306,	380 WRC 469 WCSH 319 KDKA	12.15—Concert. KSTP. 205. 12.30—Music. KYW, 294 1.15—Music. KSTP. 205.	ľ
2145—Music, WIP, 402 2145—Music, WABC, 394, 3100—Music, WJZ, 395, WBZ, 303; WABC, 340, WOR, 422, WRC, 469, WZAF, 434, WBAL, 281, Feature, WAAO, 297, KDKA, 306, Talk, WOY, 480,	306, WBAL, 283 WTAO, 517.	1 15-Music, KSTP, 205.	1
3 30—Feature, WHP, 210; WABO, 349 Organ, WOY, 380	9 49—Readings, Whap, 231.  9.45—Orchestrs, KDKA. 306; WJZ, 395. WBAL, 283; WEAP, 454; WEEL, 506. WOY, 380, WOR, 545, WBZ, 303. WCC, 489, WFI, 536, WTAO, 517  10 00—Music, WABC, 349; WIP, 492  10.15—Music, WARP, 454; WFI, 536, WOY, 390, WRC, 469, WC8H, 319, KDKA, 306, WBAL, 283 WTAO, 517.  10 21—Music, WBZ, 303.  10 30—Peature, WHN, 297, WBZ, 303.	1 30 Orchestra, KPI, 469. 2 00 Orchestra, KPI, 469.	1
	10 30-FERLUIC, WILH, 251, W.D., 303.		
		12:45 p. m. Studio concert crebertes	1

## RADIO PROGRAMS

WEAN—The Shepards Store—545.
Teday.

8 00 a. m — Heroes of the Church, Columbia.

9 00 a. m — Morning musical, salon trio. 11.00 a m.—Service from the Mathewson
Street Methodist Epiteopal Church
12:15 p. m.—Organ recital by Bruce Dingman
1.00 p m —Sunahine hour, Dudley radio
carollers.
2.00 p. m.—Strong quartet, Columbia
2.15 p.m.—Lancaster Theatre children's

2 30 p. m.—Baseball game from Braves Field, Boston Red Sox vs. New York Yankers. 5 60 p. m.—French trio with soloist, Columbia.
5:30 p. m.—Service from the Tenth Presbytertan Church, Columbia
6:00 p m.—Vincent Rizzo and ensemble,
Columbia
6.30 p. m.—C A Klivert and Company program
7:00 p. m.—Musical interlude m.-Musical interlude

7.05 p m.—Newscasting.
7 10 p. m.—Weather report
7 11 p. m.—Amos "N" Andy.
7 23 p. m.—Gorrect time.
7 30 p. m.—Busical interlude .
7 30 p. m.—La Paina hour, "Mrs. Murphy's
8 00 p. m.—La Paina hour, "Mrs. Murphy's
10 p. m.—Sonatron program, Columbia
8:30 p. m.—Sonatron program, Columbia
8:30 p. m.—Sonatron program, Columbia
9:00 p. m.—Majestic Theatre of the sir. Columbia
10:00 p. m.—Arbury A. McDonald. America's
10:00 p. m.—Arbury A. McDonald. "Old Man
10:00 p. m.—Arbury A. McDonald. "God10:00 p. m.—Arbury Mrs. Berles." orchestra. "Dreaming Willow: "Mille.
Ellena Kasanova, violinist. "Press My
Hand. "Ell Spivak, baritone: "Gal da
10:00 a Saturday, "orchestra "Jester"
Dance, "orchestra: "Song of India."
Mile. Ellena Kasanova, violinist. "
Lilaca," Rachmanitonf, Mme. Z. NicoIlna, soprano "Wanderer," Gypsy
song, Ell Spivak, baritone: ensemble
100 p. m.—Providence Journal and Evening
Bulletin news fishles.
10:00 p. m.—Souvenor, sentimental music, 1

11:00 p. m.—Providence Journal and Evenin Bulletin news flashes. 11:10 p. m.—Souvenor, sentimental music Columbia 11:20 p. m.—Corral Islanders, Columbia. 12:00 m.—Correct time

Monday. 8:00 a. m .-- Morning devotions, Columbia. 8:30 s. m .-- Something for everyone, Colum-8:30 a m.—Bomething for everyone, Columbia.
9:00 a. m.—Jane Day and her Polar bears.
9:45 a. m.—Crant's League of Thrift.
10:00 a. m.—Woman's Institute. conducted b
June Abbott.
10:25 a. m.—Bian and Varna.
10:30 a m.—The Dandles, orchestral program.

10.30 a m.—The Dandies, orchestrat program.

11:00 a m.—National Radio Homemakers' Olub, Columbia, conducted by Ida Balley Allen.

11:30 a m.—Shepard Stores concert orchestra.

11:30 a m.—Bhepard Stores concert orchestra.

12:30 p m.—Popular sons by the Boston singers.

12:45 p m.—The Cavallers, orchestral program.

12:45 p m.—Providence Journal and Evening Bulletin news flashes.

13:50 p m.—Providence Journal and Evening Bulletin news flashes.

13:50 p m.—Providence Journal and Evening Bulletin news flashes.

13:50 p m.—Patelars in Prints, Columbia.

13:50 p m.—Barelay orchestra.

gram.

1:15 p. m.—Providence Journal and Evening
Bulletin news fishes.

1:20 p. m.—Bartlay orchestra,
2:00 p. m.—Patterns in Prints, Columbia.

2:30 p. m.—Shepard Stores concert orches-2.30 p. m.—Shepard Stores content of the tree.

3.00 p. m.—National Historial Society. Columbia: Romano and his Jolly Men.

4.00 p. m.—Modulations, organ recital, Columbia

4.30 p. m.—Show Folks, Columbia.

5.00 p. m.—Ted and his gang.

