

# List of Broadcast Stations of the U. S. and Canada in Order of Wave-Lengths

Compiled By E. F. WARREN

**222 METERS—1350 KILOCYCLES**  
WHAG Cincinnati, Ohio. University of Cincinnati.

**224 METERS—1339 KILOCYCLES**  
KFBL Everett, Washington. Leese Bros.  
KFGV Utica, Neb. Heidebreder Radio Supply Co.  
KFJV Dexter, Iowa. Thomas H. Warren.  
KFKQ Conway, Ark. Conway Radio Laboratory.  
KFOB Minneapolis, Minn. Glenwood Technical Assoc.  
KFOD Wallace, Idaho. The Radio Shop.  
KFPB Seattle, Wash. Edwin J. Brown.  
WBBU Monmouth, Ill. Jenks Motor Sales.  
WIAJ Neenah, Wis. Fox River Valley Radio Supply Co.  
WRAF La Porte, Indiana. Radio Club, Inc.

**226 METERS—1326 KILOCYCLES**  
KFFR Sparks, Nevada. Jim Kirk.  
KFFZ Dallas, Texas. Al. G. Barnes Amusement Co.  
KFGO Boone, Iowa. Cray Hardware Co.  
KFHD St. Joseph, Missouri. Utz Electric Co.  
KFIU Juneau, Alaska. Alaska Elec. Light & Power Co.  
KFJW Towanda, Kansas. Le Grand Radio Co.  
KFOR David City, Nebraska. David City Tire & Elec. Co.  
KFOY St. Paul, Minn. Beacon Radio Service.  
WABU Camden, New Jersey. Victor Talking Mach. Co.  
WBBM Lincoln, Ill. Frank Atlas Produce Co.  
WBCI Bemis, Tenn. Nicoll, Duncan & Rush.  
WIAQ Marion, Ind. Chronicle Publishing Co.  
WKAN Montgomery, Alabama. United Battery Service Co.  
WTAQ Oseco, Wis. S. H. Van Gordon & Son.  
WTAY Oak Park, Illinois. Oak Leaves.  
WWAB Trenton, New Jersey. Hoening, Severn & Co.

**227 METERS—1329 KILOCYCLES**  
WBBZ Indianapolis, Ind. Noble B. Watson.  
WWAE Joliet Illinois. Alamo Dance Hall.

**229 METERS—1310 KILOCYCLES**  
KFFO Hillsboro, Oregon. Dr. E. H. Smith.  
KFHX Hutchinson, Kansas. Robert Nelson.  
KFJX Cedar Falls, Iowa. Iowa State Teachers' College.  
KFLV Rockford, Ill. Rev. A. T. Frykman.  
KSS Long Beach, Calif. Prest & Deon Radio Elec. Co.  
WCBM Baltimore, Md. Charles Swarz.  
WID Granville, Ohio. Dennison University.  
WOAR Kenosha, Wis. H. P. Lundskow.  
WSAN Allentown, Penna. Allentown Radio Club.

**231 METERS—1298 KILOCYCLES**  
KFER Fort Dodge, Iowa. Auto Electric Service Co.  
KFLY Fargo, N. D. Fargo Radio Supply Co.  
KFMT Minneapolis, Minn. Dr. Geo. W. Young.  
KFNZ Burlingame, Calif. Royal Radio Co.  
KFOT Wichita, Kansas. College Hill Radio Club.  
WHAR Atlantic City, New Jersey. Paramount Radio & Elec. Co.  
WLAX Greencastle, Ind. Greencastle Community Broadcasting.  
WNAR Butler, Missouri. C. C. Rhodes.  
WRAH Providence, Rhode Island. Stanley N. Read.  
WTAX Streator, Illinois. Williams Hardware Co.

**233 METERS—1287 KILOCYCLES**  
KFJJK Bristol, Oklahoma. Delono Radio & Electric Co.  
KFOZ Fort Smith, Ark. Leon Hudson Real Estate Co.  
WRAZ Newark, New Jersey. Radio Shop of Newark.  
WSAY Port Chester, New York. Irving Austin Ch. of Com.

**234 METERS—1281 KILOCYCLES**  
KFGL Arlington, Oregon. Arlington Garage.  
KFIL Lonsberg, Kansas. Windisch Electric Farm Eq. Co.  
KFKZ Colorado Springs, Colo. Nassom Bros. Radio Co.  
KFLD Franklinton, Louisiana. Paul E. Greenlaw.  
KFNC Corsicana, Texas. Alonzo Monk, Jr.  
KFNV Santa Rosa, Calif. L. A. Drake.  
KFOL Marengo, Iowa. Leslie M. Schaffbush.

KFON Long Beach, Calif. Echophone Radio Shop.  
KFOV Sioux City, Iowa. Davis Elec. Corp.  
WABN La Crosse, Wis. Waldo Q. Grover.  
WABW Wooster, Ohio. The College of Wooster.  
WBBD Reading, Penna. Barbey Battery Service.  
WBBI Indianapolis, Ind. Dudley Andrews.  
WBBT Philadelphia, Pa. Lloyd Bros.  
WDM Washington, D. C. Church of the Covenant.  
WFAB Syracuse, New York. C. F. Woese.  
WIAF New Orleans, Louisiana. G. A. De Cortin.  
WIK McKeesport, Penna. K & L. Electric Co.  
WLAH Syracuse, New York. Samuel Woodworth.  
WQAC Amarillo, Texas. E. B. Gish.

