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BURGESS

Index of

RADIO

*Broadcasting
Stations*

*Record
&
Atlas*

Published by
BURGESS BATTERY COMPANY

Price 25¢



WORKS OF THE BURGESS BATTERY COMPANY

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PICTURE to yourself a great factory, functioning as an immense laboratory, in which machinery, chemicals, formulae, testing apparatus appear without end; where millions of batteries are built annually, under the direct management of men who have spent years in the making of efficient dry batteries and supervised by a man recognized as one of the foremost chemical engineers in the profession, and you will have a graphic mental picture of the great Burgess Factories at Madison, Wisconsin. It was more than twenty years ago that Mr. C. F. Burgess laid the foundation work for our dry batteries, and he is still actively engaged in the production of the batteries which bear his name.

To those who know and demand Burgess Radio, Flashlight or Ignition Dry Batteries, this brief word picture conveys a message none other can give. To those who are coming to know the Quality and Long Life of the Burgess Line, the batteries speak for themselves in no uncertain terms by their record of the past few years.

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When you next visit your dealer supply yourself from his stock of Burgess Batteries for Radio, Flashlight or Ignition service, knowing you will get a battery of quality, uniformity and dependability.

ASK ANY RADIO ENGINEER

United States Broadcasting Stations

Call Letters—Meters Wave Length—Location—Owner

KDEN 1713 Dearborn, Mich. Henry Ford.
KDEP 1713 Northville, Mich. Henry Ford.
KDKA 326-1817 E. Pittsburgh, Pa. Westinghouse Elec.
KDKF 200-600 N. Y. City. Seamen's Church.
KDLY 300-600 Sugarland, Texas. Sugarland Indus.
KDOW 360 New York City. Steamship America.
KDPH 1587 Detroit, Mich. Det. Edison Co.
KDPI 300-1625 Superior, Mich. Detroit Edison Co.
KDPJ 300-1625 Port Huron, Mich. Detroit Edison.
KDPM 270 Cleveland, O. Westinghouse Co.
KDPS 300-706-600 Baytown, Tex. Humble Oil & Ref.
KDPT 244 San Diego, Cal. So. Elect. Co.
KDPU 300-600 Cascade, Cal. So. Cal. Edison Co.
KDPV 300-600 Camp 60, Cal. So. Cal. Edison.
KDPW 300-600 Camp 61, So. Cal. Edison.
KDU 12100 Point Reyes, Cal. Radio Corp. of Am.
KDYL 360 Salt Lake City, Utah. Telegram Pub. Co.
KDYM 252 San Diego, Cal. Savoy Theatre.
KDYQ 360 Portland, Ore. Ore. Inst. of Technology.
KDYS 360 Great Falls, Mont. Tribune.
KDYW 360 Phoenix, Ariz. Smith, Hughes & Co.
KDYX 360 Honolulu, Hawaii. Star Bulletin.
KDZB 240 Bakersfield, Cal. F. E. Siefert.
KDZE 455 Seattle, Wash. The Rhodes Co.
KDZF 278 Los Angeles, Cal. So. Cal. Auto Club.
KDZI 360 Wenatchee, Wash. Electric Supply Co.
KDZK 226 Reno, Nev. Nevada Mach. & Elect. Co.
KDZQ 360 Denver, Colo. Nichols Academy of Music.
KDZR 261 Bellingham, Wash. Bellingham Pub. Co.
KDZT 360 Seattle, Wash. Seattle Radio Association.
KDZU 360 Denver, Colo. Western Radio Corp.
KDZV 360 Salt Lake, Utah. Cope and Cornwell Co.
KEB 360 San Francisco, Cal. Marine Exchange.
KEK Hillsboro, Ore. Federal Teleg. Co.
KET 13100 Bolinas, Cal. Radio Corp.
KEY 1650 Arroyo Camp, Cal. So. Cal. Edison Co.
KFAD 360 Phoenix, Ariz. McArthur Bros. Co.
KFAE 360 Pullman, Wash. State Col. of Washington.
KFAF 360 Denver, Colo. Western Radio Corp.
KFAJ 360 Boulder, Colo. University of Colorado.
KFAN 360 Moscow, Idaho. Electric Shop.
KFAP 360 Butte, Mont. Standard Pub. Co.
KFAR 280 Hollywood, Cal. O. K. Olesen.
KFAU 270-485 Boise, Idaho. High School.
KFAV 258 Venice, Cal. Abbott-Kinney Co.
KFAW 280 Santa Ana, Cal. Radio Den.
KFAZ 360 Medford, Ore. Virgin Radio Service.
KFBB 360 Harve, Mont. F. A. Buttrey & Co.
KFBC 252 San Diego, Cal. W. K. Azbill.
KFBE 360 San Luis Obispo, Cal. R. H. Horn.
KFBG 360 Tacoma, Wash. First Presbyterian Church.
KFBI 300-525-600 Los Angeles, Cal. Airline Transp.
KFBK 283 Sacramento, Cal. Kimball-Upson Co.
KFBL 224 Everett, Wash. Leese Bros.
KFBS 360 Trinidad, Colo. Chronicle News.
KFBU 283 Laramie, Wyo. The Cathedral.
KFCB 238 Phoenix, Ariz. Nielsen Radio Supply Co.
KFCD 360 Salem, Ore. F. S. Barton.

Revised Jan. 15, 1924.

KFCF 360 Walla Walla, Wash. Frank O. Moore.
KFCH 242 Billings, Mont. Elect. Service Station.
KFCK 360 Colorado Sprs., Colo. C. P. Radio Co.
KFCM 244 Richmond, Cal. Richmond Radio Shop.
KFCP 360 Ogden, Utah. Ralph W. Flygare.
KFCV 360 Houston, Texas. Fred Mahaffey, Jr.
KFCY 360 LeMars, Iowa. Western Union College.
KFCZ 258 Omaha, Neb. Central High School.
KFDA 360 Baker, Ore. Adlers Music Store.
KFDD 252 Boise, Idaho. St. Michael's Cathedral.
KFDH 360 Tucson, Ariz. University of Arizona.
KFDJ 360 Corvallis, Ore. Oregon State College.
KFDL 360 Denver, Colo. Knight-Campbell Music Co.
KFDO 248 Bozeman, Mont. E. H. Cutting.
KFDR 360 York, Neb. Bullocks Hdwe. & Sptg. Goods.
KFDS 360 San Francisco, Cal. John D. McKee.
KFDU 240 Lincoln, Neb. Nebraska Radio Elect. Co.
KFDV 360 Fayetteville, Ark. Gilbrech & Stinson.
KFDX 360 Shreveport, La. First Baptist Church.
KFDY 360 Brookings, S. D. Col. of Agr. & Mech. Arts.
KFDZ 360 Minneapolis, Minn. Harry O. Iverson.
KFEF 360 Portland, Ore. Meier & Frank Co.
KFEJ 360 Tacoma, Wash. T. Radio News Service.
KFEL 360 Denver, Colo. Winner Radio Corp.
KFEP 240 Denver, Colo. Radio Equip. Co.
KFEQ 360 Oak, Neb. J. L. Scroggin.
KFER 231 Fort Dodge, Ia. Auto Elect. Service Co.
KFEV 263 Douglas, Wyo. Radio Electric Shop.
KFEX 261 Minneapolis, Minn. Augsburg Sem.
KFEY 360 Kellogg, Idaho. B. H. S. M. & Const. Co.
KFEZ 360 St. Louis, Mo. Am. Soc. of Mech. Arts.
KFFB 240 Milford, Kan. Brinkley-Jones Hosp. Assn.
KFFE 360 Pendleton, Ore. East Oregon Radio Co.
KFFO 229 Hillsboro, Ore. Dr. E. H. Smith.
KFFQ 360 Colo. Sprg., Colo. Marksheffel Motor Co.
KFFR 226 Sparks, Nevada. Jim Kirk.
KFFV 360 Lamoni, Iowa. Graceland College.
KFFX 278 Omaha, Neb. McGraw Co.
KFFY 275 Alexandria, La. Pincus & Murphy.
KFFZ 226 Dallas, Texas. Barnes Amusement Co.
KFGC 254 Baton Rouge, La. State University.
KFGD 248 Chickasha, Okla. Radio & Elect. Co.
KFGH 360 Stanford University, Cal.
KFGJ 266 St. Louis, Mo. Nat. Guard, 138th Inf.
KFGL 234 Arlington, Ore. Arlington Garage.
KFGQ 226 Boone, Iowa. Crary Hdw. Co.
KFGV 224 Utica, Neb. Heidrecher Radio Supply Co.
KFGX 250 Orange, Tex. First Presbyterian Church.
KFGY 224 Baudette, Minn. Gjelhaugs Radio Shop.
KFHA 360 Gunnison, Colo. State Normal School.
KFHB 280 Hood River, Ore. P. L. Boardwell.
KFHD 226 St. Joe, Mo. Utz Elect. Co.
KFHH 283 Neah Bay, Wash. Ambrose McCue.
KFHI 224 Wichita, Kan. C. V. Dixon.
KFHI 360 Santa Barbara, Cal. Fallon Co.
KFHP 246 Kearney, Neb. Radio Bug Products Co.
KFHQ 242 Los Gatos, Cal. Curtis Bros.
KFHR 270 Seattle, Wash. Star Elec. Radio.
KFHS 275 Lihue, Hawaii. C. J. Dow.
KFHU 252 Mayville, N. D. M. G. Sateren.
KFHX 229 Hutchinson, Kan. R. W. Nelson.
KFHY 242 Trinidad, Colo. R. S. McEwen.
KFI 469 Los Angeles, Cal. Earl C. Anthony.
KFIB 244 St. Louis, Mo. F. W. Jenkins.
KFID 246 Iola, Kan. Ross Arbuckle Garage.

KFIF 360 Portland, Ore. Benson Polytechnic Institute.
KFIK 234 Gladbrook, Iowa. General Electric Co.
KFIL 234 Louisburg, Kan. Windisch El. Farm Equip. Co.
KFIO 252 Spokane, Wash. No. Cent. High School.
KFIQ 224 Yakima, Wash. Yak. Val. Broadcasting Assn.
KFIV 240 Pittsburg, Kan. V. H. Broyles.
KFIX 240 Independence, Mo. Reorg. Ch. of Jesus Christ.
KFIY 236 Seattle, Wash. Brott Laboratories.
KFIZ 273 Fond du Lac, Wis. Daily Commonwealth.
KFJA 244 Grand Island, Neb. Cent. Power Co.
KFJB 248 Marshalltown, Iowa. Marshall Electric Co.
KFJC 233 Seattle, Wash. Post Intelligencer.
KFJD 236 Greeley, Colo. Weld Co. Pub. Co.
KFJF 252 Oklahoma City, Okla. Nat'l Radio Mfg. Co.
KFJH 273 Selma, Cal. Sugar Bowl.
KFJI 252 Astoria, Ore. Liberty Theater.
KFJJ 236 Carrollton, Mo. Radio Shop.
KFJK 233 Bristow, Okla. Delano Radio & Elect. Co.
KFJL 242 Ottumwa, Iowa. Hardsag Mfg. Co.
KFJM 229 Grand Forks, N. D. Univ. of N. D.
KFJQ 252 Grand Forks, N. D. Elec. Const. Co.
KFJR 258 Stevensville, Mont. A. C. Dixon & Son.
KFJU 234 Kearney, Neb. Central Power Co.
KFJV 224 Dexter, Iowa. T. H. Warren.
KFJW 226 Towanda, Kan. LeGrand Radio Co.
KFJX 229 Cedar Falls, Iowa. State Teachers' College.
KFJZ 254 Fort Worth, Tex. Tex Nat. Guard, 112 Cal.
KFKA 248 Greeley, Colo. Colo. Teachers' College.
KFKB 286 Milford, Kans. Brinkley-Jones Hospital.
KFKH 226 Lakeside, Colo. Denver Park Amuse. Co.
KFKV 283 Butte, Mont. E. F. Gray.
KFKX 286 Hastings, Neb. Westinghouse Elect. & M.
KFKZ 234 Colo. Spgs., Colo. Nassom Bros. Radio. Co.
KFLA 283 Butte, Mont. Abner R. Wilson.
KFLB 248 Menominee, Mich. Signal Elect. Mfg. Co.
KFLD 248 Menominee, Mich. Signal Elect. Mfg. Co.
KFLE 268 Denver, Colo. Nat. Educational Service.
KFLU 236 San Benito, Tex. Rio Grande Radio Sup. Hse.
KFLV 229 Rockford, Ill. A. T. Frykman.
KFLW 234 Missoula, Mont. Missoula Elec. Supply Co.
KFLX 240 Galveston, Tex. George R. Clough.
KFLY 231 Fargo, N. D. Fargo Radio Supply Co.
KFLZ 273 Atlantic, Ia. Atlantic Automobile Co.
KFMB 254 Little Rock, Ark. Christian Churches of L. R.
KFN 1579-2500 San Ysidro, Cal. Lester Picker.
KFS 500-1800 San Francisco, Cal. Federal Telegraph.
KFZ 283 Spokane, Wash. Doerr, Mitchell Elect. Co.
KG 250 Oakland, Cal. The Tribune.
KGB 252 Tacoma, Wash. Tacoma Ledger.
KGG 360 Portland, Ore. Hallock & Watson.
KGH 300-8500 Hillsboro, Ore. Federal Teleg. Co.
KGI 16300 Oahu, Hawaii. Radio Corp. of America.
KGN 360 Portland, Ore. N. W. Radio Mfg. Co.
KGO 321 Oakland, Cal. General Electric Co.
KGU 360 Honolulu, Hawaii. Marion B. Muhony.
KGW 492 Portland, Ore. Oregonian Pub. Co.
KGY 258 Lacey, Wash. St. Martin's College.
KHH 300-600 San Francisco, Cal. John P. Hickey.
KHJ 395 Los Angeles, Cal. Times Mirror Co.
KHQ 360 Seattle, Wash. Louis Wasmer.
KIE 16975 Kuhuku, Hawaii. Radio Corp. of Am.
KII San Francisco, Cal. United Press.
KJFU 234 Kearney, Neb. Central Power Co.
KJR 270 Seattle, Wash. Northwestern Radio Service.
KJQ 268 Stockton, Cal. C. O. Gould.
KJS 360 Los Angeles, Cal. Bible Institute.