6.00 p. m.—Shepard stores concert or thestra.

p. m.-Duke Ellington's Cotton Club 6.30 5and.

7:00 p. m.—Providence Journal and Evening Bulletin news flashes.

7:05 p. m.—Newscasting.

7:10 p. m.—Weather report.

7:11 p. m.—Amos 'n' Andy.

7:28 p. m.—Correct time.

7:25 p. m.—Baseball scores.

7:30 p. m.—Down by the sea

7:55 p. m.—Vincent Lopez and his orchestra.

Columbia.

Octumbia.

8 00 p. m.—Musical vignettes—pictures of the South. 8:30 g. m -- Geco Couriers--Henry Burbig, humorist. 9.00 p m.—Physical Culture Magazine hour. Columbia \* Navy band. Col-umbia.

12:45 p. m.—Studio concert orchestra.

1.15 p m --Providence Journal and Evening Bulletin news flashes.

1.30 p. m.—Baseball game from Brave Pield Braves vs. New York Glants flast game. 12.00 p. m.—Correct time.

Tuesday

8 00 s. m.—Morring devotions. Columbia.

8 30 s. m.—Something for everyone Col-

9 00 s. m. Jane Day and her polar bears. 9 45 s. m -- Sentinels 10 30 a. m.—Glenwood Rangers
10 45 a. m.—The Dandies-orchestral program
11 00 a. m.—National Radio Homemakers
Club conducted by Ida Bailey Allen
11.30 a. m.—Shepard Stores concert orchestra. 12 30 p m .-- Popular songs by Jack Reilly 12 45 p. m -- The Cavaliers, orchestral pro-

1 15 p m — Providence Journal and Even-ing Bulletin news flashes.
1.30 p m.—Organ luncheon music. Colum-bia Reviews to person Columbia. 2 00 p m .-- Patterns in prints Columbia 2 30 p m .-- Shepard Stores concert orches-tra. tra.
p. m — Musical interlude.
p. m — Baseball game—from Brave
Field—Braves vs. New York Clants.

Field—Braves vs. New Young State 5 00 p. m.—Ted and his gang visit Woonsocket.

5.00 p. m.—United Bymphony Orchestra.

Columbia

6.30 p. m.—Special holiday mesage from Unite Red

Market State State Concert orches-6:40 p m.—Shepard Stores concert orches

6:40 p m.—Shepard Stores concert occases

7:00 p m.—Providence Journal and Evening Bulletin news flashes.

7:05 p m.—Newscasting

7:10 p. m.—Weather report.

7:11 p. m.—Amos n' Andy.

7:23 p. m.—Correct time.

7:25 p. m.—Baseball scores.

7:30 p. m.—Shepard Musketeers.

8:00 p. m.—Joint recital, Columbia, Sergel
Kotlarsky, violinist and Mathilde
Harding planist.

8:30 p. m.—Plying stores—aviation news,
Columbia

9:00 p. m.—Paul Whiteman hour. Columbia

10:00 p. m.—Voice of Columbia, Columbia.

bia 10 00 p m.—Voice of Columbia, Columbia, 11:00 p. m.—Pravidence Journal and Even-ing Bulletin news flashes 1:05 p. m —Basebal scores 1:10 p m —Pipe dreams—poetic revertes. Columbia. Columbia.

11 30 p. m.—Dance orchestra. Columbia.

12 00 p. m.—Correct time
Wednesday

8 00 a. m -Morning devotions. Columbia. 8 30 a. m. -Something for everyone. Columbis 9:00 s. m.—Jane Day and her polar bears.
9:00 s. m.—Orant's League of Thrift
10:00 s. m.—Women's institute, conducted by

11.00 a m National Radio Homemakers
11.00 a m National Radio Homemakers
Club, conducted by Ida Bailey Allen
11:30 a m.—Interior decoration, Ida Bailey
Allen
12:00 m.—Bhegard Stores concert orchestra.

7.00 p m.—Providence Journal and Evening Bulletin news flashes.
7.05 p m —Newscasting.
7.10 p m —Weather report.
7.11 p m.—Uncle Red and his A. B. C.

7-29 p.m.—Correct time.
7-30 p.m.—Baseball scores.
7-35 p.m.—Organ recttal from Forest
8-00 p.m.—Hank Simmons's Show Boat.
Columbia, presentes "Tom Bawyer"
9-00 p.m.—United Symphony Orchestra
with George Rymer, tenor.
9-30 p.m.—La Palina Smoker, Columbia,
Dale Wimbow, popular song writer. with George Rymer, tenor,
9:30 p m.—La Palina Smoker, Columbia,
Dale Wimbrow, popular song writer
10:00 p. m.—Kolster radio hour, Columbia
10:00 p. m.—Providence Journal and Eve10:00 p. m.—Eve10:00 p. m.—La Publicity news Gashes

11:00 p. m.—Kansas Frolickers. Columbia
11:00 p. m.—Previdence Journal and Evening Bulletin news flashes
11:05 p. m.—Baserball scores.
11:10 p. m.—Duke Ellington's Cotton Club
band. 12:00 p. m.—Correct time. 8:00 s. m.—Morning devotions. Columbia 8:30 s. m.—Something for everyone. Cos 30 a m.—Something for everyone, Co-lumbia, 0:00 s. m.—Jane Day and her polar bears, 10:00 s. m.—Women's Institute, conducted

10.00 a. m.—Jane Day and her polar order.

10.00 a. m.—Women's Institute, conducted by June Abbott.

10.25 a m.—Stan and Varna
10.30 a. m.—Toledo Rex Byray program. Columbia—household hints.

11.00 a. m.—To be announced.