**236 METERS—1270 KILOCYCLES**  
KFLU San Benito, Texas. Rio Grande Radio Supply House.

TABLE OF NUMBER OF STATIONS  
WORKING ON EACH WAVE-LENGTH

Wave-Lengths in Meters.	Number of Stations.	Wave-Lengths in Meters.	Number of Stations.	Wave-Lengths in Meters.	Number of Stations.	Wave-Lengths in Meters.	Number of Stations.	Wave-Lengths in Meters.	Number of Stations.	Wave-Lengths in Meters.	Number of Stations.	Wave-Lengths in Meters.	Number of Stations.
222	1	252	14	294	1	395	3	448	1				
224	10	254	16	309	2	400	13	450	5				
226	16	256	3	310	1	405	2	455	2				
227	2	258	12	312	1	406	1	462	1				
229	9	261	18	314	1	410	9	469	3				
231	10	263	9	319	1	411	2	476	3				
233	4	265	1	326	1	417	2	484	1				
234	20	266	11	330	1	420	3	492	3				
236	13	268	13	337	1	421	1	500	3				
238	3	270	7	341	2	423	1	509	3				
240	18	273	13	345	1	425	2	517	2				
242	9	275	11	360	163	429	1	526	1				
244	12	278	7	370	2	430	4	536	1				
246	10	280	23	380	2	435	2	546	1				
248	11	283	23	385	1	440	6						
250	6	286	12	390	3	441	1						

KFNH Springfield, Mo. State Teachers' College.  
KFOC Whittier, Calif. First Christian Church.  
WCBP Pittsburgh, Pa. Paul J. Miller.  
WCBG Pascagoula, Miss. Howard S. Williams.  
WCBQ Nashville, Tenn. First Baptist Church.  
WFAH Port Arthur, Texas. Electric Supply Co.  
WNAV Knoxville, Tennessee. People's Tele. & Tel. Co.  
WPAR Beloit, Kansas. Ward Battery & Radio Co.  
WQAW Washington, D. C. Catholic Univ. of Amer.  
WRAN Waterloo, Iowa. Blackhawk Elec. Co.  
WTAJ Portland, Me. The Radio Shop.  
WWAF Camden, N. J. Galvin Radio Supply Co.

**238 METERS—1260 KILOCYCLES**  
KFCB Phoenix, Ariz. Nielson Radio Supply Co.  
KFPG Los Angeles, Calif. Garretson & Dennis.  
WRAW Reading, Penna. Avenue Radio Shop.

**240 METERS—1250 KILOCYCLES**  
KFBB Boise, Idaho. Jenkis Furniture Co.  
KFIX Independence, Mo. Reor. Ch. of Jesus Christ.  
KFLP Cedar Rapids, Iowa. Everett M. Foster.  
KFLX Galveston Tex. George R. Clough.  
KFMU San Marco, Texas. Stevens Bros.  
KFNL Pasco Robles, Calif. Radio Broad.  
KFNV Santa Rosa, Calif. L. A. Drake.  
KFOF Marshfield, Ore. Rohrer Elec. Co.  
KFOQ Galveston, Texas. Ora William Chancellor.  
WABH Sandusky, Ohio. Lake Shore Tire Co.  
WABI Bangor, Maine. Bangor Railway & Elec. Co.  
WBBA Newark, Ohio. Newark Radio Laboratories.  
WBBG Mattapoisett, Mass. Irving Vermilya.

WCAT Rapid City, So. Dak. So. Dakota Sch. of Mines.  
WKAD East Providence, R. I. Chas. Looff.  
WOAX Trenton, New Jersey. F. J. Wolff.  
WOAF Sandusky, Ohio. Sandusky Register.  
WTAN Mattoon, Ill. Orndorf Radio Shop.

**242 METERS—1239 KILOCYCLES**  
KFIQ Yakima, Wash. Yakima Valley Broadcast'g Assn.  
KFJL Ottumwa, Iowa. Hardscog Mfg. Co.  
WABY Philadelphia, Pa. John Magaldi, Jr.  
WCBH Oxford, Miss. University of Mississippi.  
WGV New Orleans, La. Interstate Elec. Co.  
WOAV Erie, Penna. Pennsylvania National Guard.  
WQAD Waterbury, Conn. The Whitall Electric Co.  
WRAV Yellow Springs, Ohio. Antioch College.  
WTAP Cambridge, Ill. Cambridge Radio & Elec. Co.

**244 METERS—1229 KILOCYCLES**  
KDPT San Diego, Calif. Southern Electric Co.  
WABN La Crosse, Wis. Ott Radio, Inc.  
WABS Newark, New Jersey. Essex Mfg. Co.  
WBAN Paterson, New Jersey. Wireless Phone Corp.  
WBBR Rossville, N. Y. City. People's Pulpit Association.  
WCBJ Jennings, La. J. C. Maus.  
WDAY Fargo, N. Dakota. Radio Equipment Corp.  
WNAX Yankton, So. Dakota. Dakota Radio Apparatus Co.  
WRAM Galesburg, Ill. Lombard College.  
WSAG St. Petersburg, Florida. Loran V. Davis.  
WTAT Boston, Mass. Edison Elec. Illuminating Co.  
WWAO Houghton, Mich. Mich. College of Mines.

**246 METERS—1219 KILOCYCLES**  
KFID Tola, Kansas. Ross Arbuckle's Garage.  
KFJY Port Dodge, Iowa. Tunwall Radio Co.  
KFOJ Moberly Mo. Moberly High School Radio Club.  
WBBE Syracuse, New York. Alfred R. Macey.  
WBBH Port Huron, Mich. J. Irving Bell.  
WBBP Petoskey, Mich. Petoskey High School.  
WCAZ Carthage, Ill. Carthage College.  
WDBF Youngstown, Ohio. Robert G. Phillips.  
WMAP Easton, Penna. Utility Battery Service Co.  
WSAL Indianapolis, Ind. Franklin Electric Co.