KLN 261 Monterey, Cal. Monterey Elect. Shop.
 KLQ 550-1700 Rainbow, Mont. Gt. Falls Power Co.
 KLS 360 Oakland, Cal. Warner Bros.
 KLX 360 Oakland, Cal. Tribune.
 KMJ 360 Fresno, Cal. San Joaquin Light & Power.
 KMN 550-1700 Butte, Mont. Montana Power Co.
 KMO 360 Tacoma, Wash. Love Elect. Co.
 KNR Clearwater, Cal. Fed. Tel. Co.
 KNT 263 Aberdeen, Wash. Grays Harbor Radio Co.
 KNV 256 Los Angeles, Cal. Radio Supply Co.
 KNX 360 Los Angeles, Cal. Elec. Lighting Supply Co.
 KOB 360 State College of N. M.
 KOG 300-550-600 Honolulu, Hawaii. Mut. Tel. Co.
 KOK 706 Los Angeles, Cal. Cal. Fed. Tel. Co.
 KOP 286 Detroit, Mich. Police Dept.
 KPE 300-600 Seattle, Wash. City of Seattle.
 KPH 600 San Francisco, Cal. Radio Corp. of Am.
 KPK 469 Los Angeles, Cal. Examiner.
 KPO 423 San Francisco, Cal. Hale Bros.
 KQI 360-1290 Berkeley, Cal. Univ. of California.
 KQP 360 Hood River, Ore. Apple City Radio Club.
 KQT 360 Yakima, Wash. Elect. Power Appliance.
 KQV 360 Pittsburgh, Pa. Doubleday Hill Electric Co.
 KQW 348-385 San Jose, Cal. Chas. D. Herrold.
 KRE 278 Berkeley, Cal. Daily Gazette.
 KRP 300-600 Port Townsend, Wash. P. T. Radio Co.
 KRY 527-1650 Camp 63, Cal. So. Cal. Edison Co.
 KSD 546 St. Louis, Mo. Post Dispatch.
 KSE 600 Los Angeles (Wilmington), Cal. Radio Corp.
 of America.
 KSS 229 Long Beach, Cal. Prest & Dean.
 KTA 143-300-600 San Francisco, Cal. Examiner.
 KTC 360 Seattle, Wash. No. Radio & Elect. Co.
 KTW 360 Seattle, Wash. First Presbyterian Church.
 KUO 360 San Francisco, Cal. Examiner.
 KUS 360 Los Angeles, Cal. City Dye Works.
 KUY 256 El Monte, Cal. Coast Radio Co.
 KUVS 300-600 New York City Police Dept.
 KUXM 300-600-1599 Cheboygan, Mich. W. B. Kathan.
 KUXT 300-600 Long Beach, Cal. Pac. Tel. & Tel.
 KUXV 300-600 Pedrocitas, Cal. Pac. Teleg.
 KUY 256 El Monte, Cal. Coast Radio Co.
 KVP 527-1650 Camp 62, Cal. So. Cal. Edison Co.
 KWG 360 Stockton, Cal. Portable Wireless Teleg.
 KWH 360 Los Angeles, Cal. Examiner.
 KWT 3554-7587 Palo Alto, Cal. Federal Teleg.
 KXD 252 Modesto, Cal. Herald Pub. Co.
 KYT 360 San Diego, Cal. Thearle Music Co.
 KYW 536 Chicago, Ill. Westinghouse Elec. Mfg. Co.
 KZE 300-450-550 Aberdeen, Wash. Grays Harbor Com-
 mercial Co.
 KZM 143 Oakland, Cal. Preston D. Allen.
 KZN 360 Salt Lake City, Utah. Deseret News.
 KZV 360 Wenatchee, Wash. Wenatchee B. & M. Co.

 PWX 400 Havana, Cuba. Cuban Telephone Co.
 WAAB 268 New Orleans, La. V. Jensen.
 WAAC 360 New Orleans, La. Tulane University.
 WAAD 360 Cincinnati, O. Ohio Mechanics Inst.
 WAAF 286 Chicago, Ill. Drivers Journal.
 WAAK 280 Milwaukee, Wis. Gimbel Bros.
 WAAM 263 Newark, N. J. I. R. Nelson Co.
 WAAN 254 Columbia, Mo. Univ. of Missouri.
 WAAP 360 Wichita, Kan. United Elect. Co.
 WAAW 278 Omaha, Neb. Omaha Grain Exch.
 WAAZ 360 Emporia, Kan. Hollister, Miller Mot

WABB 266 Harrisburg, Pa. Dr. John B. Lawrence.
WABC 229 Anderson, Ind. Fulwider-Grimes Bat. Co.
WABD 283 Dayton, Ohio. Parker High School.
WABE 283 Washington, D. C. Y. M. C. A.
WABF 234 Mt. Vernon, Ill. M. V. Register News.
WABG 248 Jacksonville, Fla. Arnold Edwards Piano.
WABH 240 Sandusky, Ohio. Lake Shore Tire Co.
WABI 240 Bangor, Me. Bangor Ry. & Elect. Co.
WABJ 240 So. Bend, Ind. Radio Laboratories.
WABK 252 Worcester, Mass. First Bap. Church.
WABL 283 Storrs, Conn. Conn. Agr. College.
WABM 254 Saginaw, Mich. F. E. Doherty.
WABN 234 LaCrosse, Wis. Waldo C. Grover.
WABO 252 Rochester, N. Y. Lake Av. Bap. Church.
WABP 266 Dover, Ohio. Robert F. Weinig.
WABQ 261 Haverford, Pa. Haverford Col. Radio Club.
WABR 270 Toledo, Ohio. Scott High School.
WABS 244 Newark, N. J. Essex Manufacturing Co.
WABT 252 Washington, Pa. Holliday-Hall.
WABU 226 Camden, N. J. Victor Talking Machine Co.
WABV 263 Nashville, Tenn. John H. De Witt.
WAH 1599 Eldorado, Kan. Skelly Oil Co.
WAX 300-1800 Miami Beach, Fla. T. R. T. Co.
WBAA 360 W. Lafayette, Ind. Purdue University.
WBAD 360 Minneapolis, Minn. Sterling Elect. Co.
WBAF 360 Moorestown, N. J. Fred M. Middleton.
WBAH 360 Minneapolis, Minn. The Dayton Co.
WBAK 266 Harrisburg, Pa. State Police.
WBAN 244 Harrison, N. J. Wireless Phone Corp.
WBAO 360 Decatur, Ill. Milliken University.
WBAP 476 Fort Worth, Texas. Star Telegram.
WBAV 390 Columbus, O. Erner & Hopkins Co.
WBAW 246 Marietta, O. Marietta College.
WBAX 360 Wilkes-Barre, Pa. John H. Stenger, Jr.
WBAY 492 New York, N. Y. Am. Tel. & Tel. Co.
WBBA 240 Newark, Ohio. Newark R. Lab.
WBBD 234 Reading, Pa. Barbey Battery Service.
WBC 300-600 E. Moriches, N. Y. Independent Wire T. Co.
WBF 300-1800 Boston, Mass. Tropical Radio Teleg.
WBI 1650 Allentown, Pa. Pa. Power & Light Co.
WBL 261 Anthony, Kan. T. & H. Radio Co.
WBS 360 Newark, N. J. D. W. May.
WBT 375 Charlotte, N. C. So. Radio Corp.
WBW 300-600-700-1700 Burrwood, La. Trop. Ra. Corp.
WBZ 337 Springfield, Mass. Westinghouse El. Mfg. Co.
WCAD 280 Canton, N. Y. St. Lawrence Univ.
WCAE 462 Pittsburgh, Pa. Kaufman & Baer.
WCAG 268 New Orleans, La. Daily States.
WCAH 286 Columbus, Ohio. Entrekin Elect. Co.
WCAI 385 San Antonio, Texas. So. Equip. Co.
WCAJ 360 University Pl., Neb. Neb. Wesl. Univ.
WCAK 360 Houston, Tex. Alfred R. Daniel.
WCAL 360 Northfield, Minn. St. Olaf College.
WCAM 360 Villanova, Pa. Villanova College.
WCAO 360 Baltimore, Md. Sanders & Stayman Co.
WCAP 469 Washington, D. C. Ches. & Pot. Tel. Co.
WCAR 360 San Antonio, Tex. Alamo Radio Elec. Co.
WCAS 246 Minneapolis, Minn. W. H. Dunwoody.
WCAT 240 Rapid City, S. D. School of Mines.
WCAU 286 Philadelphia, Pa. Durham & Co.
WCAV 360 Little Rock, Ark. J. C. Dice Elect. Co.
WCAX 360 Burlington, Vt. Univ. of Vermont.
WCAY 261 Milwaukee. Kesselman-O'Driscoll.
WCBA 280 Allentown, Pa. Chas. W. Heimbach.
WCBD 345 Zion, Illinois. Wilbur G. Voliva.
WCC 300-2300 Marion, Mass. Radio Corp. of Am.

WCE 360 Minneapolis, Minn. Findley Elect. Co.
 WCG 300-1800 Brooklyn, N. Y. Intern. Radio Tel.
 WCI 300-16700 Barnegat, N. J. Radio Corp. of Am.
 WCJ 1650 Hazleton, Pa. Pa. Power & Light Co.
 WCK 360 St. Louis, Mo. Stix, Baer & Fuller.
 WCM 360 Austin, Texas. University of Texas.
 WCX 517 Detroit, Mich. Free Press.
 WCY 600-700 Cape May, N. J. Radio Corp. of Am.
 WDAE 360 Tampa, Fla. Daily Times.
 WDAF 411 Kansas City, Mo. Kansas City Star.
 WDAG 263 Amarillo, Tex. J. Laurance Martin.
 WDAH 268 El Paso, Tex. Trinity M. E. Church, South.
 WDAK 261 Hartford, Conn. The Courant.
 WDAL 360 Jacksonville, Fla., Times-Union.
 WDAM 360 New York City. Western Elect. Co.
 WDAO 360 Dallas, Tex. Automotive Elect. Co.
 WDAP 390 Chicago Board of Trade, Drake Hotel.
 WDAR 395 Philadelphia, Pa. Lit Brothers.
 WDAS 360 Worcester, Mass. Samuel A. Waite.
 WDAU 360 New Bedford, Mass. Slocum & Kilburn.
 WDAX 268 Centerville, Iowa, 1st National Bank.
 WDAY 224 Fargo, N. D. Fargo Radio Electric Co.
 WDBC 258 Lancaster, Pa. Kirk Johnson & Co.
 WDK 200-600 Susanville, Cal. R. D. Mayes.
 WDM 360 Washington, D. C. Church of Covenant.
 WDR 300-1625 Detroit, Mich. Inter. City Radio Co.
 WDS 1650 Hauto, Pa. Pa. Power & Light Co.
 WDT 405 Stapleton, N. Y. Ship Owners Radio Service.
 WDYL 360 Salt Lake City, Utah. Salt Lake Ev. Tele.
 WDZ 278 Tuscola, Ill. James L. Bush.
 WEAA 280 Flint, Mich. Falhan & Lathrop.
 WEAJ 492 New York City, N. Y. American T. & T. Co.
 WEAF 492 New York City, N. Y. American T. & T. Co.
 WEAH 244 Wichita, Kan. Landers Radio Co.
 WEAI 286 Ithaca, N. Y. Cornell University.
 WEAJ 360 Vermillion, S. D. University of S. Dakota.
 WEAK 360 St. Joseph, Mo. J. B. Abercrombie.
 WEAM 252 N. Plainfield, N. J. Boro. of N. Plainfield.
 WEAN 273 Providence, R. I. Shepard Co.
 WEAO 360 Columbus, O. Ohio State University.
 WEAP 360 Mobile, Ala. Mobile Radio Co.
 WEAR 360 Baltimore, Md. Baltimore American.
 WEAS 360 Washington, D. C. Hecht Company.
 WEAU 360 Sioux City, Ia. Davidson Bros. Co.
 WEAY 360 Houston, Tex. Will Horwitz, Jr.
 WEB 360 St. Louis, Mo. Benwood Co.
 WEH 1599 Tulsa, Okla. Skelly Oil Co.
 WEQ 731-909 Baltimore, Md. Board of Fire Commis'n.
 WEV 360 Houston, Tex. Hurlburt-Still Elect.
 WEW 261 St. Louis, Mo. St. Louis University.
 WFAA 476 Dallas, Texas. News-Journal.
 WFAB 234 Syracuse, N. Y. Carl F. Woose.
 WFAF 273 Poughkeepsie, N. Y. H. C. Spratley Co.
 WFAH 360 Port Arthur, Tex. The Wireless Co.
 WFAJ 360 Asheville, N. C. HiGrade Wireless Inst.
 WFAM 360 St. Cloud, Minn. Times.
 WFAN 360 Hutchinson, Minn. Elec. Service.
 WFAQ 360 Cameron, Missouri. Cameron Radio Co.
 WFAT 360 Sioux Falls, S. D. Argus Leader.
 WFAV 220 Lincoln, Neb. University of Nebraska.
 WFI 395 Philadelphia, Pa. Strawbridge & Clothier.
 WGAL 248 Lancaster, Pa. Lancaster El. Supply Co.
 WGAN 360 Pensacola, Fla. Cecil E. Lloyd.
 WGAQ 360 Shreveport, La. Glenwood Radio Corp.
 WGAW 261 Altoona, Pa. Ernest C. Albright.
 WGAY 360 Madison, Wis. N. W. Radio Co.
 WGAZ 360 South Bend, Ind. South Bend Tribu