11.30 a. m.—Musical program

11:45 p. m.—Shepard Stores concert orches-12.30 p.-m.-Popular-songs by Jack Reilly

first game, p. m.—Baseball game from Braves Pield Braves vs New York Giants, sec-

7.00 p m.—Providence Journal and Evening Bulletin news flashes.
7:05 p. m.—Newscasting
7:10 p. m.—Weather report.
7:11 p. m.—Amos 'n' Andy.
7:23 p. m.—Correct time

p. m. —Correct time
p. m. —Barball scores
p. m.,—Mac and Lennie and Samuela,
Columbia. "An Announcer's Life is Not
A Happy One."
p. m. —Vincent Lopez and his orchestra,
Columbia. Columbia. 8.30 p. m - United States Marine Band, Co-9 00 p m .- True detective mysteries, Colum-9:30 p m — Light opera gema, Columbia, 10:00 p. m.—The New Yorkers, Columbia, concert dance orchestra, 11:00 p. m.—Providence Journal and Evening Bulletin news flashes.

1.05 p. m.—Baseball scores. 1:10 p. m.— Simone Martucci's orchestra, Co-12.00 p. m .-- Correct time. 8:00 a. m.—Morning devotions, Columbia... 8:30 a. m.—Something for everyone, Co-

n 30 a m —Something for everyone, Conumbia.

9 00 s. m — Jane Day and her polar bears.
9 45 s m — Grant's League of Thrift.
10.00 s. m.—Women's Institute, conducted
by June Abbott.
10.30 s. m.—Educator entertainers.
10 45 s. m — Whitmore's favorites.
11:00 s m — National Radio Homemakers'
Club. Columbia, conducted by Ida Baiiey Alien.
11:30 s m — Shepard Stores concert orchestra.

tra.

11.45 a m —Radio Beauty School, Columbia
12.15 p m —Continuation of the Shepard
Biores concert orchestra
12.30 p m —The Meridians, Columbia.
12.45 p m.—The Cavallers, orchestral program gram

1-15 p m --Providence Journal and Evening
Bulletin news flashes

1-30 p m --Barciay orchestra.

2.00 p m --Patterns in Prints, Columbia.

3.00 p m --"Science Snapshots," Columbia.

Pauline Cleaver and Y. W C. A. ensemble

4:00 p. m.-Modulations, organ recital, Co .30 p. m - Studio program, Columbia,

tra. 6:30 p. m —Riesers jewelry program. 6:45 p. m.—Shepard Stores concert orches-

Tra. Providence Journal and Evening Bulletin news flashes.

7.05 p. m.—Newscasting.

7.10 p m.—Newscasting.

7.11 p. m.—Amos 'n' Andy.

7.23 p. m.—Correct time.

7.25 p m.—Baseball scores.

7.20 p. m.—Howard Pashion Plates, Columbia.

hia.

8 00 p. m.—Hawaiian Shadows, Columbia.

8 30 p. m.—The Rollickers, Columbia.

9 00 p. m.—True Biory hour, Columbia.

10 00 p m.—In a Russian Village, Columbia.

10 30 p m.—"Doe" West program, Columbia, with Dorsey Byron, soprano.

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

11:10 p. m.—Baseball scores.

11:10 p. m.—Dance orchestra, Columbia.

12:00 p. m.—Correct time.

Saturday m -Merning devotions, Columbia, m -Something for everyone, Colum-9:00 s. m.—Jane Day and her Polar bears. 10:00 s. m.—Magawunkapog Centre artists. 10:30 s. m.—The Dandles, orchestral pro

10.30 a. m.—rine Dandies, orchestra; pro-gram.

11.00 a. m.—Cousin Charlotte's Music Club 11:30 a. m.—Shepard Stores concert orches-tra.

12.30 p. m.—Baston singers.

12.45 p. m.—The Cavaliers, orchestra procram.

1 15 p m -- Providence Journal and Evening
Bulletin news flashes.

Columbia.

Bulletin news flashes.

1 30 p. m.—Luncheon music, Columbia.

2 00 p. m.—Patterns in prints, Columbia.

3.00 p m.—Baseball game from Braves field.

Braves vs. Chicago.

5:00 p.m.—Ted and his gang.

6:00 p m.—Shepard Stores concert orches-

m .- WNAC Players present 'Torty

6 00 p m.—Shepard Stores concert brchestra.
7:00 p m.—Providence Journal and Evening Bulletin news flashes.
7:05 p m.—Newscasting.
7:10 p m.—Weather report.
7:11 p m.—Amos 'n' Andy.
7:23 p m.—Correct time.
7:25 p m.—Gareball scores.
7:30 p m.—Hotel Biltmore orchestra.
8:00 p m.—Babban Finance period, Colum-9:00 p. m.—WNAC Players present Miles an Hour." 9:30-p.m.—Temple hour, Columbia.

10 00 p. m.—National forum, Columbia.
10.30 p. m.—Paramount orchestra, Columbia.
11 00 p m.—Providence Journal and Evening
Bulletin news fisshes.
11:05 p m.—Baseball scores.
11:10 p. m.—Roy Ingraham's Hotel Para-By the Trouble Shooter mount orchestra. 11 30 p m -Simone Martucci's orchestra

11.10 p. m.—Ray Ingraham's Hotel Paramination of mount orchestra.

11.10 p. m.—Simone Martueci's orchestra.

11.10 p. m.—State Dournal and Evening Bulletin news flashes.

11.10 p. m.—State Isand Department of the pormissa to the faciliar of the same ching happens in the facility of the same ching as simple as a disconnected aerial wire—although as a micro one in the jurious condemn the set simply because of a human mustake.

11.10 p. m.—State Dournal and Evening Bulletin news flashes.

11.10 p. m.—State Isand Department of the promised not to the door he promised not to the door he

1.30 p. m.—Weather report.

1.35 p. m.—Continuation of studio program.

8 45 p. m.—Providence Journal and Evening Bulletin news flashes.