**248 METERS—1209 KILOCYCLES**  
KFDO Boseman, Mont. H. Everett Cutting.  
KFGD Chickasha, Oklahoma. Chickasha Radio & Elec. Co.  
KFJB Marshalltown, Iowa. Marshall Electric Co.  
KFLB Menominee, Mich. Mich. Signal Elec. Mfg. Co.  
KFOX Omaha, Neb. Board of Education, Tech. High.  
KMJ Fresno, Calif. San Joaquin Light & Power Corp.  
WBBV Johnstown, Pa. Johnstown Radio Co.  
WGAL Lancaster, Pa. Lancaster Elec. Supply & Cons. Co.  
WRAL St. Croix Falls, Wis. Northern States Power Co.  
WSAH Chicago, Ill. A. G. Leonard, Jr.  
WTAB Fall River, Mass. Fall River Daily Herald.

**250 METERS—1200 KILOCYCLES**  
KFGX Orange, Texas. First Presbyterian Church.  
KFMZ Roswell, N. M. Roswell Broadcasting Club.  
WBBO Rogers, Mich. Mich. Limestone & Chemical Co.  
WBBS New Orleans, La. First Baptist Church.  
WJAS Pittsburgh, Penna. Pittsburgh Radio Supply House.  
WMAV Auburn, Ala. Alabama Polytechnic Inst.

**252 METERS—1190 KILOCYCLES**  
KFCY Le Mars, Iowa. Western Union College.  
KFDD Boise, Idaho. St. Michael's Cathedral.  
KFHA Gunnison, Cal. Colorado State Normal School.  
KFIO Spokane, Wash. North Central High School.  
KFJF Oklahoma City, Okla. National Radio & Mfg. Co.  
KFJI Astoria, Oregon. E. E. Marsh & Liberty Theater.

(Continued on page 376)



Bedtime Stories

Morning Exercises

WHEN you own a Radiodyne the world's foremost entertainers and educators serve you. With this efficient receiving set you can bring operas, sermons, lectures, dance music, etc., right into your home clear and distinct on loud speaker no matter where broadcasted or where you live.

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Socket for  
Antenna

**Radiodyne**

Uses Outside  
or Inside Aerial  
For Daytime

"I have no outside antenna. I just plug into the light socket. Picked up Omaha last Sunday morning at ten o'clock when the temperature was 95 and the sun shining."

FRANK WILLIAMS, Winona, Minn.

"Received Cuba, Canada, New York and California on loud speaker with 70 foot ribbon antenna in attic. Also have a single 75 foot wire outside for daytime, volume and distance."

L. G. GEORGE, Fairmount, Ill.

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Every radio fan will be interested in this new type receiver.

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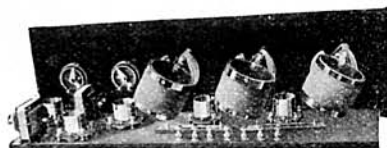
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Every part that is needed to BUILD an A & P NEUTRODYNE is included in the kit at this REMARKABLY LOW PRICE.

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of only hearing LOCAL stations on your Crystal Set? There's music on your aerial every night from stations far away. If you want to hear it without buying a tube set, WRITE ME TODAY.

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595 South Volusia

Wichita, Kansas

## The Myth of Summer Lightning

(Continued from page 326)

thrown down, connecting the antenna directly to the ground. In other words, the lightning switch converts the antenna into a lightning-rod when the radio set is not in use and the house on which it is erected has the full protection which a lightning-rod affords. Such a switch may be purchased in any electrical store for about 25 cents.

The same protection may be had while receiving or using the radio set by means of a simple device called a lightning arrester. There are a number of devices of this sort on the market but whatever device is used it should be one approved by the Board of Fire Underwriters. Most of these arresters consist of a small gap formed by two metal rods separated a short distance in a vacuum. The two terminals are connected as in Fig. 2. The tiny gap in the lightning arrester is connected across the antenna and ground posts of the receiving set, but this gap offers a tremendous resistance to radio currents which, therefore, flow through the receiver rather than through the lightning arrester. The lightning discharge is entirely different from a radio current and it flows very easily through the arrester to the ground, whereas the radio set offers to lightning a very great resistance. It, therefore, takes the path of least resistance and goes through the arrester while one is receiving. In other words the lightning arrester serves to by-pass or divert the lightning discharges through the arrester and away from the radio receiver, to the ground.

In general, if the lightning arrester is used alone, sufficient and ample protection is afforded by it against lightning. Both lightning arrester and lightning switch may be used, as shown in Fig. 3.

The number of lightning strokes doing damage is extremely rare considering the total number of strokes each year. Railroad accidents, subway accidents and so on occur, yet one would not think of discontinuing to ride on a subway or railroad train.