WGF 360 Des Moines, Iowa. Register and Tribune.
 WGG 15900 Tuckerton, N. J. Radio Corp.
 WGI 360 Medford Hillside, Mass. Am. Radio Corp.
 WGL 350 Philadelphia, Pa. Thos. F. J. Howlett.
 WGO 300-450-600 Cleveland, O. Radio Corp. of Am.
 WGR 319 Buffalo, N. Y. Federal Tel. & Tel.
 WGV 360 New Orleans, La. Inter State Elect. Co.
 WGY 380 Schenectady, N. Y. General Elec. Co.
 WHA 860 Madison, Wis. University of Wisconsin.
 WHAA 283 Iowa City, Iowa. University of Iowa.
 WHAB 360 Galveston, Tex. C. W. Thompson.
 WHAC 360 Waterloo, Iowa. Cole Bros. Electric Co.
 WHAD 280 Milwaukee, Wis. Marquette University.
 WHAG 222 Cincinnati, O. University of Cincinnati.
 WHAH 360 Joplin, Mo. Hafer Supply Co.
 WHAI 360 Davenport, Iowa. Radio Equip. & Mfg. Co.
 WHAK 360 Clarksburg, W. Va. Roberts Hdwe. Co.
 WHAM 360 Rochester, N. Y. Eastman School of Music.
 WHAO 360 Savannah, Ga. Frederick A. Hill.
 WHAP 360 Decatur, Ill. Otta & Kuhns.
 WHAS 400 Louisville, Ky. Journal and Times.
 WHAV 360 Wilmington, Del. Wil. El. Spec. Co.
 WHAY 600 Huntington, Ind. Huntington Press.
 WHAZ 380 Troy, N. Y. Renssalaer Poly. Inst.
 WHB 411 Kansas City, Mo. Sweeney School.
 WHK 300 Cleveland, O. Warren B. Cox.
 WHN 360 Ridgewood, N. Y. George Schubil.
 WHT 300-1800 Rogers, Mich. M. L. & C. Co.
 WIAB 252 Rockford, Ill. Joselyn Auto Co.
 WIAC 360 Galveston, Texas. Galveston Tribune.
 WIAD 254 Ocean City, N. J. Ocean City Yacht Club.
 WIAF 234 New Orleans, La. G. A. De Cortin.
 WIAH 360 Newton, Iowa. Cont. Radio Mfg. Co.
 WIAI 252 Springfield, Mo. Heer Stores Co.
 WIAJ 224 Neenah, Wis. Fox Riv. Val. Radio Sup. Co.
 WIAK 278 Omaha, Neb. Journal Stockman Co.
 WIAO 453 Milwaukee, Wis. Wisconsin News.
 WIAQ 226 Marion, Ind. Chronicle Pub. Co.
 WIAR 360 Paducah, Ky. Paducah Sun.
 WIAS 360 Burlington, Iowa. Burlington Hawkeye.
 WIAT 360 Tarkio, Mo. Leon T. Nobel.
 WIAU 360 Le Mars, Ia. American Trust & Sav. Bank.
 WIAY 224 Washington, D. C. Woodward & Lothrop.
 WII 13600 New Brunswick, N. J. Radio Corp. of Am.
 WIK 234 McKeesport, Pa. K. & L. Elect. Co.
 WIL 360 Washington, D. C. Continental Elect. Sup.
 WIM 600 Chatham, Mass. Radio C. of Am.
 WIO 300-1700 Fort Morgan, Ala. Tropical Radio.
 WIP 509 Philadelphia, Pa. Gimbel Bros.
 WJAB 360 Lincoln, Neb. American Elect. Co.
 WJAD 360 Waco, Texas. Jackson's Radio Eng. Lab.
 WJAF 360 Muncie, Ind. Press Pub. Co.
 WJAG 360 Norfolk, Neb. Daily News.
 WJAM 268 Cedar Rapids, Iowa. D. C. Perham.
 WJAN 280 Peoria, Ill. Peoria Star.
 WJAQ 360 Topeka, Kan. Capper Publications.
 WJAR 360 Providence, R. I. Outlet Co.
 WJAS 360 Pittsburgh, Pa. Pitts. Radio Supply House.
 WJAT 360 Marshall, Mo. Kelley-Vawter Jewelry Co.
 WJAV 1625 Princeton, Ind. Ind. Pipe Line Corp.
 WJAX 390 Cleveland, Ohio. Union Trust Co.
 WJAZ 448 Chicago, Ill. Edgewater Beach Hotel.
 WJD 229 Granville, Ohio. Rich. H. Howe.
 WJH 273 Washington, D. C. White & Boyer Co.
 WJJ 1621 Tullahoma, Tenn. N. C. & St. L. Ry.
 WJQ 1715 Jackson, Ohio, Ford Motor Co.

WJX 360 New York. DeForest Radio Tel. & Teleg. Co.
WJY 405 New York. Radio Corp. of Am.
WJZ 445 New York, N. Y. Radio Corp. of Am.
WKAA 268 Cedar Rapids, Iowa. H. F. Paar.
WKAD 240 E. Providence, R. I. Charles Loof.
WKAJ 360 Wichita Falls, Texas. U. S. Radio Sup. Co.
WKAN 226 Montgomery, Ala. United Battery Ser. Co.
WKAP 360 Cranston, R. I. Dutee W. Flint.
WKAQ 360 San Juan, Porto Rico. Radio Corp. of P. R.
WKAR 280 E. Lansing, Mich. Mich. Agr. College.
WKAS 360 Springfield, Mo. L. F. Lines Music Co.
WKAU 360 Laconia, N. H. Laconia Radio Club.
WKAU 242 Beloit, Wis. Turner Cycle Co.
WKAY 360 Gainesville, Ga. Brenau College.
WKGZ 268 Berrien Sprs., Mich. Emmanuel Mis. Col.
WKH 1621 Guntersville, Ala. N. C. & St. L. Ry.
WKY 360 Oklahoma, Okla. WKY Radio Shop.
WLAG 417 Minneapolis, Minn. Cutting-Washington
 Radio Corp.
WLAH 234 Syracuse, N. Y. Samuel Woolworth.
WLAJ 360 Waco, Texas. Waco Elect. Supply Co.
WLAK 360 Bellows Falls, Vt. Vt. Farm Mach. Corp.
WLAL 360 Tulsa, Okla. Tulsa Radio Co.
WLAN 285 Houlton, Maine. Putnam Hardware Co.
WLAP 360 Louisville, Ky. W. V. Jordan.
WLAQ 360 Kalamazoo, Mich. A. E. Schilling.
WLAT 360 Burlington, Ia. Radio & Specialty Co.
WLAV 360 Pensacola, Fla. Electric Shop.
WLAW 360 New York City, N. Y. Police Dept.
WLAX 231 Greencastle, Ind. Greencastle Community.
WLB 360 Minneapolis, Minn. Univ. of Minn.
WLC 300-600-700-1800 New London, Conn. Radio Corp.
 of America.
WLD 1666 Ludington, Mich.
WLW 309 Cincinnati, Ohio. Crosley Mfg. Co.
WMA 360 Anderson, Ind. Arrow Radio Laboratory.
WMAB 360 Oklahoma City, Okla. Ok. Rad. Sup. Co.
WMAC 261 Cazenovia, N. Y. C. B. Meredith.
WMAF 360 Dartmouth, Mass. Round Hills Rad. Corp.
WMAH 254 Lincoln, Neb. General Supply Co.
WMAJ 275 Kansas City, Mo. Drovers Telegram.
WMAK 360 Lockport, N. Y. Norton Laboratories.
WMAL 256 Trenton, N. J. Trenton Hardware Co.
WMAM 360-485 Beaumont, Tex. B. Radio Equip. Co.
WMAN 286 Columbus, O. First St. Baptist Church.
WMAU 246 Easton, Pa. Utility Battery Service.
WMAQ 448 Chicago, Ill. Chicago Daily News.
WMAV 250 Auburn, Ala. Ala. Poly. Inst.
WMAX 240 Greenville, Ohio. K. & K. Radio Sup. Co.
WMAY 280 St. Louis, Mo. Kingshighway Church.
WMAZ 268 Macon, Ga. Mercer University.
WMC 500 Memphis, Tenn. Commercial Appeal.
WMH 248 Cincinnati, O. Precision Equip. Co.
WMU 261 Washington, D. C. Doubleday-Hill Elect.
WNAC 278 Boston, Mass. Shepard Stores.
WNAD 360 Norman, Okla. Oklahoma University.
WNAL 242 Omaha, Neb. R. J. Rockwell.
WNAN 286 Syracuse, N. Y. Syracuse Radio Tel. Co.
WNAP 360 Springfield, Ohio. Wittenberg College.
WNAQ 360 Charleston, S. C. Charleston Radio E. Co.
WNAR 231 Butler, Mo. C. C. Rhodes.
WNAS 360 Austin, Tex. Texas Radio Corp.
WNAT 360 Philadelphia, Pa. Lennig Bros.
WNAV 360 Knoxville, Tenn. People Tel. & Tel. Co.
WNAW 360 Fortress Monroe, Va. Hy. Kunzmann.

WNAX 244 Yankton, S. D. Dakota Radio Ap. Co.
 WNAV 360 Baltimore, Md. Ship Owners Radio Serv.
WNP (Wireless North Pole) MacMillian Arctic Exped. (Using BURGESS BATTERIES exclusively).
 WNJ 360 Albany, N. Y. Shotton Radio Mfg. Co.
 WNN Mobile, Ala. Tropical Radio Teleg. Co.
 WNY 300-600-2000 Bush Terminal Sta., N. Y. Radio Corporation of America.
 WOOA 360 Ardmore, Okla. Dr. Walter Hardy.
 WOAB 280 Grand Forks, N. D. Valley Radio.
 WOAC 1689 Lima, Ohio. Maus Radio Co.
 WOAD 360 Sigourney, Iowa. Friday Bat. & Elec. Co.
 WOAE 360 Fremont, Neb. Midland College.
 WOAF 360 Tyler, Texas. Commercial College.
 WOAG 244 Belvidere, Ill. Carmen Ferro.
 WOAH 360 Charleston, S. C. Palmetto Radio Corp.
 WOAI 385 San Antonio, Tex. So. Equip. Co.
 WOAJ 360 Parsons, Kan. Ervins Elect. Co.
 WOAL 286 Webster Groves, Mo. Wm. Evans Woods.
 WOAN 360 Lawrenceburg, Tenn. Jas. D. Vaughan.
 WOOO 360 Mishawaka, Ind. Lyradion Mfg. Co.
 WOAP 360 Kalamazoo, Mich. Kalamazoo College.
 WOAR 229 Kenosha, Wis. Henry P. Lundskow.
 WOAT 360 Wilmington, Del. Boyd M. Hamp.
 WOAV 242 Erie, Pa. Pa. Nat. Guard.
 WOAW 526 Omaha, Neb. Woodmen of World.
 WOAX 240 Trenton, N. J. F. J. Wolff.
 WOC 484 Davenport, Iowa. Palmer School.
 WOI 360 Ames, Iowa. State College.
 WOK 360 Pine Bluff, Ark. Arkansas L. & P. Co.
 WOO 509 Philadelphia, Pa. John Wanamaker.
 WOQ 360 Kansas City, Mo. Western Radio Co.
 WOR 405 Newark, N. J. Bamberger & Co.
 WOS 441 Jefferson City, Mo. State Mar. Bureau.
 WOV 360 Omaha, Neb. R. B. Howell.
 WPAB 360 State College, Pa. Pa. State College.
 WPAC 360 Okmulgee, Okla. Donaldson Radio Co.
 WPAD 360 Chicago, Ill. Wieboldt Co.
 WPAF 360 Council Bluffs, Iowa. Peterson's Radio Co.
 WPAH 360 Waupaca, Wis. Dept. of Markets.
 WPAJ 268 New Haven, Conn. Doolittle Radio Corp.
 WPAK 360 Agricultural College, N. D.
 WPAL 286 Columbus, Ohio. Superior Radio & T. Co.
 WPAM 360 Topeka, Kan. Auerbach & Guettel.
 WPAP 360 Winchester, Ky. Theo. D. Phillips.
 WPAQ 360 Frostburg, Md. Gen. Sales Engin. Co.
 WPAR 360 Beloit, Kan. R. A. Ward.
 WPAT 360 El Paso, Texas. St. Patrick's Cathedral.
 WPAU 360 Concordia College. Moorhead, Minn.
 WPAZ 273 Charleston, W. Va. Dr. John R. Koch.
 WPG 234 New Lebanon, O. Nushawg Plty. Farm.
 WQAA 360 Parkersburg, Pa. Horace A. Beale.
 WQAC 360 Amarillo, Texas. E. B. Gish.
 WQAD 242 Waterbury, Conn. Whittall Elect. Co.
 WQAE 275 Springfield, Vt. Moore Radio Station.
 WQAF 240 Sandusky, O. Sandusky Register.
 WQAH 254 Lexington, Ky. Brock-Anderson E. E. Co.
 WQAL 258 Mattoon, Ill. Coles County T. & T.
 WQAM 360 Miami, Fla. Electrical Equip. Co.
 WQAN 280 Scranton, Pa. Scranton Times.
 WQAO 360 New York, N. Y. Calvary Baptist Church.
 WQAP 360 Lincoln, Neb. Am. Radio Co.
 WQAQ 360 Abilene, Tex. W. Texas Radio Co.
 WQAS 266 Lowell, Mass. Prince-Walter Co.
 WQAV 280 Greenville, S. C. Huntington & Guerry.