6:50 p. m.—Rhode Island Department of Agriculture produce report.

6:55 p. m.—Weather report

7:00 p. m.—Roy Partington, Julianna Allen and Mary Taylor.

7:35 p. m.—Baseball scorrs.

8:00 p. m.—Voice of Firestone, National.

8:00 p. m.—General Motors Family Party, National.

9:30 p. m.—General Motors Family Party, National.

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

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

9:45 a. m.—Musical program.

10:00 a. m.—Wisker program.

10:00 a. m.—Wisker program.

10:00 a. m.—Musical program.

10:00 a. m.—Musical program.

10:00 a. m.—Wisker program.

10:00 a. m.—Wisker program.

10:00 a. m.—Wisker program.

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

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

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

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

10.30 a. m.—Ratista program.

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

1.10 p. m.—Studio program.

1.10 p. m.—Studio program.

1.20 p. m.—Weather report.

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

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

6.55 p. m.—Rhode Island Department of Agriculture report.

6.50 p. m.—Weather report.

6.50 p. m.—Baseball scores.

7.00 p. m.—Joconyland skeiches—National.

8.00 p. m.—Boconyland skeiches—National.

8.00 p. m.—Berety talk spensored by the Providence Safety Council.

8.20 p. m.—Prophylactic program — National.

8.20 p. m.—Prophylactic program — National.

8.20 p. m.—Eveready hour—National.

9.00 p. m.—Eveready hour—National. 9:00 p. m.—Eveready hour—National. 10:00 p. m.—Clicquot Club Eskimos-

10:30 p. m.—Providence Journal and Eve-ning Bulletin news flashes. 10:35 p. m.—Baseball acores. 9:30 a. m.—Housewives' Radio Exchange, a department conducted by Mrs. Wood on matters of household interest. Questions submitted will be answered by

radio.

10:00 a. m.—National Home Hour, National.

10:45 a. m.—Augusta Bowen Panning, fabric stylist.

10:50 a. m.—Your Child," by Grace Abbott, speaking under the suspices of the United States Department of Labor, National.

11:15 a m.—Radio Household Institute, National.

tionsi.

1:05 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.—Continuation of studio program.

0:35 p. m.—Rhode Island Department of Agriculture produce report.

6:40 p. m.—Weather report.

6:45 p. m.—Providence Journal and Evening Bulletin news flashes.

6:50 p m.—Automobile Club of Rhode Island Lik.

6:50 p.m.—Automobile Club of Rhode Island
Laik.
6:55 p.m.—Baseball scores.
7:00 p.m.—Madge Hart O'Rourke, soprano;
Priedoil Friedlund, basso.
7:30 p.m.—Mobile cloude, basso.
7:30 p.m.—Mobile concert, National.
8:30 p.m.—Mobilel concert, National.
8:30 p.m.—Har-yy Wonder Bokera, National.
8:30 p.m.—Paimolive hour, National.
8:30 p.m.—Paimolive hour, National.
8:30 p.m.—Previdence Journal and Evening
Bulletin news flashes.
10:35 p.m.—Baseball scores.
10:35 p.m.—Baseball scores.
10:30 p.m.—Bixty-seventh annual convention National Education Association of the United States. Address by Honorable Arthur M. Hyde, Secretary of the Department of Agriculture. Subject:
"Equal Opportunity and Agriculture."
Music by Technical High School Band of Atlants. National.
6:45 p.m.—Baseball scores.
6:50 p.m.—Baseball scores.
6:50 p.m.—Baseball scores.
6:50 p.m.—Weather report.
7:00 p.m.—Midwek Federation hymn sing. National.
8:00 p.m.—Black and Wing—National.

tional.

8:00 p. m—Buck and Wing—National.

8:30 p m—Broadway Lights—National

9:00 p. m.—Selberling singers—National.

9:30 p. m—Independence Day Historical

aketch—National.

10:00 p. m—Holley-Bluart four—National.

10:30 p. m—Providence Journal and Evening

Bulletin news flashes.

Bulletin news flashes.

10.35 p. m.—Baseball scores.
Friday

9:30 a. m.—Housewives Radio Exchange.
a department conducted by Mrs. Wood
on matters of household interest,
Questions submitted will be answered
by radio.

10:00 a m.—National home hour. National
11:50 a. m.—Musical program.

11:15 a. m.—Radio household institute, National.

11:15 a. m.—Radio nouserous intendictional.

1:05 p. m.—Providence Journal and Evening Bulletin news flashes.

1:10 p. m.—Studio program.

1:20 p. m.—Weather report.

1:35 p. m.—Continuation of studio program.

6:15 p. m.—Providence Journal and Evening Bulletin news flashes.

6:20 p. m.—Rabo \* Island Department of Agriculture produce report.

6:25 p. m.—Weather report.

6:20 p. m.—Raybestes Twins, National.

a.00 p m.—Bertil of Larson, tender Ana
8:20 p, m — Wallace Randall
8:30 p, m.—Baseball acores.
8:35 p, m.—Huia Hawalians.
9:00 p, m.—Bummer melodies, National.
9:30 p, m.—Bertadertiown band, National.
10:30 p, m.—Gold Medal Mattress Boys.
10:30 p m.—Providence Journal and Evening Bulletin news flashes.
10:35 p, m.—Baseball acores.
8xterday

 m.—Musical program.
 m.—Radio household institute, National. tional.

1:05 p m — Providence Jornal and Evening Bulletin news flashes.

1:10 p. m.—Musical program.

1:30 p. m.—Weather report.

1:35 p. m.—Continuation of studio program.

6:45 p. m.—Providence Journal and Evening Bulletin news flashes.

6:50 p. m.—Musical program.

