

An Archivist's Note:

From KDKA
To International Short
Wave Broadcasting
In Ten Years; The
September 1930 *Radio-*
Craft SW Station List

By Bart Lee, K6VK, CHRS Archivist

Short-Wave Stations of the World

Meters	Kilo-cycles	Stations
4.97-5.35	60,000-56,000	Amateur Telephony and Television.
8.57	35,000	W2XCU, Ampere, N. J.
11.55	25,960	G5SW, Chelmsford, England Experimental.
12.48	24,000	W6AQ, San Mateo, Calif.
14.06	21,320	DIV, Nauen, Germany.
14.50	20,680	LSN, Monte Grande, Argentina, after 10:30 p.m. Telephony with Europe.
14.62	20,500	W9XF, Chicago, Ill. (WENR).
14.89	20,140	DGW, Nauen, Germany, 2 to 9 p.m. Telephony to Buenos Aires.
15.03	19,950	LSG, Monte Grande, Argentina. From 9 a.m. to 1 p.m. Telephony to Paris and Nauen (Berlin).
15.07	19,900	Monte Grande, Argentina. 8-10 a.m.
15.10	19,850	WMI, Deal, N. J.
15.12	19,830	FTD, Ste. Assise, France.
15.40	19,460	FZU, Tamatave, Madagascar.
15.45	19,400	FRO, FRE, Ste. Assise, France.
15.59	19,350	Nancy, France, 4 to 5 p.m.
15.55	19,300	FTM, Ste. Assise, France. 10 a.m. to noon.
15.60	19,220	WNC, Deal, N. J.
15.85	18,920	XDA, Mexico City, Mex. 12:30 to 2:30 p.m.
15.94	18,820	PLE, Batavia, Java. Broadcasts Tues. 8:40 to 10:40 a.m. Telephony with Kootwijk (Amsterdam).
16.10	18,620	GBI, Bodmin, England. Telephony with Montreal.
16.11	18,610	GBU, Rugby, England.
16.35	18,350	WWD, Deal Beach, N. J. Transatlantic telephony.
16.38	18,310	GBS, Rugby, England. Telephony with New York General Postoffice, London.
16.44	18,240	FTE, Ste. Assise, France.
16.50	18,170	CGA, Drummondville, Quebec, Canada. Telephony to England. Canadian Marconi Co.
16.54	18,130	GBW, Rugby, England.
16.57	18,120	GBK, Rugby, England.
16.61	18,050	KQJ, Bolinas, Calif.
16.70	17,950	FZU, Tamatave, Madagascar.
16.80	17,850	PLF, Batavia, Java. ("Radio Malabar"). Works with Holland.
16.82	17,830	PCV, Kootwijk, Holland. 3 to 9 a.m.
16.88	17,770	PHI, Holzen, Holland. Beam station to Dutch colonies. Broadcasts Mon., Wed., Thurs., Fri., Sat., 8:10-10:40 a.m. N. V. Philips Radio, Amsterdam.
16.90	17,750	HSIP, Bangkok, Siam. 7-9:30 a.m., 1-3 p.m. Sundays.
17.20	17,440	AGC, Nauen, Germany.
17.34	17,300	W2XK, Schenectady, N. Y. Tues., Thurs., Sat. 12 to 5 p.m. General Electric Co.
17.40	17,200	W6AI, Oakland, Calif.
17.45	17,100	W7XA, Portland, Ore.
17.50	17,000	W2XC, Seattle, Wash.
17.55	16,900	W2XCU, Ampere, N. J.
17.60	16,800	W9XL, Anoka, Minn., and other experimental stations.
18.00	16,660	G2GN, S.S. "Olympic."
18.10	16,560	G2AA, ship phone.
18.37	16,320	PLK, Sydney, Australia. Phone to England.
18.40	16,300	VIC, Kootwijk, Holland. Works with Randenon from 7 a.m. Netherland State Telegraphs.
18.56	16,150	GBX, Rugby, England.
18.75	15,990	FRE, Saigon, Indo-China.
18.80	15,950	PLG, Batavia, Java. Afternoons.
19.00	15,750	FBBZ, French phone to G2GN.
19.56	15,340	W2XAD, Schenectady, N. Y. Broadcasts Sun. 2:30 to 5:40 p.m., Tues., Thurs. and Sat. noon to 5 p.m., Fri. 2 to 3 p.m.; besides relaying WGY's evening program on Mon., Wed., Fri. and Sat. evenings. General Electric Company.
19.60	15,300	OXV, Lyngby, Denmark. Experimental.
19.63	15,280	W2XE, Jamaica, N. Y.
19.68	15,250	W2XAL, New York, N. Y.
19.71	15,220	W8XK (KDKA) Pittsburgh, Pa. Tues., Thurs., Sat., Sun. 8 a.m. to noon.
19.99	15,000	CMGX, Central Toluca, Cuba.
20.00	14,990	TFZSH, Iceland.
20.70	14,480	W2XK, East Pittsburgh, Pa.
20.80	14,420	VPD, Suva, Fiji Islands.
20.90	14,340	G2NL, Catterham, England. Sundays 5-6 a.m.; 12:30-2 p.m.
20.97-21.26	14,300-14,100	Amateur Telephony.
21.50	13,940	Bucharest, Roumania, 2-5 p.m. Wed., Sat.
21.59	13,890	Mombasa, East Africa.
22.20	13,500	Vienna, Austria.
22.58	13,400	WND, Deal Beach, N. J. Transatlantic telephony.
22.97	13,050	W2XAA, Houlton, Me. Transatlantic telephony.
23.00	13,040	BSL, La Punta, Peru. Time Signals 2 p.m.
23.35	12,850	W2XO, Schenectady, N. Y. Antipodal program 9 p.m. Mon. to 3 a.m. Tues. noon to 5 p.m. on Tues., Thurs. and Sat. General Electric Co.
23.40	12,800	W2XN, Oakland, Calif.
23.45	12,750	W2XCU, Ampere, N. J.
23.50	12,700	W2XL, Anoka, Minn., and other experimental relay broadcasters.
23.99	12,500	G2GN, "Olympic," G2IV, "Majestic."
24.41	12,280	GBU, Rugby, England.