WQAW 236 Washington, D. C. Catholic University.
WQAX 360 Peoria, Ill. Radio Equipment Co.
WQAY 226 Hastings, Neb. Gaston Music & Furn. Co.
WQK 16465 St. James, N. Y. Radio Corp. of Am.
WQL 17500 Coram Hill, N. Y. Radio Corp.
WRAA 360 Houston, Tex. Rice Institute.
WRAD 248 Marion, Kansas. Taylor Radio Shop.
WRAF 224 La Porte, Ind. Radio Club.
WRAH 275 Providence, R. I. Stanley N. Read.
WRAL 248 St. Croix Falls, Wis. Nor. States Pwr. Co.
WRAM 244 Galesburg, Ill. Lombard College.
WRAO 360 St. Louis, Mo. St. Louis Radio Service Co.
WRAR 226 David City, Neb. J. C. Thomas.
WRAS 360 McLeansboro, Ill. Radio Supply Co.
WRAV 360 Yellow Springs, O. Antioch College.
WRAW 238 Reading, Pa. Horace D. Good.
WRAX 268 Gloucester City, N. J. Flexons Garage.
WRAY 280 Scranton, Pa. Radio Sales Corp.
WRAZ 233 Newark, N. J. Radio Shop of Newark.
WRC Washington, D. C. Radio Corp.
WRK 360 Hamilton, Ohio. Doron Bros.
WRL 360 Schenectady, N. Y. Union College.
WRM 360 Urbana, Ill. University of Illinois.
WRQ 13900 Mattapoisett, Mass. Radio Corp. of Am.
WRR 360 Dallas, Texas. City of Dallas.
WRT 11500 Bound Brook, N. J. Radio Corp. of Am.
WRW 273 Tarrytown, N. Y. Koenig Bros.
WSA 300-1800 East Hampton, N. Y. Cutting West.
WSAB 360 Cape Girardeau, Mo. S. E. Tea. Col.
WSAC 360 Clemson, S. C. Clemson Agr. College.
WSAD 261 Providence, R. I. J. A. Foster Co.
WSAG 244 St. Petersburg, Fla. L. V. Davis & Geo. Prestman, Sr.
WSAH 248 Chicago, Ill. A. G. Leonard, Jr.
WSAI 360 Cincinnati, Ohio. U. S. Playing Card Co.
WSAJ 360 Grove City, Pa. Grove City College.
WSAL 246 Brookville, Ind. Franklin Electric Co.
WSAN 229 Allentown, Pa. A. Radio Club.
WSAP 263 New York, N. Y. 7th Day Adv. Church.
WSAR 254 Fall River, Mass. Doughty & Welch E. Co.
WSAU 229 Camp Marienfield, Chesham, N. H.
WSAW 275 Canandaigua, N. Y. Curtice & McElwee.
WSAX 268 Chicago, Ill. Chicago Radio Laboratory.
WSB 429 Atlanta, Ga. Atlanta Journal.
WSC 706-600 Siasconset, Mass. Radio Corp. of Am.
WSE 300-600-2500 East Moriches, N. Y. Ind. Wireless Tel. Co.
WSK 706 New York City. Panama R. R. Co.
WSL 273 Utica, N. Y. J. & M. Elect. Co.
WSO 11620 Marion, Mass. Radio Corp. of Am.
WSY 360 Birmingham, Ala. Alabama Power Co.
WTAB 248 Fall River, Mass. Daily Herald.
WTAC 360 Johnstown, Pa. Penn. Traffic Co.
WTAD 229 Carthage, Ill. R. E. Compton.
WTAF 242 New Orleans, La. Louis J. Gallo.
WTAG 258 Providence, R. I. Kern Music Co.
WTAH 236 Belvidere, Ill. Carmen Ferro.
WTAJ 236 Portland, Me. Radio Shop.
WTAL 252 Toledo, Ohio. Toledo Radio & Elect. Co.
WTAM 390 Cleveland, Ohio. Willard Storage Bat. Co.
WTAN 240 Mattoon, Ill. Orndorff Radio Shop.
WTAP 242 Cambridge, Ill. Cambridge Radio & Elect. Co.
WTAQ 226 Osseo, Wis. S. H. Van Gorden & Son.
WTAR 226 Norfolk, Va. Reliance Electric Co.
WTAS 275 Elgin, Ill. Chas. E. Erbstein.

United States Broadcasting Stations

By Location

Owners Listed Under Call Letters.

ALABAMA

Auburn WMAV 250
Birmingham WSY 360
Fort Morgan WIO 300-1700
Guntersville WKH 1621

Mobile WEAP 360
Mobile WNN
Montgomery WKAN 226

ARKANSAS

Fayetteville KFDV 360
Little Rock KFMB 254

Little Rock WCAV 360
Pine Bluff WOK 360

ARIZONA

Phoenix KDYW 360
Phoenix KFAD 360

Phoenix KFCB 238
Tucson KFDH 360

CALIFORNIA

Arroyo Camp KEY 1650
Bakersfield KDZB 240
Berkeley KQI 360-1290
Berkeley KRE 278
Bolinás KET 13100
Camp 60 KDPV 300-600
Camp 61 KDPW 300-600
Camp 62 KVP 527-1650
Camp 63 KRY 527-1650
Cascada KDPU 300-600
Clearwater KNR
El Monte KUY 256
Fresno KMJ 360
Hollywood KFAR 280
Long Beach KSS 229
Long Beach KUXT 300-600
Los Angeles KDZF 278
Los Angeles KFBI 300-525-600
Los Angeles KFI 469
Los Angeles KHJ 395
Los Angeles KJS 360
Los Angeles KNV 256
Los Angeles KNX 360
Los Angeles KOK 706
Los Angeles KPK 469
Los Angeles (Wilmington) KSE 600
Los Angeles KUS 360
Los Angeles KWH 360
Los Gatos KFHQ 242
Modesto KXD 252
Monterey KLN 261
Oakland KGA 250
Oakland KLS 360

Oakland KLX 360
Oakland KZM 143
Oakland KGO 321
Palo Alto KWT 3554-7587
Pedrocityas KUXV 300-600
Point Reyes KDU 12100
Richmond KFCM 244
Sacramento KFBK 283
San Diego KDPT 244
San Diego KDYM 252
San Diego KFBC 252
San Diego KYT 360
San Francisco KEB 360
San Francisco KFDS 360
San Francisco KFS 500-1800
San Francisco KHH 300-600
San Francisco KII
San Francisco KPH 600
San Francisco KPO 423
San Francisco KTA 143-300-600
San Francisco KUO 360
San Jose KQW 348-385
San Luis Obispo KFBE 360
Santa Ana KFAW 280
Santa Barbara KFHJ 360
San Ysidro KFN 1579-2500
Selma KFJH 278
Stanford University KFGH 360
Stockton KWG 360
Stockton KJQ 268
Susanville WDK 200-600
Venice KFAV 258

COLORADO

Boulder KFAJ 360
Colorado Sprs. KFCK 360
Colorado Sprs. KFFQ 360
Colorado Sprs. KFKZ 234
Denver KDZQ 360
Denver KDZU 360
Denver KFAF 360
Denver KFDL 360
Denver KFEL 360

Denver KFEP 240
Denver KFLE 268
Greeley KFJD 236
Greeley KFKA 248
Gunnison KFHA 360
Lakeside KFKH 226
Trinidad KFBS 360
Trinidad KFHY 242

CONNECTICUT

Hartford WDAK 261
New Haven WPAJ 268
New London WLC 300-600-700-1800

Storrs WABL 283
Waterbury WQAD 242

DELAWARE

Wilmington WHAV 360
Wilmington WOAT 360

Wilmington WPAW 360

DISTRICT OF COLUMBIA

Washington WABE 283
Washington WCAP 469
Washington WDM 360
Washington WEAS 360
Washington WIAY 224
Washington WIL 360
Washington WJH 273
Washington WMU 261
Washington WQAW 236
Washington WRC

FLORIDA

Jacksonville WABG 248
Jacksonville WDAL 360
Miami WQAM 360
Miami Beach WAX 300-1800
Pensacola WGAN 360
Pensacola WLAV 360
St. Petersburg WSAG 244
Tampa WDAE 360

GEORGIA

Atlanta WSB 429
Atlantic KFLZ 273
Gainesville WKAY 360
Macon WMAZ 268
Savannah WHAO 360
Savannah WRAB 360

IDAHO

Boise KFAU 270-485
Boise KFDD 252
Kellogg KFEY 360
Moscow KFAN 360

ILLINOIS

Belvidere WOAG 244
Belvidere WTAH 236
Cambridge WTAP 242
Carthage WTAD 229
Chicago KYW 536
Chicago WAAF 286
Chicago WDAP 390
Chicago WJAZ 448
Chicago WMAQ 448
Chicago WPAD 360
Chicago WSAH 248
Chicago WSAX 268
Decatur WBAO 360
Decatur WHAP 360
Elgin WTAS 275
Galesburg WRAM 360
Galesburg WRAM 244
Joliet WWAE 227
Mattoon WQAL 258
Mattoon WTAN 240
McLeansboro WRAS 360
Mt. Vernon WABF 234
Peoria WJAN 280
Peoria WQAX 360
Rockford KFLV 229
Rockford WIAB 252
Tuscola WDW 278
Urbana WRM 360
Zion WCBF 345

INDIANA

Anderson WABC 229
Anderson WMA 360
Brookville WSAL 246
Greencastle WLAX 231
LaPorte WRAF 224
Marion WIAQ 226
Mishawaka WAO 360
Muncie WJAF 360
Princeton WJAV 1625
South Bend WABJ 240
South Bend WGAZ 360
W. Lafayette WBAA 360

IOWA

Ames WOI 360
Boone KFGQ 226
Burlington WIAS 360
Burlington WLAT 360
Cedar Falls KFJX 229
Cedar Rapids WJAM 268
Cedar Rapids WKAA 268
Centerville WDAX 268
Council Bluffs WPAF 360
Davenport WHAI 360
Davenport WOC 484
Des Moines WGF 360
Dexter KFJV 224
Fort Dodge KFER 231
Gladbrook KFIK 234
Iowa City WHAA 283
Lamoni KFFV 360
LeMars KFCY 360
LeMars WIAU 360
Marshalltown KFJB 248
Newton WIAH 360
Ottumwa KFJL 242
Sigourney WOAD 360
Sioux City WEAU 360
Waterloo WHAC 360

KANSAS

Anthony WBL 261
Beloit WPAR 360
Eldorado WAH 1599
Emporia WAAZ 360
Hutchinson KFHX 229
Iola KFD 246
Louisburg KFIL 234
Manhattan WTG 485
Marion WRAD 248
Milford KFFB 240
Milford KFKB 286
Parsons WOAJ 360
Pittsburg KFIV 240
Topeka WJAQ 360
Topeka WPAM 360
Towanda KFJW 226
Wichita KFHI 224
Wichita WAAP 360
Wichita WEAH 244

KENTUCKY

Lexington WQAH 254
Louisville WHAS 400

Louisville WLAP 360
Paducah WIAR 360

Winchester WPAP 360

LOUISIANA

Alexandria KFFY 275
Baton Rouge KFGC 254
Burrwood WBW 300-600-
700-1700
Franklinton KFLD 234
New Orleans WAAB 268
New Orleans WAAC 360

New Orleans WCAG 268
New Orleans WGV 360
New Orleans WIAF 234
New Orleans WTAF 242
New Orleans WWL 380
Shreveport KFDX 360
Shreveport WGAQ 360

MAINE

Bangor WABI 240
Houlton WLAN 285

Portland WTAJ 236
Rockland WTT 300-7800

MARYLAND

Baltimore WCAO 360
Baltimore WEAR 360
Baltimore WEQ 731-909

Baltimore WNAV 360
Frostburg WPAQ 360

MASSACHUSETTS

Boston WBF 300-1800
Boston WNAC 278
Boston WTAT 244
Chatham WIM 600
Dartmouth WMAF 360
Fall River WSAR 254
Fall River WTAB 248
Lowell WQAS 266
Marion WCC 300-2300

Marion WSO 11620
Mattapoisett WRQ 13900
Medford Hillside WGI 360
New Bedford WDAU 360
Siasconset WSC 706-600
Springfield WBZ 337
Worcester WABK 252
Worcester WDAS 360

MICHIGAN

Berrien Springs KFGZ 268
Cheboygan KUXM 300-600-
1599
Dearborn KDEN 1713
Dearborn WVI 273-400
Detroit KDPH 1587
Detroit KOP 286
Detroit WCX 517
Detroit WDR 300-1625
Detroit WWJ 517
Flint WEAA 280

Houghton WWAQ 244
Kalamazoo WLAQ 360
Kalamazoo WOAP 360
E. Lansing WKAR 280
Ludington WLD 1666
Menominee KFLB 248
Northville KDEP 1713
Port Huron KDPI 300-1625
Rogers WHT 300-1800
Saginaw WABM 254
Superior KDPI 300-1625

MINNESOTA

Baudette KFGY 224
Hutchinson WFAN 360
Minneapolis KFDZ 360
Minneapolis KFEX 261
Minneapolis WBAD 360
Minneapolis WBAH 360
Minneapolis WCAS 246

Minneapolis WCE 360
Minneapolis WLAG 417
Minneapolis WLB 360
Moorhead WPAU 360
Northfield WCAL 360
St. Cloud WFAM 360

MISSOURI

Butler WVAR 231
Cameron WFAQ 360
Cape Girardeau WSAB 360
Carrollton KFJJ 236
Columbia WAAN 254
Independence KFIX 240
Jefferson City WOS 441
Joplin WHAH 360
Kansas City WDAF 411
Kansas City WHB 411
Kansas City WMAJ 275
Kansas City WOQ 360
Marshall WJAT 360
St. Joe KFHD 226

St. Joseph WEAK 260
St. Louis KFEZ 360
St. Louis KFGJ 266
St. Louis KFIB 244
St. Louis KSD 546
St. Louis WCK 360
St. Louis WEB 360
St. Louis WEW 261
St. Louis WMAY 280
St. Louis WRAO 360
Springfield WIAI 252
Springfield WKAS 360
Tarkio WIAT 360
Webster Groves WOAL 286

MONTANA

Billings KFCH 242
Bozeman KFDO 248
Butte KFAP 360
Butte KFKV 283
Butte KFLA 283
Butte KMN 550-1700

Great Falls KDYS 360
Havre KFBB 360
Missoula KFLW 234
Rainbow KLQ 550-1700
Stevensville KFJR 258

NEBRASKA

David City WRAR 226
Fremont WOAE 360
Grand Island KFJA 244
Hastings KFKX 286
Hastings WQAY 226
Kearney KFHP 246
Kearney KFJU 234
Kearney KJFU 234
Lincoln KFDU 240
Lincoln WFAV 220
Lincoln WJAB 360
Lincoln WMAH 254
Lincoln WQAP 360
Norfolk WJAG 360
Oak KFEQ 360
Omaha KFCZ 258
Omaha KFFX 278
Omaha WAAW 278
Omaha WIAK 278
Omaha WNAL 242
Omaha WOAW 526
Omaha WOV 360
Tecumseh WTAU 360
University Pl. WCAJ 360
Utica KFGV 224
York KFDR 360

NEW HAMPSHIRE

Chesham WSAU 229
Laconia WKAU 360

NEW JERSEY

Barnegat WCI 300-16700
Bound Brook WRT 11500
Cape May WCY 600-700
Camden WABU 226
Camden WWAF 236
Gloucester City WRAX 268
Moorestown WBAF 360
Newark WAAM 263
Newark WBS 360
Newark WOR 405
Newark WRAZ 233
Newark WABS 244
New Brunswick WII 13600
N. Plainfield WEAM 252
Ocean City WIAD 254
Paterson WBAN 244
Trenton WMAL 256
Trenton WOAX 240
Tuckerton WGG 15900