### List of Broadcast Stations

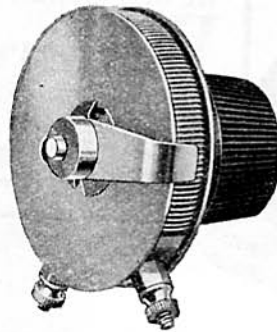
(Continued from page 346)

KGB	Tacoma, Wash.	Tacoma Daily Ledger.
KXD	Modesto, Calif.	Modesto Herald Pub. Co.
WABO	Rochester, New York.	Lake Ave. Baptist Ch.
WABT	Washington, Pa.	Holliday-Hall Radio Eng.
WBBO	Pawtucket, R. I.	Frank Crook.
WIAF	Rockford, Ill.	Joslyn Auto Co.
WIAI	Springfield, Missouri.	Heer Stores Co.
WTAL	Toledo, Ohio.	Toledo Radio & Electric Co.
254 METERS—1180 KILOCYCLES		
KFGC	Baton Rouge, La.	Louisiana State University.
KFJZ	Fort Worth, Texas.	Texas National Guard.
KFLR	Albuquerque, N. M.	University of New Mexico.
KFMB	Little Rock, Ark.	Christian Churches of Little Rock.
KFNG	Coldwater, Miss.	Wooten's Radio Shop.
KFOU	Richmond, Calif.	Hommel Mfg. Co.
WAAN	Columbia, Mo.	University of Missouri.
WABM	Saginaw, Mich.	F. E. Doherty.
WIAD	Ocean City, N. J.	Ocean City Yacht Club.
WJAK	Greentown, Ind.	Rev. Clifford L. White.
WKAV	Laconia, N. H.	Laconia Radio Club.
WLAV	Pensacola, Fla.	Electric Shop, Inc.
WMAH	Lincoln, Neb.	General Supply Co.
WMAW	Wahpeton, N. D.	Wahpeton Elect. Co.
WSAR	Fall River, Mass.	Doughty & Welch Elec. Co.
WTAQ	Ossau, Wis.	S. H. Van Gordon & Son.
256 METERS—1171 KILOCYCLES		
KNV	Los Angeles, Calif.	Radio Supply Co.



# A new RHEOSTAT

with immovable coils



## Centralab ADJUSTABLE GRID LEAK

gives smooth unbroken adjustment over 900 degrees—2½ turns of the knob—and holds the resistance value at which the knob is set.

No. 106—(without condenser) . . . \$1.25  
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## Centralab NON-INDUCTIVE POTENTIOMETER

has no wire-wound resistor and assures noiseless operation of the set.

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No. 111—2000 ohms . . . \$1.75

The coils of the new Centralab Rheostat are made of bright, non-corroding wire, and are firmly clamped between and imbedded in insulating discs so they cannot move. This eliminates the noise in the set caused by lateral movement of coils away from and towards each other as the contact arm passes over them. It also maintains a uniform spacing between windings, giving smooth, even regulation and eliminating dead spots.

The contact arm is made of sturdy, spring tempered phosphor bronze, and is positively locked to the shaft. The contact shoe slides over the resistor at a tangent and cannot catch. The rheostat is attractive in appearance and substantial in construction. All metal parts except wires are of brass, heavily nickel plated. The knob may be adjusted flush with the panel or replaced by any standard dial. Single hole mounting. Firm, positive contacts.

No. 206—6 ohms maximum resistance . . . \$1.25

No. 230—30 ohms resistance . . . \$1.25  
F.O.B. Milwaukee. Write for literature.

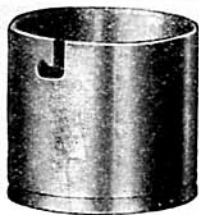
TO JOBBERS AND DEALERS: The trade mark of products of the Central Radio Laboratories has been changed from **CRL** to **Centralab**

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PRECISION COIL COMPANY  
209-D Centre Street New York

KUY El Monte, Calif. Coast Radio Co.  
WMAL Trenton, N. J. Trenton Hardware Co.

### 258 METERS—1162 KILOCYCLES

KFCZ Omaha, Neb. Omaha Central High School.  
KFJR Stevensville, Montana. Ashley C. Dixon & Son.  
KGY Lacey, Wash. St. Martin's College.  
KNV Los Angeles, Calif. Radio Supply Co.  
WBBJ West Palm Beach, Fla. Niel Electric Co.  
WDBC Lancaster, Penna. Kirk Johnson & Co., Inc.  
WFAT Sioux Falls, S. D. New Columbus College.  
WHAK Clarksburg, West Virginia. Roberts Hdwe. Co.  
WQAL Mattoon, Ill. Coles Co. Telephone & Teleg. Co.  
WQAV Greenville, S. C. Huntington & Guerny, Inc.  
WSAZ Pomeroy, Ohio. Chase Elec. Shop.  
WTAG Providence, R. I. Kern Music Co.

### 261 METERS—1149 KILOCYCLES

KDZR Bellingham, Wash. The Bellingham Pub. Co.  
KFEX Minneapolis, Minn. Augsburg Seminary.  
KFHH Neah Bay, Wash. Ambrose A. McCue.  
KFLH Salt Lake City, Utah. Erickson Radio Co., Inc.  
KFLO Little Rock, Ark. Bizzell Radio Shop.  
KFMR Sioux City, Iowa. Morningside College.  
KFNY Helena, Mont. Montana Phonograph Co.  
KFOO Salt Lake City, Utah. Latter Day Saints University.  
KLN Delmonte, Calif. Monterey Electric Shop.  
WABO Haverford, Pa. Haverford College Radio Club.  
WBL Anthony, Kans. T. & H. Radio Co.  
WCAV Milwaukee, Wis. Kesslemon O'Driscoll Music House.  
WDAK Hartford, Conn. The Courant.  
WFAV St. Louis, Mo. St. Louis University.  
WMAV Altoona, Penna. Ernest C. Albright.  
WMAC Cazenovia, New York. C. R. Meredith.  
WMU Washington, D. C. Doubleday Hill Elec. Co.  
WSAD Providence, R. I. J. A. Foster Co.