6:55 p. m.—Weather report.

m .- James F. McKenney, tenor, ac Continued on Page Eight

## The Dials Diary

ANSWERS TO THE SUNDAY QUIZ 1. Rhode Island has a larger population than Vermont. Latest official figures are: Rhode Island, 604;397

2. The beardless condition of the American Indian is a racial characteristic. There is no difference between antenna and an aerial. Both are

used in radio to designate the same President Roosevelt's, widow is still living. Her address is Oyster Bay,

Long Island, N. Y. In Rhode Island, English sparrows, English starlings, hawks (except fish hawks), owls, crows and crow black-birds may be killed at any season of the year by a person upon his own

Ponce de Leon, the discoverer, gave the State of Florida its name. 7. Mrs. Juliette Low of Savannah was the founder of the Girls Scouts-of

The yen is the unit of currency-of Japan. 9. There are 6 feet in a fathom. 10. The requirements for admission in

the Rhode Island State College are 15 standard units of high school 1. Six Presidents of the United States have died in office—William Henry Harrison, Zachary Taylor, Abraham-Lincoln, James A. Garfield, William McKinley and Warren G. Harding. The four States, names of which begin with the letter "W," are Wash-ington, West Virginia, Wisconsin and

Wyoming. 3. The transatlantic liner Majestic is a . The abbreviation "M. S." stands for Master of Surgery.

15. The salary of the Mayor of Woonsocket is \$3500 a year. 6. The area of Nantucket is 60 square . 7. Aluminum is harder than tin.

The volcanic peak, Misti, is located in Peru. 9. Charles Augustus Lindbergh is the full name of Col. Lindbergh. That if his bride is Anne Spencer Morrow

Lindbergh. O. The Gen. Ambrose E. Burnside monument stands in front of the .....





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THAS TELAB Too dong a technical tale to tell here! But-the modern process which produces TRIAD Tubes allows unlimited power that retains all the beauty of the original tone. Here is a new tube. quality-undeniably 1/2 Give your set he benefit of the best-equip it with the tube in the black TRIADS throughout! TRIAD MFG. CO., Inc., PAWTUCKET, R. I.

### RADIO PROGRAMS

Continued from Page Seven companied by Violette Marks.

7:15 p m.—Universal Safety Series. "Safety and the Worker," by James J. Davis, Becretary of Labor, National.

7:30 p. m.—Baseball scores.

7:35 p. m.—Melody ramblers.

8:00 p. m.—The Cavalcade, National.

9:00 p. m.—General Electric hour, National. tional.

10.00 p m —Lucky Strike dance orchestra,
National.

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

11 05 p m.—Baseball scores.

WLSI-THE LINCOLN STUDIOS, INC -- 218 WLSI—THE LINCOLN SACORDA Today 10.00 a. m — Watchtower program relayed from New York city. Menday

Wednesday 8:05 p. m.—Old Fogey. Thursday

WPAW-SHARTENBERG'S-748.

Monday.

10 00 a. m — Good morning.

10 30 a. m.—Whose birthday?

11 00 a. m.—Whose birthday?

11 15 a. m.—Fifth avenue of the air,

11:30 a. m — Economical heating. 11:30 a. m — Economical heating.
11:45 a. m — News bulletins
12:00 m.—Correct time
6:00 p. m.—News bulletins
6:20 p. m.—Buying a dealer with your car
6:30 p. m.—Weather report.
6:35 p. m.—Request period.
6:35 p. m.—Basebull scores.
7:00 p. m.—Time signal.
7:05 p. m.—Jesse Crawford organ recordings.

7.30 p. m.—Musical pals.

ings.

7.30 p. m.—Musical pals.

Tuesday.

10 00 a m.—Good morning

10:15 a. m.—A verse or two.

10 30 a. m.—Whose birthday?

10.45 a m.—Beventy-one years of service.

11 00 a. m.—Selody maid

11:15 a. m.—Request period.

11:45 a. m.—News bulletins.

12:00 m.—Correct time

10:00 p. m.—Weather report.

10:10 p. m.—Request period.

10:15 p. m.—Request period.

10:15 p. m.—Request period.

10:15 p. m.—The Troubadours of the North.

7:00 p. m.—The Troubadours of the North.

7:05 p. m.—The Troubadours of the North.

7:05 p. m.—The Troubadours of the North.

10:15 a. m.—Just between ourselves.

10:10 a. m.—Whose birthday?

10:10 a. m.—Whose birthday?

10:10 a. m.—Fifth avenue of the air.

11:35 a. m.—Request period.

11:45 a. m.—Request period.

11:45 a. m.—Correct time.

10:00 p. m.—Request period.

10:10 p. m.—Baying a dealer with your car.

10:10 p. m.—Rambles through the music al
10:10 p. m.—Aambles through the music al-

Thursday Friday

10.00 a. m.—Good morning

10.15 a. m.—Melody maid

10.30 a. m.—Whose birthday?

10.45 a. m.—Seventy-one years of service.

10.35 a. m.—Your home can be beautiful.

11.00 a. m.—Fifth revenue of the air.

11.35 a. m.—Your home release period.

11.45 a. m.—News bulletins.

12.00 m.—Correct time.

6:00 p. m.—News bulletins.

6:10 p. m.—Request period.

6:20 p. m.—Buying a dealer with your car.

6:23 p. m.—Weather report.

6:30 p. m.—The Earls of Pawtucket,

7:00 p. m.—The Earls of Pawtucket,

7:05 p. m.—Request period.

7:15 p. m.—Rosevels, the old and the new.

7:30 p. m.—The Miamians.

Naturday.

10:00 a. m.—Good merning.

10:15 a. m.—Let's make believe.

10.30 a. m.—Good merning.

10:15 a. m.—Let's make believe.

10.30 a. m.—Good merning.

10.15 a. m.—Let's make believe.