NEW MEXICO

State Col. of N. M. KOB 360

NEW YORK

Albany WNJ 360
Brooklyn WCG 300-1800
Buffalo WGR 319
Buffalo WWT 360
New York City WNY 300-600-2000
Canandaigua WSAW 275
Canton WCAD 280
Cazenovia WMAC 261
Coram Hill WQL 17500
E. Hampton WSA 300-1800
E. Moriches WBC 300-600
E. Moriches WSE 300-600-2500
Ithaca WEAI 286
Lockport WMAK 360
N. Y. City KDKF 200-600
N. Y. City KDOW 360
N. Y. City KUVS 300-600
N. Y. City WBAY 492
N. Y. City WDAM 360
N. Y. City WEAJ 492
N. Y. City WJX 360
N. Y. City WJY 405
N. Y. City WJZ 445
N. Y. City WLAW 360
N. Y. City WQAO 360
N. Y. City WSAP 263
N. Y. City WSK 706
Poughkeepsie WFAF 273
Ridgewood WHN 360
Rochester WABO 252
Rochester WHAM 360
St. James WQK 16465
Schenectady WGY 380
Schenectady WRL 360
Stapleton WDT 405
Syracuse WFAB 234
Syracuse WLAH 234
Syracuse WNaN 286
Tarrytown WRW 273
Troy WHAZ 380
Utica WSL 273

NEVADA

Reno KDZK 226
Sparks KFFR 226

NORTH CAROLINA

Asheville WFAJ 360
Charlotte WBT 375

NORTH DAKOTA

Agri. College WPAK 360
Grand Forks KFJQ 252
Fargo WDAY 224
Grand Forks WOAB 280
Fargo KFLY 231
Mayville KFHU 252
Grand Forks KFJM 229

OHIO

Cincinnati WAAD 360
Cincinnati WHAG 222
Cincinnati WLW 309
Cincinnati WMH 248
Cincinnati WSAI 360
Cleveland KDPM 270
Cleveland WGO 300-450-600
Cleveland WHK 300
Cleveland WJAX 390
Cleveland WTAM 390
Cleveland WTK 300-1764
Columbus WBAV 390

Columbus WCAH 286
Columbus WEOA 360
Columbus WMAN 286
Columbus WPAL 286
Dayton WABD 283
Dover WABP 266
Granville WJD 229
Greenville WMAX 240
Hamilton WRK 360
Jackson WJQ 1715
Lima WOAC 1689
Marietta WBAW 246

Ardmore WOOA 360
Bristow KFJK 233
Chickasha KFGD 248
Norman WNAD 360
Oklahoma City KFJF 252

Arlington KFGL 234
Astoria KFJI 252
Baker KFDA 360
Corvallis KFDJ 360
Hillsboro KEK
Hillsboro KFFO 229
Hillsboro KGH 300-8500
Hood River KFHB 280
Hood River KQP 360

OKLAHOMA

Newark WBBA 240
New Lebanon WPG 234
Sandusky WABH 240
Sandusky WQAF 240
Springfield WNAP 360
Toledo WTAL 252
Toledo WABR 270
Warren WLAZ 248
Wooster WGAU 226
Yellow Springs WRAV 360
Youngstown WDBF 261

Oklahoma City WKY 360
Oklahoma City WMAB 360
Okmulgee WPAC 360
Tulsa WEH 1599
Tulsa WLAL 360

OREGON

Medford KFAY 360
Pendleton KFFE 360
Portland KDYQ 360
Portland KFEC 360
Portland KFIF 360
Portland KGG 360
Portland KGN 360
Portland KGW 492
Salem KFCD 360

PENNSYLVANIA

Allentown WBI 1650
Allentown WCBA 280
Allentown WSAW 229
Altoona WGAW 261
Easton WMAP 246
E. Pittsburgh KDKA 326-1817
Erie WOVV 242
Grove City WSAJ 360
Harrisburg WABB 266
Harrisburg WBAK 266
Hauto WDS 1650.
Haverford WABQ 261
Hazleton WCJ 1650
Johnstown WTAC 360.
Lancaster WDBC 258.
Lancaster WGAL 248.
McKeesport WIK 234.
Parkesburg WQAA 360.

Philadelphia WCAU 286.
Philadelphia WDAW 395.
Philadelphia WFI 395.
Philadelphia WGL 350.
Philadelphia WIP 509.
Philadelphia WNAT 360.
Philadelphia WOO 509.
Philadelphia WWAD 360.
Pittsburgh KQV 360.
Pittsburgh WCAE 462.
Pittsburgh WJAS 360.
Reading WBBB 234.
Reading WRAW 238.
Scranton WQAN 280.
Scranton WRAY 280.
State College WPAB 360
Villanova WCAM 360.
Washington WABT 252
Wilkes-Barre WBAX 360.

RHODE ISLAND

Cranston WKAP 360.
E. Providence WKAD 240
Providence WEAN 273
Providence WJAR 360

Providence WRAH 275
Providence WSAD 261
Providence WTAG 258

SOUTH CAROLINA

Charleston WNAQ 360
Charleston WOAH 360

Clemson WSAC 360
Greenville WQAV 280

SOUTH DAKOTA

Brookings KFDY 360
Rapid City WCAT 240
Sioux Falls WFAT 360

Vermillion WEAJ 360
Yankton WNAX 244

TENNESSEE

Knoxville WNAV 360
Lawrenceburg WOAN 360
Memphis WMC 500

Nashville WABV 263
Tullahoma WJJ 1621

TEXAS

Abilene WQAQ 360
Amarillo WDAG 263
Amarillo WQAC 360

Austin WCM 360
Austin WNAS 360

Baytown KDPS 300-706-600
 Beaumont WMAM 360-485
 College Sta. WTAW 254
 Dallas KFFZ 226
 Dallas WDAO 360
 Dallas WFAA 476
 Dallas WRR 360
 El Paso WDAH 268
 El Paso WPAT 360
 Fort Worth WBAP 476
 Fort Worth KFJZ 254
 Galveston WHAB 360
 Galveston WIAC 360
 Galveston KFLX 240
 Houston KFCV 360
 Houston WCAK 360
 Houston WEAY 360
 Houston WEV 360
 Houston WRAA 360
 Orange KFGX 250
 Port Arthur WFAH 360
 San Antonio WCAI 385
 San Antonio WCAR 360
 San Antonio WOAI 385
 San Benito KFLU 236
 Sugarland KDLY 300-600
 Tyler WOAF 360
 Waco WJAD 360
 Waco WLAJ 360
 Waco WWAC 360
 Wichita Falls WKAF 360

UTAH

Ogden KFCP 360
 Salt Lake City KDYL 360
 Salt Lake City KDZV 360
 Salt Lake City KZN 360
 Salt Lake City WDYL 360

VERMONT

Bellows Falls WLAK 360
 Burlington WCAX 360
 Springfield WQAE 275

VIRGINIA

Fort. Monroe WNAW 360
 Norfolk WTAR 226

WASHINGTON

Aberdeen KNT 263
 Aberdeen KZE 300-450-550-600
 Bellingham KDZR 261
 Everett KFBL 224
 Lacey KGY 258
 Neah Bay KFHH 283
 Port Townsend KRP 300-600
 Pullman KFAE 360
 Seattle KDZE 455
 Seattle KDZT 360
 Seattle KFHR 270
 Seattle KFIY 236
 Seattle KFJC 233
 Seattle KHQ 360
 Seattle KJR 270
 Seattle KPE 300-600
 Seattle KTC 360
 Seattle KTW 360
 Spokane KFIO 252
 Spokane KFZ 283
 Tacoma KFBG 360
 Tacoma KFEJ 360
 Tacoma KGB 252
 Tacoma KMO 360
 Walla Walla KFCF 360
 Wenatchee KDZI 360
 Wenatchee KZV 360
 Yakima KFIQ 224
 Yakima KQT 360

WEST VIRGINIA

Charleston WPAZ 273
 Clarksburg WHAK 360

WISCONSIN

Beloit WKAW 242
 Fond du Lac KFIZ 273
 Kenosha WOAR 360
 Kenosha WOAR 229
 LaCrosse WABN 234
 Madison WGAY 360
 Madison WHA 360
 Milwaukee WAAK 280
 Milwaukee WCAY 261
 Milwaukee WHAD 280
 Milwaukee WIAO 453
 Neenah WIAJ 224
 Osseo WTAQ 226
 St. Croix Falls WRAL 248
 Maupaca WPAH 360

WYOMING

Douglas KFEV 263
 Laramie KFBU 283

CUBA

Havana PWX 400

HAWAII

Honolulu KDYX 360
 Honolulu KGU 360
 Honolulu KOG 300-550-600
 KUHUKU KIE 16975
 LIHUE LFHS 275
 OAHU KGI 16300

PORTO RICO

San Juan WKAQ 360

WIRELESS NORTH POLE

**WNP (Wireless North Pole) MacMillian Arctic Exped.
 (Using BURGESS BATTERIES exclusively).**

Canadian Broadcasting Stations

Call Letters—Meters Wave Length—Location—Owner

Coast and Land Stations

- CD 600, 1600 Ocean Falls, B. C. Pacific Mills, Ltd.,
Vancouver, B. C.
- CFAC 430 Calgary, Alta. Calgary Herald.
- CFBC 450 Timmins, Ont. King's Radio Shop.
- CFCA 400 Toronto, Ont. Star Publishing & Printing
Co., Toronto, Ont.
- CFCE 440 Halifax, N. S. Marconi Wireless Tel. Co. of
Canada, Montreal, Que.
- CFCF 440 Montreal, Que. Marconi Wireless Telegraph
Co. of Canada, Montreal, Que.
- CFCH 400 Iroquois Falls, Ont. Abitibi Power & Paper
Co., Montreal, Que.
- CFCK 410 Edmonton, Alta. Radio Supply Co.
- CFCN 440 Calgary, Alta. W. W. Grant Radio, Ltd.,
Calgary, Alta.
- CFCO 450 Bellevue, Ont. Semmelhaack-Dickson.
- CFCJ 410 Quebec, Que. La Cie L'Evenement.
- CFCB 440 Vancouver, B. C. Marconi Wireless Tel. Co.
of Canada, Ltd., Montreal, Que.
- CFCD 440 Winnipeg, Man. Canadian Westinghouse Co.,
Hamilton, Ont.
- CFCI 440 Walkerville, Ont. Motor Products Corpora-
tion, Walkerville, Ont.
- CFCL 400 Victoria, B. C. Centennial Meth. Church.
- CFCW 420 London, Ont. Radio Shop.
- CFCX 430 London, Ont. The London Advertiser, Lon-
don, Ont.
- CFPC 400 Fort Frances, Ont. International Radio De-
velopment Co., Fort Frances, Ont.
- CFQC 400 Saskatoon Electric Shop.
- CFTC Toronto, Ont. Bell Telephone Co. of Canada,
Montreal, Que.
- CFUC 400 Montreal, Que. University of Montreal.
- CFVC 450 Courtenay, B. C. Roy Russel Brown.
- CFYC 400 Vancouver, B. C. V. W. Odlum, Vancouver,
B. C.
- CHBC 410 Calgary, Alta. The Alberta Pub. Co., Ltd.,
Calgary, Alta.
- CHCA 430 Vancouver, B. C. Radio Corporation of Van-
couver, B. C.
- CHCB 440 Toronto, Ont. Marconi Wireless Telegraph
Co. of Canada, Montreal, Que.
- CHCD 410 Quebec, Que. Canadian Wireless & Elect.
- CHCS 410 London, Ont. London Radio Shoppe, London,
Ont.
- CHCE 400 Victoria, B. C. West'n Can. Radio Sup.
- CHCL 440 Vancouver, B. C. Vancouver Merch. Exch.
- CHCX 420 Montreal, Que. B. L. Silver, Montreal.
- CHCZ 420 Toronto, Ont. The Globe Printing Co.
- CHOC 400 Vancouver, B. C. Canadian Westinghouse
Co., Ltd., Hamilton, Ont.
- CHXC 450 Ottawa, Ont. J. R. Booth, Jr., Ottawa, Ont.
- CHYC 410 Montreal, Que. Northern Electric Co.
- CJBC 420 Montreal, Que. Dupuis Freres, Montreal.
- CJCA 450 Edmonton, Alta. The Edmonton Journal,
Ltd., Journal Bldg., Edmonton, Alta.
- CJCB 400 Nelson, B. C. James Gordon Bennett, Nelson,
B. C.
- CJCD 410 Toronto, Ont. T. Eaton Co., Ltd., Toronto,
Ont.
- CJCE 420 Vancouver, B. C. Sprott-Shaw Radio Co.
- CJCF 420 Kitchener, Ont. News Record, Ltd., Kitch-
ener, Ont.