All Schedules Eastern Standard Time: Add 5 Hours for Greenwich Mean Time.

Meters	Kilo-cycles	Stations
24.46	12,250	FTN, Ste. Assise (Paris) France. Works Buenos Aires, Indo-China and Java. On 9 a.m. to 1 p.m., and other hours.
4.63	12,180	KIXR, Manila, P. I.
24.68	12,150	GBX, Rugby, England.
24.68	12,150	GBS, Rugby, England. Transatlantic phone to Deal, N. J. (New York).
24.89	12,045	NAA, Arlington, Va. Time signals, 8:55-9:10 a.m., 9:55-10 p.m.
24.98	12,000	FZG, Saigon, Indo-China. Time Signals, 2-2:05 p.m.
25.10	11,945	KQJ, Bolinas, Calif.
25.24	11,880	W8XK (KDKA) Pittsburgh, Pa. Tues., Thurs., Sat., Sun. noon to 5 p.m., and Sat. night. Radio programs. Television Mon. and Fri. 2:30 p.m., 60 lines, 1200 r.p.m.
25.34	11,840	W2XE, Jamaica, New York (WABC).
5.36	11,820	KIXR, Manila, P. I., 5-6 p.m., 11:15 a.m., 12:15 p.m., 2-4 a.m., and (except Mondays) 5-10 a.m.
25.40	11,810	13RO, Rome, Italy (Tests)
25.42	11,800	UORZ, Vienna, Austria. Tues., 9-11 a.m.; Wed., 5-7 p.m.; Thurs., 5-7 a.m.
25.53	11,750	G5SW, Chelmsford, England. 6:30-7:30 a.m. and 1-6 p.m. except Saturdays and Sundays.
25.60	11,690	CJRX, Winnipeg, Canada. 5:30 p.m. on 11:00 Thu.; midnight Sat. Sundays 11:30 a.m. to 1 p.m.; 10-11 p.m.
25.68	11,670	KIO, Kahului, Hawaii.
26.00	11,530	CGA, Drummondville, Canada.
26.10	11,490	GBK, Rugby, England.
26.20	11,440	KIXR, Manila, P. I., 11:15-12:15 p.m., 2-4 a.m., 5-10 a.m.
26.22	11,435	DHC, Nauen, Germany.
26.70	11,230	WBSN, S.S. "Leviathan" and A. T. & T. telephone connection.
		IBDK, S.S. "Elettra," Marconi's yacht.