### 263 METERS—1140 KILOCYCLES

KFEV Casper, Wyo. Casper Radio Club.  
KFMO Fayetteville, Ark. Univ. of Arkansas.  
KNT Aberdeen, Wash. Gray's Harbor Radio Co.  
WAAM Newark, N. J. I. R. Nelson Co.  
WABV Nashville, Tenn. John H. DeWitt, Jr.  
WCAK Houston, Tex. Alfred P. Daniel.  
WCBE New Orleans, La. Uhalt Radio Co.  
WDAG Amarillo, Texas. J. Laurence Martin.  
WSAP New York City. City Temple.

### 265 METERS—1131 KILOCYCLES

WABZ New Orleans, La. The Coliseum Place Baptist Church.

### 266 METERS—1127 KILOCYCLES

KFHF Shreveport, La. Central Christian Church.  
KFMW Houghton, Mich. M. G. Satern.  
KFNF Shenandoah, Iowa. Henry Field Seed Co.  
WABA Lake Forest, Ill. Lake Forest University.  
WABB Harrisburg, Pa. Dr. George B. Lawrence.  
WARP Dover, Ohio. Robert F. Weinig.  
WCBK St. Petersburg, Fla. E. Richard Hull.  
WCBN Harrison, Ind. James P. Boland.  
WNAL Omaha, Neb. R. J. Rockwell.  
WOAC Lima, Ohio. Maus Radio Co.  
WQAS Lowell, Mass. Prince Walter Co.

### 268 METERS—1119 KILOCYCLES

KFLE Denver, Col. National Educational Service.  
KFOP Dallas, Texas. Willson Construction Co.  
WAAB New Orleans, La. Valdemar Jensen.  
WBBY Charleston, S. C. Washington Light Int.  
WCAG New Orleans, La. Clyde R. Randall.  
WDAH El Paso, Texas. Trinity Methodist Church South.  
WJAM Cedar Rapids, Iowa. H. F. Paar.  
WMAZ Macon, Georgia. Mercer University.  
WPAJ New Haven, Conn. Doolittle Radio Corp.  
WRAX Gloucester City, N. J. Flaxon's Garage.  
WSAT Plainview, Texas. Plainview Electric Co.  
WSAX Chicago, Ill. Chicago Radio Laboratory.  
WTAF New Orleans, La. Louis J. Gallo.

### 270 METERS—1110 KILOCYCLES

KDPM Cleveland, Ohio Westinghouse Elec. & Mfg. Co.  
KDZE Seattle, Wash. The Rhodes Dept. Store.  
KFAU Boise, Idaho. Boise High School Daily.



## for MUSICAL Amplification amplify with All-Americans!

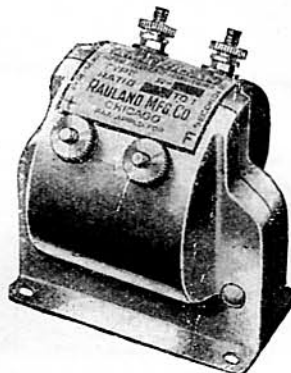
The *naturalness* with which All-American Transformers amplify music or voice, is in no small measure responsible for their outstanding popularity. As the horn of a fine phonograph builds up tone volume without distorting the various sounds introduced into it by the reproducer, so All-American Transformers make more audible, but none the less real and enjoyable, the programs taken from the air. There is *musical* quality to All-American amplification for the reason that All-Americans are designed as musical instruments. Thus they improve the performance of any set.

### Again All-American Leads!

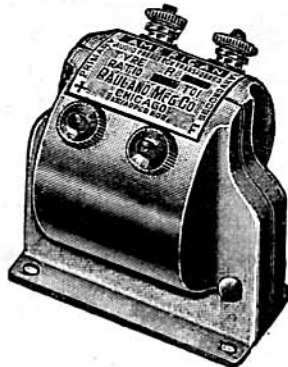
The unprecedented success scored by the recently announced All-American Long Wave Intermediate Frequency Transformer (15-75 KC) is shortly to be augmented by an All-American tuned 30-KC radio frequency transformer and a new All-American Radio Frequency Coupler also suitable for the Super Heterodyne. Watch for these—and the new All-American Low Wave Radio Frequency Transformers!

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The most efficient audio frequency amplifiers are the All-American, regardless of whether employed in the Super Heterodyne, Neutrodyne or other circuits. 5-1, \$1.50. 5-1, \$1.75. 10-1, \$1.75.

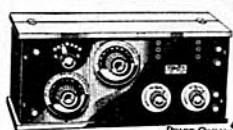


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KYQ Honolulu, H. T. Electric Shop, Levres & Joaquin Co.  
WABR Toledo, Ohio. Scott High School.  
WBBF Atlanta, Ga. Georgia School of Technology.

### 273 METERS—1098 KILOCYCLES

KFIZ Fond du Lac, Wis. Daily Commonwealth.  
KFKA Greeley, Colo. Colorado State Teachers' College.  
KFLZ Atlantic, Ia. Atlantic Automobile Co.  
KJQ Stockton, Calif. Gould The Light Man.  
WEAN Providence, R. I. The Shepard Store.  
WEB St. Louis, Mo. The Benwood Co., Inc.  
WFAF Poughkeepsie, N. Y. H. C. Spratley Radio Co.  
WJH Washington, D. C. Wm. P. Boyer Co.  
WOAG Belvedere, Ill. Apollo Theatre.  
WPAZ Charleston, W. Va. Dr. John A. Koch.  
WRW Tarrytown, N. Y. Tarrytown Radio Research Lab.  
WSL Utica, N. Y. J. & M. Electric Co.  
WWI Dearborn, Mich. Ford Motor Co.