10.30 a. m.—Good merning. Silent. Friday



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10:45 a m.—Your home can be beautiful.

11:00 a. m.—Melody maid.

11:15 a. m.—Request period.

11:25 a. m.—Harley Brothers.

11:45 a. m.—News bulletins.

12:00 m.—Correct time.

6:00 p. m.—Request period.

6:20 p. m.—Request period.

6:30 p. m.—Request period.

6:35 p. m.—Baseball scores.

7:00 p. m.—Time signal.

7:30 p. m.—Request period.

7:30 p. m.—Request period.

8:53 p. m.—Baseball scores.

7:00 p. m.—Time signal.

7:05 p. m.—Request period.

OUT OF TOWN STATIONS To-Day

WJZ-NEW YORK-205. m.-Children's hour. m.-American Pro-Art atring quar tet.

1:00 p m.—Concert artists' hour.

2:00 p, m.—Roxy symphony concert.

3:00 p m.—Friendly hour.

4:00 p, m.—Mestro's hour.

4:30 p, m.—Mestro's hour.

5:30 p, m.—Whittail Anglo-Persians.

7:00 p, m.—Correct time and basescres.

7 00 p. m — Correct time solve cores.

7:30 p. m.—American singers.

7:30 p. m.—The Nomads.

8:00 p. m.—Enna Jettick melodies.

8:13 p. m.—Lierbestraum. Beatrice Bea

WEAF—NEW YORK—131.

p. m.—Mexican Tipica orchestra.

p. m.—Blue and White Marimba band.

p. m.—Blue and White Marimba band.

p. m.—The Balladeers

p. m.—The Balladeers

p. m.—Riviera string quartet.

p. m.—National Sunday forum.

p. m.—Echoes of the Orient

p. m.—Tace to Pace with Our Presidents. 6:15 p. m.—"Face to race with One trees, one ones."
7 60 p. m.—"In the Time of Roses."
7 35 p. m.—To 9.15 p. m.—Same as WJAR.
9.15 p. m.—Maple Transit
10:15 p. m.—Same as WJAR.
10:15 p. m.—Same as WJAR.
11:15 p. m.—Same as WJAR.
11:15 p. m.—Same as WJAR.
11:15 p. m.—Same as WJAR.
11:10 p. m.—Same herman, xylophonist.
11:10 p. m.—Rushin Cathefat Choir.
KDKA—PITTSBURGH—306.
11:20 p. m.—Couret service.
11:20 p. m.—Correct time.
11:20 p. m.—Correct time.
11:20 p. m.—Correct time.
11:20 p. m.—Correct time.

1.30 p. m. — Allegheny County Memorial Park concert.

2.00 p. m.—To 4 00 p. m.—Same as WJZ.

4.00 p. m.—Organ recital.

4.40 p. m.—Baseball scores.

4.45 p. m.—Service from Shadyside Presbyterian Church

6.00 p. m.—Correct time.

6.01 p. m.—Baseball scores.

6.05 p. m.—Recording orchestra.

6.20 p. m.—Seasons chimes.

7:00 p. m.—Seasons chimes.

7:01 p. m.—Utica jubilee singers.

7:30 p. m.—To 12:15 p. m.—Same as WJZ.

WAAM-NEWARK-240. 11.00 a. m.—Morning service from Presbyterian Church. 9:00 a. m.—Morning musical. 10:00 a. m.—Children's hour. 11:00 a. m.—West End Presbyterian Church

11:00 a. m.—West End Presbyterian Church service.

12:30 p. m.—Jewish program.

1:45 p. m.—Columbia string quartet.

2:15 p. m.—There Little Sachs.

2:45 p. m.—Ben Alley. tenor.

3:00 p. m.—Bymphonic hour

3:00 p. m.—Judnut DuBarry program.

4:00 p. m.—Cathedral hour.

5:00 p. m.—To 6:00 p. m.—Bame as WEAN.

6:00 p. m.—Vincent Rizzo and casemble.

6:30 p. m.—Wesper ensemble.

7:30 p. m.—Herbert's entertainers.

8:00 p. m.—To 12:00 p. m.—Bame as WEAN.

5-00 p. m.—Uncle Ed and his dream children.
5-30 p. m.—To 10 15 p. m.—Same as WJZ.
10:15 p. m.—Concert orchestra.
11:15 p. m.—Evening greveries.
WBZ—SPRINGFIELD—303.
1:30 p. m.—Enginite boys.
2:00 p. m.—Game as WJZ.
3:00 p. m.—Gorrect time.
3:01 p. m.—Same as WJZ.
3:30 p. m.—Metropolitan hour.
4:10 p. m.—Pauline Nichols. planist. and Alberta Kelleher, violin-saxophone.
4:00 p. m.—Choral singers.
5:00 p. m.—Edward Macliugh, baritone.
5:15 p. m.—Musical.
5:27 p. m.—Correct time.

5 00 p. m.—Edward Maclugh, barrione.
5:15 p m.—Musical.
5:27 p. m.—Correct time.
5:30 p. m.—To 7:00 p. m.—Same as WJZ.
7 00 p. m.—Chimea, baseball records, and temperature.
7:13 p. m.—Ensemble.
8:00 p. m.—Same as WJZ.
8:15 p. m.—Junior symphony ensemble.
9:15 p. m.—Junior symphony ensemble.
9:15 p. m.—Adam Radmond, barrione, and Amphion ensemble.
9:45 p. m.—Same as WJZ.
10:15 p. m.—Correct time.
10:21 p. m.—Musical program.
10:22 p. m.—Baseball scores
10:30 p. m.—WBZ players: "The Yellow Triangle."
11:00 p. m.—Weather, news and temperature.
11:00 p. m.—Weather, news and temperature.