(NOTE: This list is compiled from many sources, all of which are not in agreement, and which show greater or less discrepancies; in view of the fact that most schedules and many wavelengths are still in an experimental stage; that daylight time introduces confusion and that wavelengths are calculated differently in many schedules. In addition to this, one experimental station may operate on any of several wavelengths which are assigned to a group of stations in common. We shall be glad to receive later and more accurate information from broadcasters and other transmitting organizations, and from listeners who have authentic information as to calls, exact wavelengths and schedules. We cannot undertake to answer readers who inquire as to the "Radio of unknown stations heard," as that is a matter of guesswork; in addition to this, the harmonics of many local long-wave stations can be heard in a short-wave receiver.—EDITOR.)

27.00	11,100	EATH, Vienna, Austria. Mon. and Thurs., 5:30 to 7 p.m.
27.75	10,800	GBX, Rugby, England.
28.20	10,630	PLR, Batavia, Java. Works with Holland and France weekdays from 7 a.m.; sometimes after 9 a.m. on Sundays.
28.00	10,710	VAS, Glace Bay, N. S., Canada 5 a.m. to 2 p.m. Canadian Marconi Co.
28.50	10,510	BOEL, Leningrad, U.S.S.R. (Russia).
28.80	10,410	VKZME, Sydney, Australia. Irregular. On Wed. after 6 a.m. Amalgamated Wireless of Australia, Pennt Hills, N. S. W.
		KES, Bolinas, Calif.
29.00	10,310	Paris, France. 1:30-3 p.m. daily; 9 a.m. Sundays.
29.86	10,390	GBX, Rugby, England.
29.50	10,160	HS2PJ, Bangkok, Siam. Sun., Tues., Fri., 8-11 p.m.
9.70	10,095	Radio Experimental." Paris, France. From 5:45 p.m. daily; Sunday at 7 a.m.
29.98	10,000	CMZLA, Havana, Cuba.
30.15	9,940	GBU, Rugby, England.
30.20	9,930	W2XU, Long Island City, New York.
		Posen, Poland.
0.30	9,890	LSN, Monte Grande, Argentina, phone to Europe.
0.64	9,790	GBW, Rugby, England.
0.75	9,750	Agen, France. Tues. and Fri., 3 to 4:15 p.m.
0.90	9,700	Horedia, Costa Rica. 10:00 to 11:00 p.m. Amado Cespedes Marin, Apartado 40.
1.10	9,640	Nairobi, Kenya Africa. 11:00 a.m. to 2 p.m. Relays G5SW, Chelmsford, frequently from 7 a.m.
		Monte Grande, Argentina, works Nauen irregularly after 10:30 p.m.
31.23	9,600	LGN, Bergen, Norway.
1.26	9,590	PCJ, Hilversum (Eindhoven) Holland. Thu. 1-3 p.m., 6-10 p.m., Friday 1-2 p.m., 7 p.m. to 1 a.m. Saturday. N. Y. Philips Radio.
31.28	9,580	VKZFC, Sydney, Australia. Irregularly after 6 a.m. S. W. Broadcasting Co.
		W3XAU, Hyberby, Pa., relays W2CAU daily.
		VPD, Suva, Fiji Islands.
31.35	9,570	WIXAZ, Springfield, Mass. (WITZ).
31.38	9,550	Königsweusterhausen, Germany. 10 to 11 a.m., 11:30 a.m. to 2:30 p.m., and 3 to 7:30 or 8:30 p.m. Relays Berlin.
		KIXR, Manila, P. I.