- CJCI** 400 St. John, N. B. Maritime Radio Corp.
CJCN 410 Toronto, Ont. Simons, Agnew & Co., Toronto, Ont.
CJCY 420 Calgary, Alta. E. Taylor, Calgary, Alta.
CJGC 430 London, Ont. London Free Press Printing Co., Ltd., London, Ont.
CJNC 400 Winnipeg, Man. Tribune Newspaper Co., Ltd., Winnipeg, Man.
CJSC 430 Toronto, Ont. The Evening Telegram.
CKAC 430 Montreal, Que. La Presse Pub. Co., Montreal, Que.
CKCB 450 Winnipeg, Man. T. Eaton Co., Ltd., Toronto, Ont.
CKCD 410 Vancouver, B. C. Vancouver Daily Province, Vancouver, B. C.
CKCE 450 Toronto, Ont. Canadian Independent Telephone Co., Toronto, Ont.
CKCK 420 Regina, Sask. Leader Publishing Co. of Regina, Ltd., Regina, Sask.
CKCR 400 St. John, N. B. Jones Electric Radio Co., St. John, N. B.
CKCZ 420 Toronto, Ont. Canadian Westinghouse Co., Ltd., Hamilton, Ont.
CKOC 410 Hamilton, Ont. Wentworth Radio Supply Co., Hamilton, Ont.
CKQC 410 London, Ont. Radio Supply Co. of London, London, Ont.
CKY 450 Winnipeg, Man. Manitoba Teleph. System.
CKZC 420 Winnipeg, Man. Salton Radio Engineering Co., Winnipeg, Man.
CZ 600 Anyox, B. C. Granby Consolidated Mining and Power Co., Vancouver, B. C.
DA 600 Swanson Bay, B. C. Whalen Pulp & Paper Co., Ltd., Vancouver, B. C.
DD 600 Buckley Bay, B. C. Massett Timber Co., Vancouver, B. C.
DG 1475, 1900 Shawinigan Falls, Que. Shawinigan Water and Power Co., Montreal, Que.
DH 1900 Maisonneuve, Que. Shawinigan Water & Power Co., Montreal, Que.
DJ 600 Thurston Harbor, B. C. Whalen Pulp & Paper Co., Vancouver, B. C.
DK 600 Port Alice, B. C. Whalen Pulp and Paper Co., Vancouver, B. C.
DL 600, 2000 Margaret Bay, B. C. Western Packers, Ltd., Vancouver, B. C.
DO 3000 Glace Bay, N. S. Marconi Wireless Tel. Co. of Canada, Montreal, Que.
DQ 3300 Markham, Ont. Marconi Wireless Tel. Co. of Canada, Montreal, Que.
DS 1590 Iroquois Falls, Ont. Abitibi Power & Paper Co., Montreal, Que.
DT 1590 Twin Falls, Ont. Abitibi Power & Paper Co., Montreal, Que.
DU 2000 Edmonton, Alta. Bert L. Perry, Edmonton, Alta.
DV 1900 Victoriaville, Que. Shawinigan Water & Power Co., Montreal, Que.
DW 1900 Gouin Dam, Que. Shawinigan Water & Power Co., Montreal, Que.
DX 1900 Quebec, Que. Shawinigan Water & Power Co., Montreal, Que.
DY 1475, 1900 Thetford Mines, Que. Shawinigan Water & Power Co., Montreal, Que.
DZ 1550 Hamilton, Ont. Wood, Alexander & James, Toronto, Ont.
FB 2000 Fort Smith, Alta. Bert L. Perry, Edmonton, Alta.

RADIO DRY CELL BATTERIES FOR VACUUM TUBES

These tables contain data on tubes and batteries obtained from various sources including test data of the Burgess Battery Company.

For convenience, "B" batteries are classified into three groups according to their weight of 22.5 volt units. Reference in Table II is to the following:

- 1 lb. class No. 4156 "B" Battery
- 2 lb. class No. 5156, 5158 "B" Battery
- 5 lb. class No. 2156, 2158 "B" Battery

TABLE II

Hours of Dry Cell Battery Service on Various Vacuum Tubes

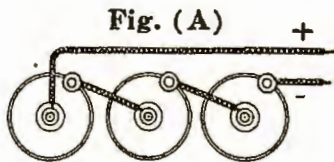
VACUUM TUBE STYLE NUMBER		UV 199 C 299 DV 1	WD 11 WD 12	UV 201 A C 301 A	UV 200 C 300					
BURGESS "A" BATTERY HOURS Connections as shown in Table I										
BURGESS BATTERIES	No. 6A	for 1 tube	0.06	700	0.25	110	0.25	110	Not a Dry Battery Tube	
		2 tubes	0.12	300	0.50	110	0.50	110		
		3 tubes	0.18	180	0.75	110	0.75	110		
		4 tubes	0.24	150	1.00	110	1.00	110		
	No. 232 No. 2370	1 tube	0.06	95	Not used with these Batteries					
		2 tubes	0.12	95						
		3 tubes	0.18	95						
		4 tubes	0.24	95						
BURGESS "B" BATTERY HOURS Current Assumed at 1.5 Milamp. per tube.										
Class of Battery:	1lb. 2lb. 5lb.	1lb. 2lb. 5lb.	1lb. 2lb. 5lb.	1lb. 2lb. 5lb.	1lb. 2lb. 5lb.					
for 1 tube	300 800 2500	300 800 2500	300 800 2500	400 1000 3000	Detector tube only, one per set, current assumed at 1.0 milamp.					
for 2 tubes	150 400 1500	150 400 1500	150 400 1500							
for 3 tubes	300 1000	300 1000	300 1000							
for 4 tubes	750	750	750							
BURGESS "C" BATTERY HOURS										
Practically unlimited, affected by shelf life of battery and set insulation. Use largest size battery possible.					Not an Amplifier tube.					

TABLE 1

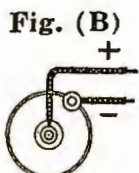
Dry Cell Batteries for Various Vacuum Tubes

VACUUM TUBE CHARACTERISTICS	CLASSIFICATION OF TUBES WITH RESPECT TO NECESSARY BATTERIES AND TUBE FILAMENT CURRENT			DRY CELL BATTERY TUBES			Storage Battery Tubes	
				Low Current	High Current			
	Vacuum Tube Style Number	UV 199 C 299 DV 1.			WD 11 WD 12	UV201A C301A	UV 200 C300	
	Filament Volts	3.0			1.1	5.0	5.0	
	Filament Amperes	0.06			0.25	0.25	1.0	
Rheostat Ohms	30			30	25 to 30	6		
BATTERY VOLTS	A "A" Battery Volts (Filament Battery)		4.5			1.5	6.0	6.0
	"B" Battery Volts (Plate)	Tube as Detector	22.5 to 45	22.5 to 45	22.5 to 45	Variable 15 to 24		
		Tube as Amplifier	45 to 90	45 to 90	45 to 112.5	Not an Amplifier		
	"B" Battery Current (Plate) Milamperes	"B" Volts, 22.5 to 90 No. "C" Volts	0.3 to 4.0	0.4 to 4.0	0.6 to 6.0	0.8 Not used with high voltage		
			These currents can be reduced by a "C" voltage					
C "C" Battery Volts (Grid Bias) Tube as ampl.	"B" Volts, 45 - 67.5 67.5 - 90 90. -112.5	1.5 to 3.0 3.0 to 4.5	1.5 to 3.0 3.0 to 4.5	1.5 to 3.0 3.0 to 4.5 4.5 to 6.0	Not used as an Amplifier			
NUMBER OF BURGESS "A" BATTERIES REQUIRED	Number of Series No. 6 "A" Batteries to provide proper voltage.		3	1	4	Not a Dry Cell Battery Tube.		
	Number of Parallel No. 6 "A" Batteries to provide proper current capacity.		1 for every 3 tubes	1 for every 1 tube	1 for every 1 tube			
	Smallest possible number of No. 6 "A" Batteries	for 1 tube for 2 tubes for 3 tubes for 4 tubes	3 Fig.(a) 3 Fig.(a) 3 Fig.(a) 3 Fig.(a)	1 Fig.(b) 2 Fig.(d) 3 Fig.(f) 4 Fig.(g)	4 Fig.(f) 8 Fig.(c) 12 Fig.(e) 16 Fig.(g)			
	Smallest possible number of No. 232 or 2370 Batteries in parallel.	for 1 tube for 2 tubes for 3 tubes for 4 tubes	1 Fig.(b) 2 Fig.(d) 3 Fig.(f) 4 Fig.(h)	Not used with these batteries.				

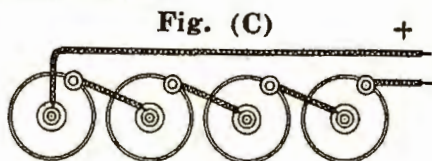
VARIOUS DRY CELL CONNECTIONS



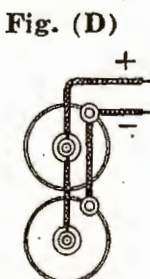
Series, 4.5 Volts



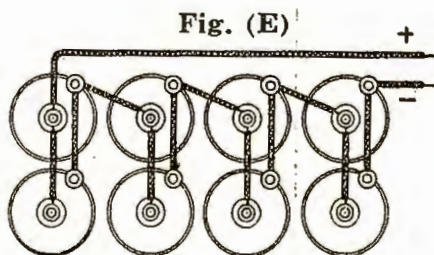
Single Cell
1.5 Volt



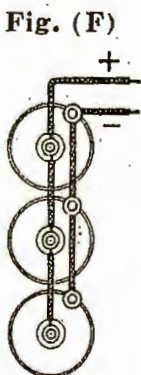
Series 6.0 Volts



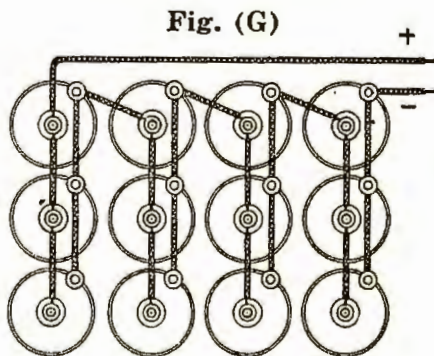
Parallel
1.5 Volt



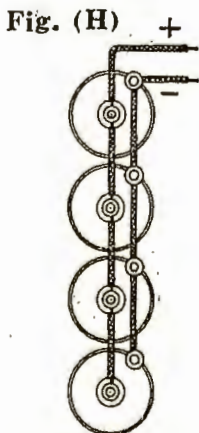
Parallel Series, 6.0 Volts



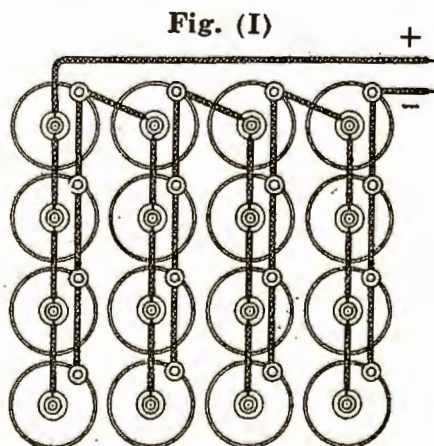
Parallel
1.5 Volt



Parallel Series, 6.0 Volts



Parallel
1.5 Volt



Parallel Series, 6.0 Volts

The **BURGESS B**
for many years has been manufactu

FLASHLIGHT BATTERIES
FLASHLIGHT CASES
FLASHLIGHT LAMPS

A Laborator



BURGESS

BATTERY COMPANY

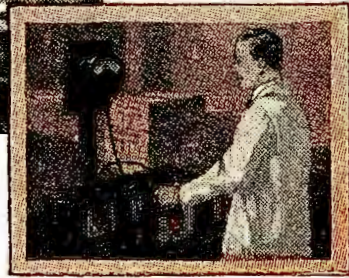
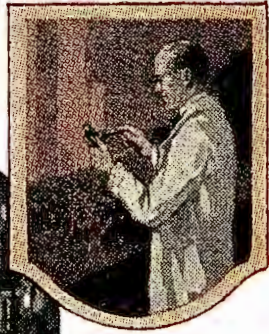
Manufacturing and distributing a complete line of