### 275 METERS—1090 KILOCYCLES

KFFY Alexandria, La. Pincus & Murphy, Inc.  
KFHS Lihue, Hawaii. Clifford J. Dow.  
KFMS Duluth, Minn. Freimuth Dept. Store.  
KRE Berkeley, Calif. Daily Gazette.  
WABG Jacksonville, Fla. Arnold Edwards Piano Co.  
WBBN Wilmington, N. C. A. B. Blake.  
WFAV Lincoln, Neb. University of Nebraska.  
WMAJ Kansas City, Mo. Kansas City Daily Drovers Telegram.  
WNAP Springfield, Ohio. Wittenberg College.  
WQAE Springfield, Vt. Moore Radio News Station.  
WSAW Canandaigua, N. Y. John Long, Jr.

### 278 METERS—1078 KILOCYCLES

KDZF Los Angeles, Calif. Auto. Club of So. California.  
KFBC San Diego, Calif. W. K. Azbill.  
KFFX Omaha, Neb. The McGraw Co.  
KFSG Los Angeles, Calif.  
WDZ Tuscola, Ill. James L. Bush.  
WIAK Omaha, Neb. Daily Journal Stockman.  
WNAC Boston, Mass. The Shepard Stores.

### 280 METERS—1071 KILOCYCLES

KDYM San Diego, Calif. Savoy Theater.  
KFAR Hollywood, Calif. Studio Lighting Service Co.  
KFAW Santa Anna, Calif. Radio Den.  
KFHB Hood River, Ore. Rialto Theater.  
KFJM Grand Forks, N. D. University of North Dakota.  
KFJO Grand Forks, N. D. Valley Radio Div. of Elec. Cons. Co.  
WCAD Canton, N. Y. St. Lawrence University.  
WCAS Minneapolis, Minn. Wm. H. Dunwoody Industrial Inst.  
WBCA Allentown, Penna. Chas. W. Heimback.  
WCBC Ann Arbor, Mich. University of Michigan.  
WCBL Houlton, Me. Northern Radio Mfg. Co.  
WEAA Flint, Mich. Frank D. Fallain.  
WEAH Wichita, Kans. Wichita Board of Trade.  
WHAD Milwaukee, Wis. Marquette University.  
WJAN Peoria, Ill. Peoria Star.  
WKAR East Lansing, Mich. Michigan Agricultural College.  
WKAY Gainesville, Ga. Breneau College.  
WMAY St. Louis, Mo. Kingshighway Presbyterian Church.  
WQAN Scranton, Penna. Radio Sales Corp.  
WTAR Norfolk, Va. Reliance Electric Co.  
WTAW College Station, Texas. Agri. & Mech. College of Texas.  
WWL New Orleans, La. Loyola University.

### 283 METERS—1060 KILOCYCLES

KFBK Sacramento, Calif. Kimball Upson Co.  
KFBU Laramie, Wyoming. Bishop N. S. Thomas.  
KFHR Seattle, Wash. Star Electric & Radio Co.  
KFKV Butte, Mont. F. F. Gray.  
KFLA Butte, Mont. Abner R. Wilson.  
KFMX Northfield, Minn. Carleton College.  
KFOH Portland, Ore. Radio Bungalow.  
KFZ Spokane, Wash. Doerr Mitchell Elec. Co.  
KJR Seattle, Wash. Northwest Radio Service Co.  
WABD Dayton, Ohio. Parkin High School.  
WABE Washington, D. C. Y. M. C. A.  
WABL Storrs, Conn. Connecticut Agricultural College.  
WBJL Richmond, Va. Grace Covenant Presb. Church.  
WEAJ Vermillion, S. D. Univ. of South Dakota.  
WHAH Joplin, Mo. Hafer Supply Co.  
WHAM Rochester, N. Y. University of Rochester.

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WHL Cleveland, Ohio. Warren R. Cox.  
WJAG Norfolk, Nebr. Norfolk Daily News.  
WOAP Kalamazoo, Mich. Kalamazoo College.  
WPAB State College, Pa. Pennsylvania State College.  
WOAM Miami, Fla. Electrical Equip. Co.  
WTAY Oak Park, Ill. Oak Leaves.  
WTAZ Lambertville, New Jersey. Thos. J. McGuire.

### 286 METERS—1048 KILOCYCLES

KFKB Milford, Kans. Brinkle-Jones Hospital Assn.  
KOP Detroit, Mich. Detroit Police Dept.  
WAAF Chicago, Ill. Chicago Daily Drivers Journal.  
WBR Butler, Penna. Pennsylvania State Police.  
WCAH Columbus, Ohio. Eutekin Electric Co.  
WCAU Philadelphia, Pa. Durham & Co.  
WEAI Ithaca, N. Y. Cornell University.  
WEAM North Plainfield, N. J. Borough of N. Plainfield.  
WMAN Columbus, Ohio. First Baptist Church.  
WNAN Syracuse, N. Y. Syracuse Radio Telephone Co.  
WPAL Columbus, Ohio. Superior Radio & Tel. Equip. Co.  
WTAS Elgin, Ill. Chas. E. Erkstein.

### 294 METERS—1020 KILOCYCLES

KFGZ Berrien Springs, Mich. Emanuel Missionary Col.

### 309 METERS—970 KILOCYCLES

WLW Cincinnati, Ohio. Crosley Mfg. Co.  
WSAI Cincinnati, Ohio. U. S. Playing Card Co.

### 310 METERS 967 KILOCYCLES

CHCE Victoria, B. C. West. Canada Radio Supply Co.

### 312 METERS—961 KILOCYCLES

KGO Oakland, Calif. General Elect. Co.

### 314 METERS—955 KILOCYCLES

CJCM Mont Joli, P. Q. Dr. J. L. P. Landry.

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WGR Buffalo, N. Y. Federal Tel. & Tele. Co.