31.48	9,530	W2XAF, Schenectady, New York. Mon., Tues., Thurs. and Sat. nights, relays WGY from 6 p.m. General Electric Co.
		W9XA, Denver, Colorado. Relays KOA.
		Helsingfors, Finland.
31.56	9,500	VK3LO, Melbourne, Australia. Irregular. Broadcasting Co. of Australia.
		ØZTRL, Copenhagen, Denmark. Around 7 p.m.
31.60	9,400	OXV, Lyngby, Denmark. Noon to 3 p.m.
31.75	9,450	Rio de Janeiro, Brazil. 5-7 p.m.
		Testing 200 watts.
31.80	9,430	XDA, Mexico City, Mex.
		Posen, Poland. Tues. 1:45-4:45 p.m.; Thu. 1:30-8 p.m.
32.00	9,375	EH90C, Berne, Switzerland. 3-5:30 p.m. after 7 p.m.
		ØZ7MK, Copenhagen, Denmark. Irregular
		3UZ, Melbourne, Australia.
32.06	9,350	CMZMK, Havana, Cuba.
32.13	9,330	CGA, Drummondville, Canada.
32.40	9,250	GBK, Rugby, England.
32.50	9,230	FL, Paris, France (Eiffel Tower) Time signals 4:50 a.m. and 4:50 p.m.
		VK2BL, Sydney, Australia.
32.59	9,200	GBS, Rugby, England. Transatlantic phone.
32.80	9,110	SUS, Cairo, Egypt.
32.90	9,100	GBS, Rugby, England.
33.81	8,873	NPO, Cavite (Manila) Philippine Islands. Time signals 9:55-10 p.m.
34.50	8,690	W2XCU, Ampere, N. J.; W9XL, Chicago.
34.68	8,650	W3XE, Baltimore, Md. 12:15-1:15 p.m., 10:15-11:15 p.m.
		W2XY, New York City.
		W8XAG, Dayton, Ohio.
		W6XN, Oakland.
		W4XG, Miami, Fla.
		And other experimental stations.
34.74	8,630	WOO, Deal, N. J.
35.00	8,570	HKCJ, Manizales, Colombia.
		RB15, Khabarovsk, Siberia. 5-7:30 a.m.
35.02	8,560	G2GN, S.S. "Olympic."
		G2IV, S.S. "Majestic."
35.54	8,440	G2AA, ship-to-ship phone.
35.48	8,450	WBSN, S.S. "Leviathan."
36.00	8,360	3KAA, Leningrad, Russia. 2-6 a.m., Mon., Tues., Thurs., Fri.
36.74	8,180	Mombasa, East Africa.
37.02	8,100	EATH, Vienna, Austria. Mon. and Thurs. 5:30 to 7 p.m.
		HS4P, Bangkok, Siam. Tues. and Fri. 8-11 a.m., 2-4 p.m. Tuesdays.
37.36	8,030	NAA, Arlington, Va. Time signals 8:55-9 a.m., 9:55-10 p.m.
37.43	8,015	Airplanes.
37.80	7,930	DOA, Doberitz, Germany. 1 to 3 p.m. Reichpostzentralamt, Berlin.
38.00	7,890	VPD, Suva, Fiji Islands.
38.30	7,830	PCV, Kootwijk, Holland, after 9 a.m.
38.60	7,770	FTF, Ste. Assise, France.
		PCV, Kootwijk, Holland. 9 a.m. to 7 p.m.
39.70	7,550	S.S. "Brenan."
39.15	7,660	FTF, Ste. Assise.
39.98	7,590	TFZSH, Reykjavik, Iceland.
		EK4ZZZ, Danzig (Free State).
40.20	7,460	YR, Lyons, France. Daily except Sun., 10:30 to 1:30 a.m.
40.50	7,410	Eberswalde, Germany. Mo., Thu. 1-2 p.m.
41.00	7,310	Paris, France ("Radio Vitus") Tests.
		Moscow, USSR. 7-7:45 a.m.
41.49	7,230	DOA, Doberitz, Germany.
41.50	7,220	HBD, Zurich, Switzerland. 1st and 3rd Sundays at 7 a.m., 2 p.m.
41.70	7,190	VK6AG, Perth, West Australia. Between 5:30 and 10 a.m.
42.12	7,120	ØZTRL, Copenhagen, Denmark. Irregular. Around 7 p.m.
2.70	7,020	EAP125, Madrid, Spain. 6-7 p.m.
2.80	7,000	FBR, Constantinople, Algeria.
3.00	6,980	EAR 110, Madrid, Spain. Tues. and Sat., 5:30 to 7 p.m., Fri. 7 to 8 p.m.
43.50	6,900	IMA, Rome, Italy, Sun. noon to 2:30 p.m.
3.60	6,875	F8MC, Casablanca, Morocco. Sun., Tues., Wed., Sat.
		D4AFF, Coethen, Germany, Sundays 4-6 a.m.; Tuesdays, Fridays, noon-2 p.m.; Thursdays 4-6 p.m.
44.00	6,820	XO 51, San Lazaro, Mexico. 3 a.m. and 3 p.m.
44.40	6,753	WND, Deal, N. J.
44.60	6,720	VRV, Georgetown, S. W. Indies. Wed. and Sun. 7:15 to 10:15.
45.00	6,600	Berlin, Germany.
45.20	6,635	WBSN, S.S. "Leviathan."
46.05	6,515	WOO, Deal, N. J.
46.70	6,425	W2XCU, Ampere, N. J.; W9XL, Anoka, Minn.; and others.
47.00	6,380	CT3AG, Funchal, Madeira Island. Sat. after 10 p.m.
		VAS, Glace Bay, Canada. Tests.
47.35	6,335	W10XZ, Airplane Test station.
		VEAP, Drummondville, Canada.
48.25	6,215	FRT, Fort de France, Martinique.
48.30	6,205	LON, Buenos Aires, Argentina.
48.35	6,200	HKG, Bogota, Colombia.
8.50	6,160	HRB, Tegucigalpa, Honduras. 9:15 p.m.-midnight, Mon., Wed., Fridays. From 11-12 p.m. Sat., Int. S. W. Club programs.
48.74	6,155	W9XAL, Chicago, Ill. (WMAC) and Airplanes.
48.80	6,140	KIXR, Manila, P. I. 3-4:30, 5-9 or 10 a.m., 2-3 a.m. Sundays.
48.83	6,140	KDKA, East Pittsburgh, Pa. Tu., Thu., Sat., Sun. 5 p.m. to midnight.
48.99	6,120	Motala, Sweden. "Randradio," 6:30-7 a.m., 11:40 p.m. Holidays, 5 a.m.-5 p.m.
		ARI, Hongkong, China.
		W2XE, New York City. Relays WABC.
		Atlantic Broadcasting Co. of Australia.
		FL, Eiffel Tower, Paris. 5:30-5:45 a.m., 5:45-12:30, 4:15-4:45 p.m.
49.15	6,100	W3XL, Bound Brook, N. J. (WJZ, New York) 12 midnight on.