RADIO DRY BATTERIES

IGNITION DRY BATTERIES

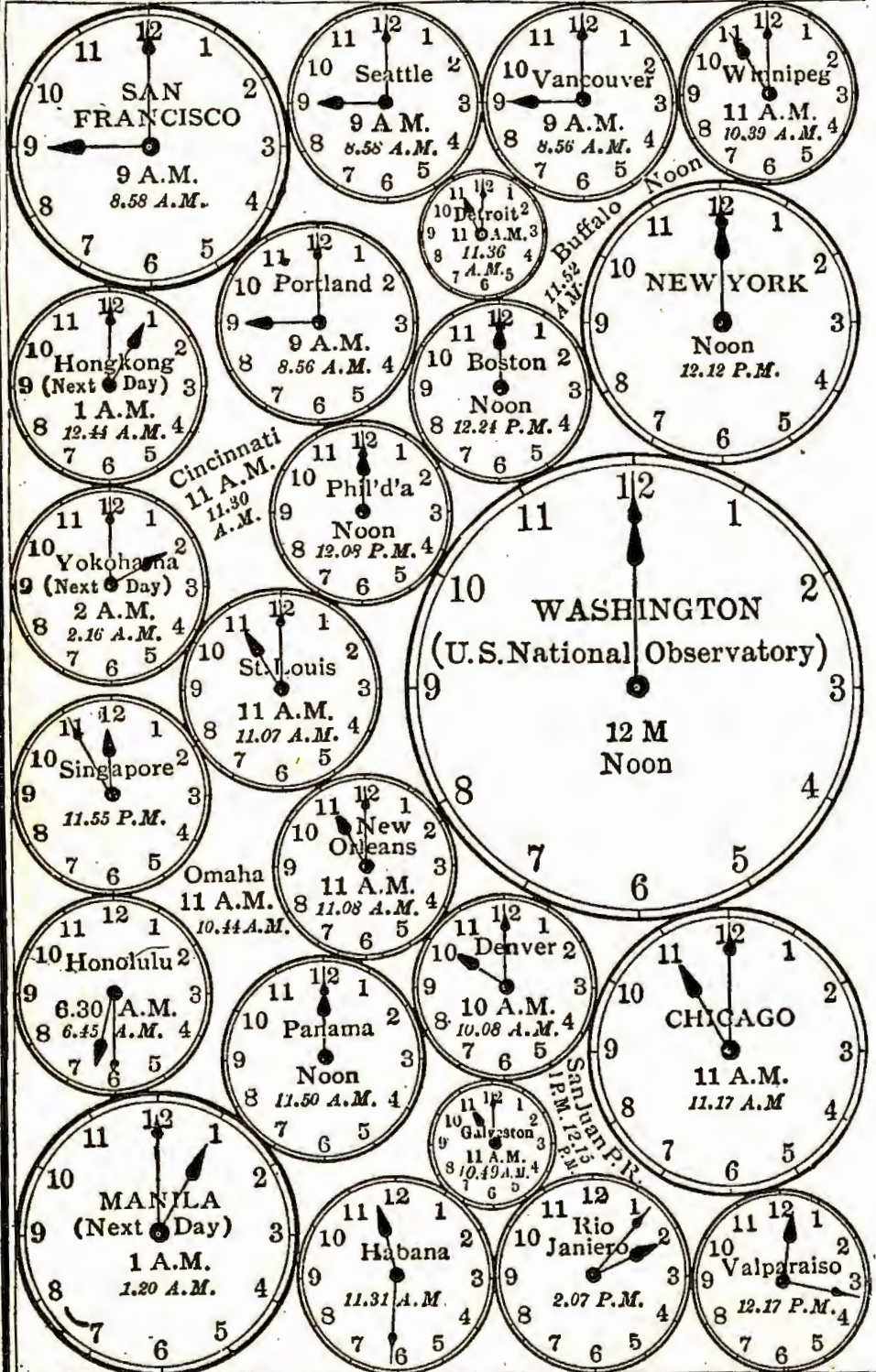
TELEPHONE DRY BATTERIES

Every Product



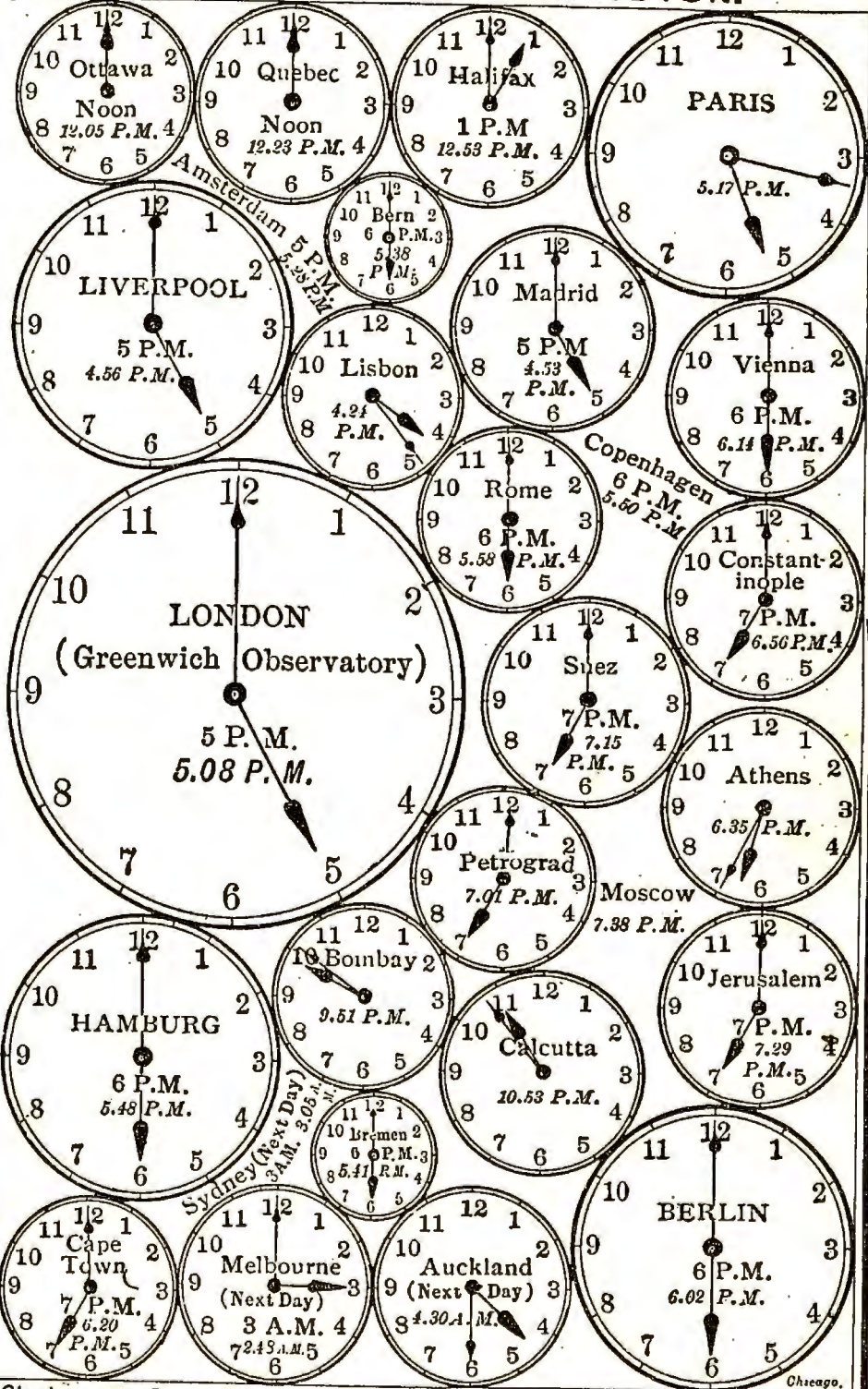
BATTERIES

THE CLOCKS OF THE PRINCIPAL CITIES



Where "Standard" (Artificial) Time is used, it is shown by the

ES, WHEN IT IS NOON AT WASHINGTON.



Clocks and in Roman Type; Italic Type indicates the Sun Time.

Chicago.

90° 105° 1 120° 135° 150° 2 165° 180° 185° 3 195° 190° 4 105°

THE WORLD

ON MERCATOR'S PROJECTION

George F. Cram Company, Chicago.

A
80
B
70
C
60
50
D
40
30
20
10
E
0
10
20
30
40
50
60
70
G



90° 105° 1 120° 135° 150° 2 165° 180° 185° 3 195° 190° 4 105°
Longitude East from Greenwich



90° 75° 60° 45° 30° 15° 0° 15° 30° 45° 60° 75° 90°

90° 75° 60° 45° 30° 15° 0° 15° 30° 45° 60° 75° 90°
 Longitude West from Greenwich Longitude East from Greenwich

Dry Cell Batteries in Radio

Dry cell batteries are an important part of long distance radio receiving equipment because they are a convenient, economical, and safe source of electrical energy and Burgess Dry Cell Batteries are preëminently satisfactory for these purposes.

As is well known, a broadcasting station sends out enormous electrical energy which travels away from the sending antenna at a speed great enough to encircle the earth over seven times in one second. This energy gradually spreads out over an ever increasing circle around the antenna and its strength diminishes rapidly as the distance from the station increases.

With a suitable receiving antenna, either an indoor loop or outside aerial, some of the energy from the sending station can be collected. At distances from the sending station the collected energy is such an infinitesimal quantity that it cannot operate any of the electrical apparatus, such as telephones through which the signals should be heard. If the receiving set can add energy to that obtained from the antenna, it will be possible to operate not only telephones but loud speakers and other devices. Dry cell batteries provide this extra energy, and it is regulated through the receiving set by the sending station energy collected from the antenna. A comparison can here be made with an automobile in which the energy is the motor, but controlled entirely by the throttle, which responds to the slightest movement on the sector. The delicate energy from the aerial in a receiving set actuates the throttle and controls the dry battery energy, modulating, multiplying and intensifying it so the listener enjoys the program sent out by the broadcasting stations.

The throttling or transformation of the battery energy, into sound in the headsets, for example, is done by the vacuum tubes in a very involved manner. The "A" or filament battery donates its energy to the set by lighting the filament of the tube and providing a path for the energy from the "B" or plate battery to flow through the tube and to the phones or loud speaker.

For good results through the receiving set, the dry cell batteries must have certain characteristics, for example, a large energy capacity so that they can be used intensively or produce a loud sound, availability to hold their energy and not allow it to leak out even when they are in use, a constancy of delivery of energy so it can be easily and smoothly controlled by the receiving set, a smoothness of discharge into the set to prevent interference with the control.

The energy of a battery is proportional to its voltage and its current. The "A" battery energy is generally provided at a low voltage and a high current. The "B" battery energy, on the other hand, is supplied at a higher voltage and low current; both, however, are necessary in a receiving set. Increasing the "A" battery energy will put more into the set but it will not and cannot replace the "B" battery energy which must also be there in suitable quantity.

Some sets contain several tubes as detectors and amplifiers, but the general conditions above stated always hold true. The several tubes may make it possible to detect smaller antenna energy or obtain a better selection of incoming signals, but to obtain more sound, more energy will always be required, and this means either more batteries or more energy drawn from the batteries.

Dry cell batteries have certain characteristics which should be here mentioned. A dry cell consists of a zinc container filled with active chemicals in the center of which is a

brass capped carbon rod. The zinc can is the negative (—) pole or electrode and the center carbon is the positive (+) pole or electrode. The voltage of a dry cell is about 1.5 volts when it is not in circuit (open circuit voltage) and it is lower when it is in circuit (closed circuit voltage), depending on the cell resistance and the resistance of the circuit to which it is connected.

“A” BATTERIES

The first vacuum tubes required storage batteries on the “A” or filament circuit because of the large amount of energy required by these tubes. Many tubes are now on the market which operate the entire set on dry cell batteries. The voltage and current requirements of these tubes varies with their type and information concerning them is furnished with the tube by the manufacturers.

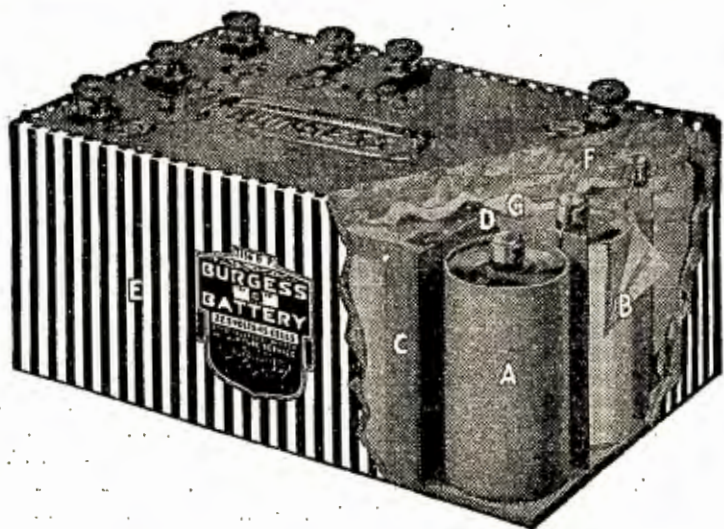
Originally, the ordinary six-inch Ignition Dry Cell was used as an “A” battery with these tubes and with fair success. The Burgess Battery Company, however, as soon as the dry cell vacuum tubes began to appear, saw the need of an improved dry “A” battery. This problem was solved and the Burgess No. 6 Radio “A” Battery is the result.

This battery is especially designed for the “A” circuit of dry cell vacuum tubes and tests have shown that for this purpose it will furnish approximately double the hours of service that will be furnished by an ordinary No. 6 Ignition Cell. Furthermore, after the voltage of this battery has dropped below the tube voltage rating, the battery can be used for ordinary dry cell work.

The unique characteristics of this battery are secured by a special mixture of chemicals, a low resistance lining between the chemicals and the zinc. This battery maintains a high average discharge voltage and currents as high as 0.25 ampere while in service and has but small depreciation or loss of energy when not in use.

“B” BATTERIES

Burgess “B” Batteries are an assembly of small specially designed dry cells soldered together in series to produce the high voltage necessary for the vacuum tube. These batteries have been “the standard of quality in the radio field” since 1917, and the accompanying illustration shows some of the unique construction of these batteries.



“A” is the Burgess one-piece seamless zinc can which requires heavier, more pure and more uniform metal than a soldered can, all of which add to the life of the cell. Also,

it prevents any leakage through a weak joint and eliminates voltage differences on the inside of the can, a condition which might cause stray currents and potential differences and results in noisy voltage fluctuations and short lived battery.

"B" is the moisture-proof wrapper around each cell, one of the ways in which individual insulation is secured.

"C" is a sealing material between cells to provide additional insulation and prevent movement between cells.

"D" is the waterproof partition between cells, another feature in the individual cell insulation and a means of confining internal moisture due to cell discharge within the compartment.

"E" is the heavy waterproof non-metallic insulating material, the first line of defense against moisture getting into the battery. As it is non-conducting, it will not collect stray currents and produce capacity effects between adjacent batteries.

"F" is the heavy triple seal over the top, another factor of safety which adds to the strength of the battery and increases the moistureproof qualities.

"G" is the webbing between seals, adding to the strength of the top.

The features which cannot be shown in the picture are as good as those enumerated above. They include a special mix or combination of chemicals, the results of much research work, a critical selection of raw materials, the best of manufacturing methods and a most rigid technical control.

All Burgess "B" Batteries embody the same features of construction. There is no difference in the quality of the energy furnished. The largest sizes of batteries give the greatest energy or hours of service. The higher voltage batteries are simply the equivalent of what a radio listener would get by connecting a number of "B" batteries in series. We advise in all cases that single units of 22.5 volts be used in place of the higher voltage units, as this permits a shifting of the various batteries as they become unequally discharged.

"C" BATTERIES

Another type of battery which is coming into more general use is the "C" battery required on some vacuum tubes operating either as detectors or amplifiers. A "C" battery is a low voltage battery connected between the filament and the grid to give the grid a different potential or "bias." The requirements of a "C" circuit call for a steady voltage, a low resistance and a long-lived battery, which requirements are amply met in the Burgess "C" Batteries. These batteries are built with the same construction as the Burgess "B" Batteries and have been worked satisfactorily for all "C" use.

As each type of tube has different characteristics, it is impossible to give circuit diagrams or voltage of all "C" circuits. These data are usually furnished with the tube or receiving set.

TESTING RADIO BATTERIES

"A" Batteries

"A" batteries should be tested with a voltmeter. It is true that dry cells are usually "flashed" to show the short circuit amperage but this is no indication of their capacity—in fact, some of the highest capacity dry cells have only a nominal flash of 25 to 30 amperes. When the closed circuit of the "A" battery is below the "end point" voltage of the tube it is no longer useful for radio but it can still be used for ignition and bell service.

A low voltage "A" battery usually results in weak signals and a minimum filament resistance.

"B" Batteries

The correct test of a "B" battery is the voltage test. While battery users and dealers are in the habit of testing dry batteries with an ammeter, this test is worthless on a "B" battery. The amperage indicates, to a certain extent, the internal resistance of a battery, but since the resistance of a 22.5-volt battery is about 5 ohms, and the resistance of a vacuum tube is from 10,000 to 30,000 ohms, it is apparent that an increase of, say five ohms, in the battery resistance will have no appreciable effect on the combined "B" battery and tube circuit. In other words, a drop in the amperage of a "B" battery, so long as the voltage is still satisfactory, means little regarding the usefulness of the battery.