### 326 METERS—920 KILOCYCLES

KDKA Pittsburgh, Pa. Westinghouse Elec. & Mfg. Co.

### 330 METERS—908 KILOCYCLES

KFAE Pullman, Wash. State College of Wash.

### 337 METERS—890 KILOCYCLES

WBZ Springfield, Mass. Westinghouse Elec. & Mfg. Co.

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CHYC Montreal, Que. Northern Elec. Co.  
KFKX Hastings, Neb. Westinghouse Elec. & Mfg. Co.

### 345 METERS—869 KILOCYCLES

WCBD Zion, Ill. Wilbur Glenn Voliva.

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KDYL Salt Lake City, Utah. Newhouse Hotel.

KDYQ Portland, Ore. Oregon Institute of Technology.

KDYW Phoenix, Ariz. Smith, Hughes & Co.  
KDYX Honolulu, Hawaii. Honolulu Star Bulletin.

KDZI Wanatche, Wash. Electric Supply Co.  
KDZQ Denver, Colo. Nicholas Academy of Dancing.

KFAD Phoenix, Ariz. McArthur Bros.  
KFAF Denver, Colo. Western Radio Corp.  
KFAJ Boulder, Colo. University of Colorado.

KFAN Mascon, Idaho. The Electric Shop.  
KFBE San Luis Obispo, Calif. R. H. Horn.  
KFBG Tacoma, Wash. First Presbyterian Church.

KFBS Trinidad, Colo. Trinidad Gas & Elec. Supply Co.

KFCF Walla Walla, Wash. Frank A. Moore.  
KFCH Billings, Mont. Electric Service Station.

KFCM Richmond, Calif. Richmond Radio Shop.

KFCP Ogden, Utah. Ralph W. Flygare.  
KFCV Houston, Texas. Fred Mahaffey, Jr.

KFDA Baker, Oregon. Adler's Music Store.  
KFDH Tucson, Ariz. University of Ariz.

KFDJ Corvallis, Oregon. Oregon Agricultural College.

KFDR York, Nebraska. Bullock's Hdwe. & Sporting Goods Store.

KFDV Fayetteville, Ark. Gilbrech & Stinson.  
KFDX Shreveport, La. First Baptist Church.

KFDY Brookings, S. D. S. D. State College.  
KFDZ Minneapolis, Minn. Harry O. Iverson.

KFEC Portland, Oregon. Meier S. Frank Co.  
KFEL Denver, Colo. Winner Radio Corp.

KFEQ Oak, Neb. J. L. Scroggin.  
KFEY Kellogg, Idaho. Bunker Hill & Sullivan Mining & Concentrating Co.

KFEZ St. Louis, Mo. Am. Soc. of Mech. Engineers.



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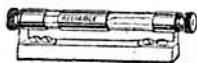
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Type 199.....3-4 Volts, .06 Ampere Amplifier and Detector  
Type 199.....3-4 Volts, .06 Ampere with Standard Base Amplifier and Detector  
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KFHJ Santa Barbara, Calif. Fallon & Co.  
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KGG Portland, Ore. Hallock & Watson Co.  
KGN Portland, Ore. Northwestern Mfg. Co.  
KGU Honolulu, Hawaii. Marion A. Mulrony.  
KHQ Seattle, Wash. Louis Wasmer.  
KJS Los Angeles, Calif. Bible Inst.  
KLS Oakland, Calif. Warren Bros. Radio Supply Co.  
KLZ Denver, Colo. Reynolds Radio Co.  
KMO Tacoma, Wash. Love Electric Co.  
KNX Los Angeles, Calif. Electric Lighting & Supply Co.  
KOB State College, N. M. N. M. College of Agriculture and Mechanical Arts.  
KQP Hood River, Ore. Apple City Radio Club.  
KQV Pittsburgh, Penna. Doubleday Hill Elec. Co.  
KQW San Jose, Calif. Chas. D. Herrold.  
KRW Seattle, Wash. First Presbyterian Church.  
KUO San Francisco, Calif. San Francisco Examiner.  
KUS Los Angeles, Calif. City Dye Works & Laundry Co.  
KWG Stockton, Calif. Portable Wireless Telephone Co.  
KYO Honolulu, Hawaii. Electric Shop.  
KZM Oakland, Calif. Western Radio Inst.  
KZN Salt Lake City, Utah. Desert News.  
KZV Wenatchee, Wash. Wenatchee Battery & Motor Co.  
WAAC New Orleans, La. Tulane University.  
WAAD Cincinnati, Ohio. Ohio Mechanical Inst.  
WAAW Omaha, Neb. Omaha Grain Exchange.  
WBAA West La Fayette, Ind. Purdue University.  
WBAO Decatur, Illinois. James Milliken University.  
WBAX Wilkes-Barre, Pa. John H. Stenger, Jr.  
WBS Newark, N. J. D. W. Moy, Inc.  
WBT Charlotte, N. C. Southern Radio Corp.  
WCAJ University Place, Neb. Neb. Wesleyan University.  
WCAL Northfield, Minn. Dept. of Physics, St. Olaf College.  
WCAM Villanova, Pa. Villanova College.  
WCAO Baltimore, Md. Sanders & Staymore Co.  
WCAR San Antonio, Texas. Alamo Radio Elec. Co.  
WCAV Little Rock, Ark. J. C. Dice Electric Co.  
WCK St. Louis, Mo. Stix, Baer & Fuller.  
WCM Austin, Texas. University of Texas.  
WDAE Tampa, Fla. Tampa Daily Times.  
WDAO Dallas, Texas. Automotive Electric Co.  
WDAP Chicago, Ill. Chicago Board of Trade.  
WDAS Worcester, Mass. Samuel A. Waite.  
WDAU New Bedford, Mass. A. H. Smith.  
WEAE Blacksburg, Virginia. Polytechnic Inst.  
WEAO Columbus, Ohio. Ohio State University.  
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WEAU Sioux City, Iowa. Davison Bros.  
WEAY Houston, Texas. Will Horwitz.  
WEV Houston, Texas. Hurlburt Still Electric Co.  
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WFAM St. Cloud, Minn. St. Cloud Daily Times.  
WFAN Hutchinson, Minn. Hutchinson Elec. Service Co.  
WFAQ Cameron, Mo. Missouri Wesleyan College.  
WGAN Pensacola, Fla. Cecil E. Lloyd.  
WGAQ Shreveport, La. Glenwood Radio Corp.  
WGAZ South Bend, Ind. South Bend Tribune.  
WGI Medford Hillside, Mass. Amer. Radio & Research Corp.  
WGL Philadelphia, Pa. Thomas F. J. Howlette.  
WHA Madison, Wis. University of Wisconsin.  
WHAB Galveston, Texas. Clark W. Thompson.  
WHAP Decatur, Ill. Otto & Kuhns.  
WHAU Wilmington, Del. Wilmington Elec. Spec. Co., Inc.  
WHN New York, N. Y. Loew's State Broadcasting Sta.  
WIAC Galveston, Texas. Galveston Tribune.  
WIAO Milwaukee, Wis. School of Engineering of Milwaukee.  
WIAS Burlington, Iowa. Home Electric Co.  
WIAU Le Mars, Iowa. American Trust & Savings Bank.  
WIL Washington, D. C. Continental Electric Supply Co.