WCSII—PORTLAND—319,
a. m.—State Street Church service,
p. m.—Radio Parish Church service,
p. m.—National Sunday forum,
p. m.—Same as WJAR
p. m.—Same as WJAR
p. m.—Same as WJAR.

10.15 p. m.—Same as WJAR.

WEEL—BOSTON—508.

10.38 a m.—Service from First Church of Christ Scientist.

12:05 p m.—Cofrect time.
5:45 p. m.—Musical program.
6:00 p. m.—New York program.
7:00 p. m.—Fox Fur trappers.
7:30 p. m.—Oarden talk.
7:50 p. m.—News dispatches.
8:00 p. m.—Jenney concert.
9:00 p. m.—Masterpiece planist.
9:15 p. m.—Bame as WEAP.
9:45 p. m.—Oakland Motor Company or-chestra.
10:45 p. m.—News dispatches.

WFI-PHH.ADELPHIA-33a,
4:30 p. m.—Vesper service from Second
Presbyterian Church,
7:30 p. m.—Service from Arch Street Presbyterian Church,
9:15 p. m.—To 10 15 p. m.—Same as WEAP,
10.15 p. m.—Same as WJAR.

WGBS-NEW YORK-234
3.30 p m.—Sam Walsh and Ivan Young-banjo and plano.
4:00 p. m.—Judith Sanda, musical.
4:30 p. m.—Beatrice Wightwick, contraito
4:45 p m.—Marguerite DeVine, piano con-5 15 p m.—Eva Taylor and Clarence Wililams
5:45 p m.—Vera Nette, operatic excerps,
6:00 p. m.—Sylvia Heller, planist.
6:15 p m.—Pith-London and Giovanni, dueta.
6:45 p. m.—Denn-Dingwell, ensemble.
7:15 p. m.—Olga Paul, alto
7:30 p. m.—Lillian DeZon, plano recital.
7:45 p. m.—Pine Arts Opera Company program.

gram.
p. m.—Serenade quintet
p. m.—Mona Shaw, concert singer,
p. m.—Saxophone octet, WGY-SCHENECTADY-389,
p m —Aviation weather report.
a m—Service from Albany Street
Methedist Episcopal Church
p m.—Aviation weather report.
p m = Talk, "Education and Politics."
p m —Organ recital
p m.—National Sunday forum.
p. m to 9 15 p m —Same as WJAR.
p m —Same as WJAR.
p m —Same as WJAR.

WHAP-NEW YORK-231 9:00 p. m.—Sacred music and Bible reading.
9.15 p. m.—Christian Science reading from
the writings of Mary Baker Eddy.
9-40 p m —Christian Science reading from
the writings of Augusta E. Stelson, C.
S. D

WHN-NEW YORK-207 m.—Dance orchestra. m.—Orchestra. m.—"The Romanceers." WHP—HARRISBURG—210
a. m.—Watch-Tover program,
a. m.—Children's hour,
a. m.—Keystone quartet,
a. m.—Radio program,
m.—Organ hour,
p. m.—Musical trio,
p. m.—Drehestra,
p. m.—Estelle Spencer, soprano,
p. m.—Estelle Spencer, soprano,
p. m.—Yorktowne singers, 4.00 p. m.—Musical enarmble.
4:00 p. m.—Mack's Battery travels.
5:00 p. m.—Livingston's family party.
6:00 p. m.—Lyric radio hour.
7:00 p. m.—Atwater Kent period.
7:45 p. m.—Evening Church services.
8:45 p. m.—James Maxwell and Charles
Page.

WIP-PHILADELPHIA-192 10:45 a. m .- Service from the Holy Trinity Church. 12.30 p. m.—Time signal.
12.30 p. m.—International Bible program.
9:30 p. m.—Organ recital.
10:00 p. m.—Instrument quintet.

8.00 p m .- A trip to Chill. WNAC-BOSTON-211 10.30 a. m .- Service from Park Street Con-gregational Church. 12.15 p. m .- Organ recital.

WOR-NEWARK-122 WOR-NEWARK-122
3.00 p. m.—Law Enforcement."
3.00 p. m.—Sanday afternoon salon.
4.00 p. m.—Sanday afternoon salon.
5:00 p. m.—The Psychologist Says"
5:15 p. m.—Traming of the Shrew."
6:13 p. m.—Oreat Cathedrals.
7:00 p. m.—Oreat Cathedrals.
7:00 p. m.—Concert ensemble
8:00 p. m.—Concert ensemble
8:00 p. m.—Lour Star Rangers.
8:10 p. m.—Bhady Luttes.
9:00 p. m.—Market sind Halsey street playbouse.

WPAP-PALISADES-203 WPG-ATLANTIC CITY-213 3.30 p. m.—Concert band.
4.30 p. m.—Community vocal and instrumental recital.

mental recital.

5.15 p. m.—Religious services.

7.00 p m.—Special Sunday concert.

9.00 p m.—News flashes and baseball score9.10 p m.—Sunday evening operatic concert.

10.30 p m.—Special musical.

11.00 p. m.—The Wandering Poet."

11.13 p m.—Organ concert. WQAQ-NEWARK-297 1.00 a. m.—Calvary morning services, 3.30 p. m.—Inspiration hour. 7.30 p. m.—Calvary evening services.

WRC-WASHINGTON-140 WRC-WASHINGTON-440

12.00 m — Service from Vermont Avenue Disciples Church

1:30 p m.— To 3:00 p m — Same as WZZ

3.00 p m — To 4:00 p m.— Same as WEAP.

4.00 p m.— To 5:00 p m.— Same as WZAP.

5.00 p m — Service from Washington Cathedral.

6.00 p m.— To 7:30 p m — Same as WEAP.

7.30 p m.— To 7:30 p m.— Same as WEAP.

7.30 p m.— To 9:15 p m.— Same as WEAP.

9.15 p m.— To 10:15 p. m.— Same as WEAP.