The important thing to know is the voltage which the battery will deliver to the plate, and the voltage test is of real value only when made with a high grade, high resistance, and accurate voltmeter. The ordinary pocket voltmeter has a much lower resistance than the vacuum tube. Because of this the voltage shown on a pocket voltmeter will be lower than that actually delivered to a tube with its high resistance. Furthermore, these low resistance voltmeters are often inaccurate. On the other hand, a high grade accurate instrument has approximately the same resistance as the vacuum tube. Therefore, it is certain that when a "B" battery indicates a given voltage on a voltmeter of the latter type, it will deliver at least as much voltage to the tube.

While the nominal voltage rating of a fifteen cell "B" battery is given as 22.5 volts, the actual voltage of a satisfactory "B" cell is slightly under 1.5 volts. Consequently the complete battery, when tested on a voltmeter, will not test quite 22.5 volts, but it should not be considered defective for this reason. As a matter of fact, the U. S. Army specifications for Burgess 4156 "B" Batteries call for 21.5 volts.

The minimum working voltage of a detector tube is about 17 volts. Therefore, a "B" battery should give results until its voltage drops to this figure. Even then it need not be discarded. It can be connected in series with other batteries and used on the amplifier tube. Here it should be serviceable until its voltage has dropped to about 10 volts. In this connection, however, one thing should be watched. Some "B" batteries become noisy when their voltage drops, and if this is the case, the battery should

not be used. This is especially true of "B" batteries of ordinary construction, where no special moisture proofing or insulation are provided to eliminate noisy voltage fluctuations.

A low voltage "B" battery usually produces weak or wavering signals.

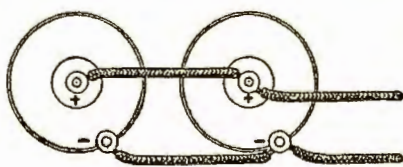
"C" Batteries

These batteries, like "B" batteries, should be tested by a high grade voltmeter and when their voltage has dropped to about 1.0 volt per cell they should be replaced.

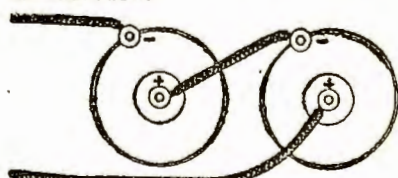
A low voltage "C" battery usually produces distorted signals.

LIFE OF RADIO BATTERIES

"How long will a battery last?" is a common question. This cannot be answered in terms of weeks or months but must be answered in hours of service. One Burgess "A" Battery on a 0.25 ampere tube operating to an end point of 1.0 volts under usual intermittent service, will give over 100 hours of service; two batteries in parallel will give approximately 250 hours. In other words, two batteries connected in parallel will give more than double the service of a single battery. Batteries are connected in parallel when the positive (+) terminal of one is connected to the positive (+) terminal of the other. This method of connecting batteries does not change the voltage of the combination but increases the energy delivered or, in other words, the hours of service.



Parallel.



Series.

Batteries are connected in series when the positive (+) terminal of one is connected to the negative (-) terminal of another. When connected in this way the voltage of the combination is equal to the sum of

the voltages of the individual batteries. Thus, a 4.5 volt "A" battery is composed of three individual "A" batteries connected in series; each cell having a voltage of 1.5.

As to the life of Burgess "B" Batteries, the smallest of these will normally give approximately 150 hours of service; the medium size about 400 hours; and the larger sizes about 1,500 hours. Of course, the conditions under which the batteries are being used will have something to do with the amount of current drawn from the battery, hence the number of hours of service furnished. Loud speaking units draw far more current than the ordinary receiving sets. For this reason "B" batteries cannot be expected to give nearly as much service on loud speakers.

The shelf-life of a dry battery is an important consideration. By shelf-life is meant the amount the battery will depreciate when not in use—in other words, when "on the shelf." Burgess Dry Batteries are well known for their long shelf-life, but any battery will become useless in time, even if not used. The larger the battery, other things being equal, the longer the shelf-life. As a general proposition it is well to remember that fresh batteries are to be desired.

BURGESS "B" BATTERIES

No. 4156



Size—Length, $3\frac{3}{8}$ " ; width, 2" ;
height, $2\frac{1}{2}$ ".

Weight, 1 pound.

Flexible wire terminals. Normal maximum voltage 22.5 with tap to give 18 volts from the negative.

Approximate capacity at 3.0 milliamperes 150 hours, but lightest in weight of the block batteries. Signal Corps Type BA-2. Excellent shelf life and light weight make it adaptable for aeroplane, portable and small stationary sets.

No. 5156



Size—Length, $4\frac{1}{8}$ " ; width,
 $2\frac{9}{16}$ " ; height, $2\frac{3}{4}$ ".

Weight, 1 pound 9 ounces.

Flexible lead with flat connector on positive terminal, binding post on negative terminal. Normal maximum voltage, 22.5.

Approximate capacity at 3.0 milliamperes 400 hours.

This is an intermediate type which will fit into the cabinet of most sets using dry cell electron tubes.

"Standard of Comparison"

BURGESS "B" BATTERIES

No. 2156

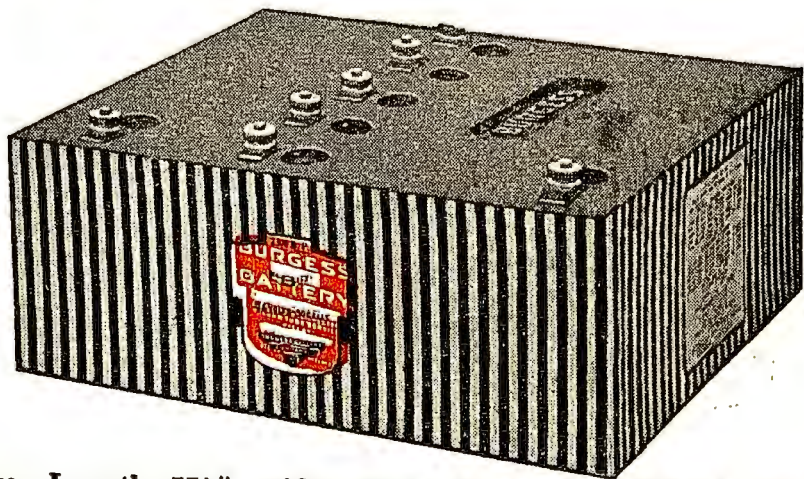


Size—Length, $6\frac{5}{8}$ " ; width, 4" ; height, 3".
Weight, 5 pounds.

Binding post taps. Normal maximum voltage 22.5 with taps to give 16.5, 18, 19.5 and 21 volts from the negative.

Approximate service at 3.0 milliamperes, 1500 hours. The largest and longest lived "B" battery, usually referred to as "Navy Type." Especially suited for stationary sets where space and weight are not an important factor.

No. 2306



Size—Length, $7\frac{7}{8}$ " ; width, $6\frac{5}{8}$ " ; height, 3". Weight, $9\frac{1}{2}$ lbs.

Binding post taps. Normal maximum voltage 45 with taps to give 16.5, 18, 19.5, 21 and 22.5 volts from the negative.

This battery is the equivalent of two No. 2156 wired in series. Electrical characteristics are the same as the 2156.

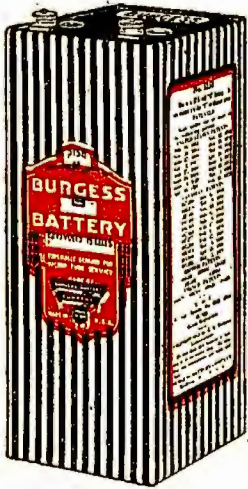
"The Pioneer Radio Battery"

BURGESS "B" BATTERIES

VERTICAL TYPE

The advantages of these batteries are that they occupy minimum table space, will fit inside most receiving cabinets, and can be used in any position. Convenient in form for use with dry cell "A" batteries.

No. 5158



Size—Length, 2 $\frac{1}{2}$ " ; width, 2 $\frac{1}{2}$ " ; height, 6".

Weight, 2 pounds.

Binding post terminals at top. Normal maximum voltage, 22.5.

Approximate capacity at 3.0 milliamperes, 400 hours.

This battery is designed especially for use in sets employing No. 6 dry cells for filament current. Its dimensions and weight are those of the ordinary No. 6 "A" battery, and this feature of similarity in size makes it possible to place both the "A" and the "B" batteries in the same cabinet without waste of space; to interchange the positions of these batteries in self-contained sets; and to set up a compact unit containing both the "A" and the "B" batteries.



No. 2158

Size—Length, 4 $\frac{1}{8}$ " ; width, 3 $\frac{1}{8}$ " ; height, 7". Weight, 5 lbs.

Binding post terminals. Normal maximum voltage, 22.5. Electrical characteristics same as No. 2156.

"Construction Fully Patented"

BURGESS "C" BATTERIES

No. 5360



Size—Length, $2\frac{7}{8}$ " ; width, $1\frac{1}{8}$ " ; height, $2\frac{5}{8}$ ". 4.5 volts. Weight, 4 ounces.

Flexible wire terminals.

Three cell, 4.5 volt battery of regular Burgess construction, which assures a long shelf life. Estimated life on "C" circuit of approximately 1000 hours.

No. 2370



Size—Length, 4" ; width, $1\frac{3}{8}$ " ; height, 3". Weight, 1 pound.

Binding post terminals. Three cells. Normal maximum voltage 4.5.

Estimated life on "C" circuit of approximately 1500 hours.

No. 5540



Size—Length, 4" ; width, $\frac{7}{8}$ " ; height, $2\frac{7}{8}$ ". Weight, 9 oz.

Binding post taps and flexible wire terminal. Five cells. Normal maximum voltage 7.5 with taps to give 3.0, 4.5, 6.0 and 7.5 volts from positive.

Estimated life on "C" circuit of approximately 1000 hours.

"Assure Clear Receiving"

BURGESS "A" BATTERIES

No. 6 "A" DRY BATTERY

for use with Dry Cell Vacuum Tubes

Size $2\frac{1}{2}$ " diameter, 6" high, weight 2 pounds
Normal voltage 1.5. Binding post terminals

Designed especially for service on the "A" or filament circuit of dry cell vacuum tubes. Will give over twice the life of an ordinary No. 6 Ignition battery at approximately the same cost and has a rapid recovery to high voltage after short periods of rest with practically no voltage loss when not in use.

Made only in single cell units which makes possible convenient combinations for all types of dry cell tubes and eliminates the hazard and expense of multiple cell units.

This battery is also usable for general purpose service after its voltage has dropped below the operating vacuum tube requirement.



"Over Twice the Life"



ASK ANY RADIO ENGINEER.

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LABORATORIES AND WORKS: MADISON, WISCONSIN

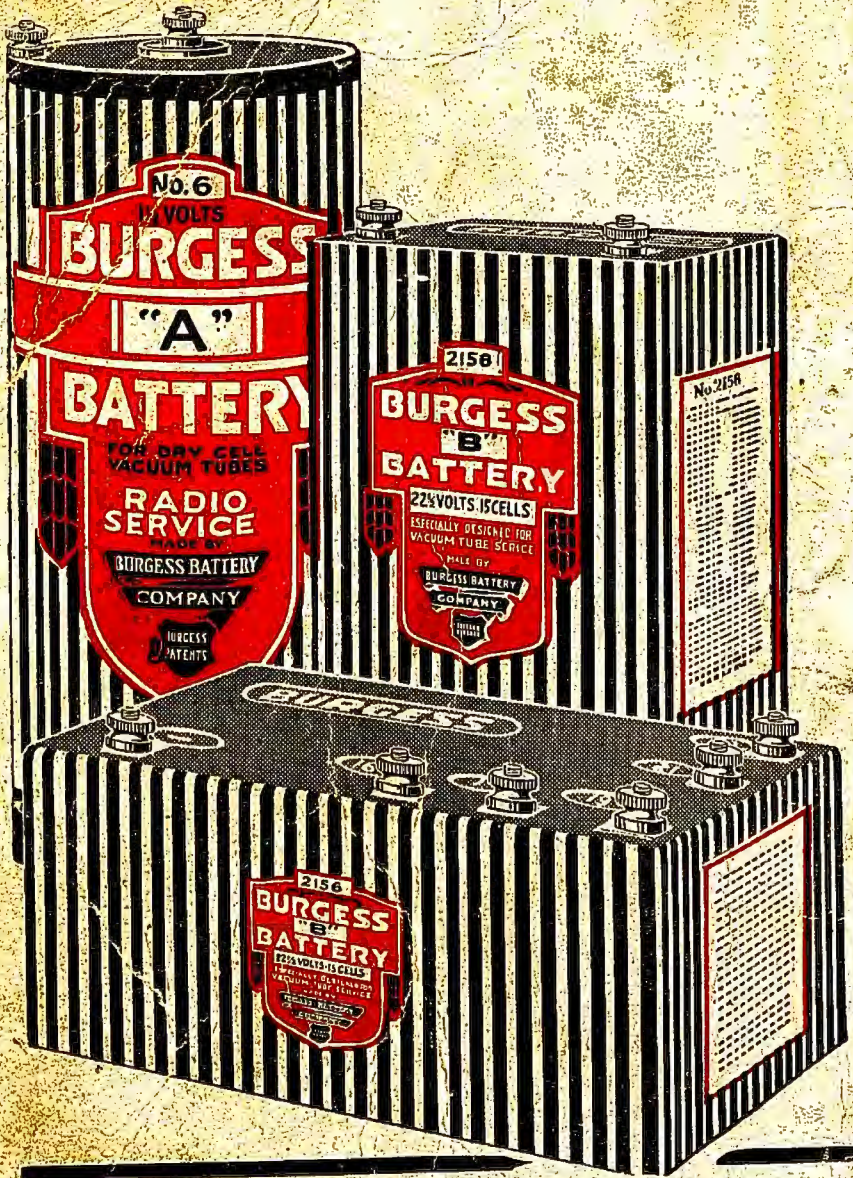
BRANCHES

NEW YORK	BOSTON	KANSAS CITY	MINNEAPOLIS
WASHINGTON	PITTSBURGH	ST. LOUIS	NEW ORLEANS

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