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CFCQ Vancouver, B. C. Radio Specialties, Ltd.  
CFRC Kingston, Ont. Queens University.  
CKCE Toronto, Ont. Canadian Ind. Telephone Co.  
CKY Winnipeg, Man. Manitoba Telephone Co.

**455 METERS—659 KILOCYCLES**  
KFOA Seattle, Wash. Rhodes Dept. Store.  
WJZ New York City. Radio Corp. of America.

**462 METERS—649 KILOCYCLES**  
WCAE Pittsburgh, Pa. Kaufman & Baer Co.

**469 METERS—640 KILOCYCLES**  
KFI Los Angeles, Calif. Earl C. Anthony.  
WCAP Washington, D. C. Chesapeake & Potomac Tel. Co.  
WRC Washington, D. C. Radio Corp. of America.

**476 METERS—630 KILOCYCLES**  
WBAP Fort Worth, Texas. Fort Worth Star Telegram.  
WFAA Dallas, Texas. Dallas News and Dallas Journal.

**484 METERS—619 KILOCYCLES**  
WHAA Iowa City, Iowa. University of Iowa.  
WOC Davenport, Iowa. Palmer School of Chiropractic.

**492 METERS—609 KILOCYCLES**  
KGW Portland, Ore. Oregonian Publishing Co.  
WBAY New York City. Western Electric Co.  
WEAF New York City. American Tel. & Teleg. Co.

**500 METERS—599 KILOCYCLES**  
CYL Mexico City, Mex. La Casa de Radio.  
CYX Mexico City, Mex. Excelsior-Parker.  
WMC Memphis, Tenn. The Commercial Appeal.

**509 METERS—590 KILOCYCLES**  
KLX Oakland, Calif. Oakland Tribune.  
WIP Philadelphia, Pa. Gimbel Bros.  
WOO Philadelphia, Pa. John Wanamaker.

**517 METERS—580 KILOCYCLES**  
WCX Detroit, Mich. Detroit Free Press.  
WWJ Detroit, Mich. Detroit News.

**526 METERS—570 KILOCYCLES**  
WOAW Omaha, Neb. Woodmen of the World.

**536 METERS—560 KILOCYCLES**  
KYW Chicago, Ill. Westinghouse Elec. & Mfg. Co.

**546 METERS—549 KILOCYCLES**  
KSD St. Louis, Mo. St. Louis Post-Dispatch.

## Reflex Radio Receivers in Theory and Practice

(Continued from page 321)

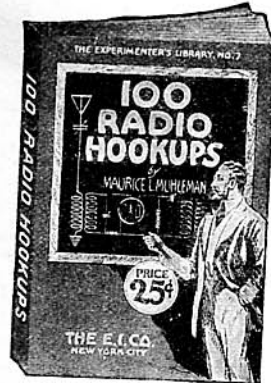
from the plate circuit. Across the secondary  $L_4$  are connected the crystal detector  $D$  and the primary  $T_1$  of the step-up transformer  $T_1 T_2$ , which is of a type generally known as step-up intertube transformers. The primary  $T_1$  may be shunted by a condenser  $C_4$  of .002 mfd. capacity, and is often done when a crystal detector is being used. The secondary  $T_2$  is connected in the grid circuit of the tube  $V_1$ , the condenser  $C_5$  acting as a short circuit of  $T_2$  in so far as radio-frequency currents are concerned.

## RADIO FREQUENCY POTENTIALS

The radio-frequency potentials communicated to the grid  $G_1$  of a tube  $V_1$  are amplified by the tube, the amplified currents passing through  $L_2$  and being passed on by inductive coupling to  $L_4$ ; the oscillations in  $L_4$  are detected by the crystal detector  $D$  and pulses pass through the primary  $T_1$  of the A. F. transformer  $T_1$ . Currents of an alternating nature are produced in the secondary  $T_2$ , and as the right-hand side of  $T_2$  is connected to the filament, and the left-hand side is connected, through the inductance  $L_2$  to the grid,

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