10.15 p m.— To 10:15 p. m.— Same as WEAP.

10.10 p m.— To 10:15 p m.— Same as WEAP.

10.10 p m.— To 10:15 p m.— Same as WEAP.

WTAG-WORCESTER-317 4 00 p m.—National Sunday forum.
6.00 p. m.—To 7 30 p m.—Same as WEAF
7:30 p. m.—Worcester Drama League.
8:00 p. m.—Mixed quartet.
8:00 p. m.—Trio. 8:30 p. m.—Trio. 9:00 p. m.—Same as WJAR 9:15 p. m.—Orchestral players. 9:44 p. m.—Correct time. 9:45 p. m.—Same as WJAR. 10:15 p. m.—Same as WJAR. 10:45 p. m.—News bulletins.

MICROPHONIC NOISES

Alr Vibration fletween Speaker and Tubes Main Cause. In some sets there is a vibration of the tubes in the set, causing a howling sound that gradually grows louder and ouder. It cannot be stopped except by turning off the set for a moment or by WBAL—BALTIMORE—233.

2.00 p. m.—To 4 00 p. m.—Bame as WJZ.
4.00 p. m.—Michael Weiner, violinist, and Le Roy Evans, pianist.

4.00 p. m.—Bame as WJZ.
5.00 p. m.—Uncle Ed and his dream chil5.00 p. m.—On public extension of the tubes.

This is usually caused by tubes have mounted in sockets fastened directare mounted in sockets fastened directare mounted in sockets fastened directolding the hands on some of the tubes. sockets are on rubber strips or springs The loud-speaker should be moved as

ar away from the set as possible to ninimize this trouble, for even when the noise itself has been stopped, the tendency may still be present and will cause annoying distortion on certain tones in music.

As a last resort, in the case of a storage battery type act, the 112A type of tube may be used as the detector, in place of a 201A type. Being more heavily

constructed, this tube is less affected by Cleaning the Set In order to restore an old set to its original and efficient operating state, the interior should be free from dust and dirt. Collections of dust and carbon on the insulation may form a leaking path across the insulation that will cut down the power of the circuits to a consider-able extent. Clean all parts with an airblower or a new dust rag. Wipe out all the dust that has accumulated with a dry rag and polish the insulation. Never use water or any other liquid for remov-

ing dirt from any of the parts. A Complete Line of MAJESTIC RADIOS At Easy Terms , AT THE SIGN OF THE BIG CLOCK

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THE PROVIDENCE SUNDAY JOURNAL, JUNE 30, 1929

#### BUREAU REVEALS Vagrant Waves of Interest **CAUSES OF FADING** to Fans

A leading broadcasting official has hit upon the idea of lighting effects in studios to stimulate the work of art-ists. These Determined by Extended Series of Observations

five radio sets in his chatesu at Lake ener gets it in his loud-speaker or ear-Hopatong, N. J. Indirect Ray from Station Indergoes Variations of Intensity Hopatcong, N. J. During Course Through I pper Atmosphere on its Way to Hecelving Antenna.

Some of the principal causes of short period radio fading as determined by an extended series of observations on signals from several stations have been set forth by the Bureau of Standards as fol-

Considerable fading is caused by the fact that the indirect ray from a broadeasting station undergoes variations of intensity during its course through the upper atmosphere on its way to the recelving antenna. In the case of near-by stations much fading is caused by interference between ground and reflected rays; direction shifts are responsible for certain types of fading, no proof of fad-ing caused by fluctualing height of the ionized layer is found, but evidence of refraction of the indirect ray from a rising layer was found during the sun-

During Sunset Period Rotation of the pinne of polarization of the ray reflected from the upper at-mosphere is indicated as the cause of much fading, particularly during the sunset period; reflections by multiple paths are shown by a periodic type of fading superposed on the main intensity variations: the rapid periodic type of fading noted in a previous investigation as occurring during the sunset period or transmissions from a selected station has been found to be quite common it the reception from two other stations The newer data point toward rotation of the plane of polarization of rays arriving from the upper atmosphere rather than to interference as a cause. The method consisted in selecting

particular broadcasting station and making simultaneous graphic records of its transmission as received by different types of antennas attached to duplicate receiving sets and recording systems
No Artificial QRM All observations were made at the bureau's field station located at Kensington. Md., in a position practically free from man-made interference and

distorting influences. Observations were concentrated largely on two stations, but less frequent records were made in transmissions from other stations involving frequencies of 550 to 1480 kilo-cycles and direct transmission paths of eight to 930 miles. These observations have been mad ver a period of nearly a year and a half. The investigation was directed particularly to those changes of inten-

alty in the receiving antenna which range in period from a few seconds to

lor.

several minutes between peaks.

 $M_{ajestic}$ 

Radio















A short antenna is more selective has been given to this phase of the

About 29 out of each 100 homes in th

The new radio centre of the United States is at Bolling Field in Washington.

The War Department hook-up controls

Improved acoustics in broadcasting quently been applied to former President.

"Silent Cal" is a term that has trestented a new type of program for his broadcasts from 2LO. London. He sings the dent Coolidge, yet his voice has been heard by more persons than that of any other President.

"Silent Cal" is a term that has trestented a new type of program for his broadcasts from 2LO. London. He sings an original Hebrew chant, extolling the charms of the various clients who seek his services as a marriage broker—in his services a

Majestic Cabinets are

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United States have receiving sets.

212 land stations.

than a long one. Owners who are trou-bled with lack of fine tuning should not

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uralness in the interpretation of their

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has regulations governing broadcasting

In the large European countries, including the United Kingdom and Cerman

broadcasting stations are general owned and operated by the national government; Sweden grants a concession

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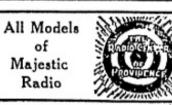
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