(Continued on page 188)

Short-Wave Stations of the World

(Continued from page 153)

Kilo- Meters	cycles		Kilo- Meters	cycles	
49.17	6,095	—VE9GW, Bowmanville, Ontario, Canada. Daily, 1:45-5 a.m., noon to 7 p.m. Sundays, 5 a.m. to 7 p.m. Gooderham & Worts, Ltd.	97.53	3,076	—W9XL, Chicago, Ill.
49.26	6,090	....Copenhagen, Denmark.	98.95	3,030	....Motala, Sweden. 11:30 a.m.-noon, 4-10 p.m.
49.31	6,080	—W2XCX, Newark, N. J. Relays WOR.	101.7	to 105.3	meters—2,850 to 2,950 kc. Television.
		—W9XAA, Chicago, Ill. (WCFL).			—W3XK, Silver Springs, Md., 8 to 9 p.m. except Sunday; WPY, Allwood, N. J.
		—W6XAL, Westminster, Calif.			—W2XR, New York, N. Y.—W3XL, Bound Brook, N. J.
49.40	6,070	—UOR2, Vienna, Austria. 5-7 a.m., 5-7 p.m. Tues. and Sat., 9-10 a.m. Thu.	104.4	2,870	....Milan, Italy. After 2 p.m.
49.46	6,065	—SAJ, Motala, Sweden. 6:30-7 a.m., 11 a.m.-4:30 p.m.	105.3	to 109.1	meters—2,750 to 2,850 kc. Television.
49.50	6,060	—W8XAL, Cincinnati, Ohio. Relays WLW.			—W2XBA, Newark, N. J., Tues. and Fri. 12 to 1 a.m.; —W2XCL, Brooklyn, N. Y.;
		—W9XU, Council Bluffs, Iowa. Relays KOIL.			—W8XAU, Pittsburgh, Pa.; —W1XB, Somerville, Mass.; —W7XAO, Portland, Ore.;
		—W3XAU, Byberry, Pa., relays WCAU.			—W9XAP, Chicago, Ill.; —W2XAP, Jersey City, N. J.
		—HKC, Bogota, Colombia. 9:15-11:30 p.m., Monday to Friday. Later on Sat.			—W2XCR, Jersey City, N. J. 8:15 and 9 p.m.
49.67	6,040	—W9XAQ, Chicago, Ill. (WMAQ).			—W2XB0, Long Island City, N. Y.
49.80	6,020	—W2XAL, New York.	109.1	to 113.1	meters—2,650 to 2,750 kc. Television—
		—W2XBF, Chicago, Ill.			W9XR, Chicago, Ill.
49.97	6,000	—ZL3ZC, Christchurch, New Zealand. 10 p.m.-midnight, Tuesdays, Thursdays and Fridays.	110.2	2,722	—Aircraft.
		—EAR25, Barcelona, Spain. Sat. 3 to 4 p.m.	113.5	2,645	—W2XB0, New York Central R.R. train, (Exp.)
		—RFN, Moscow, Russia. Tues., Thurs., Sat. 8 to 9 a.m.	124.2	2,416	—W7XP, Seattle, Wash., Police and Fire Depts.
		—Eiffel Tower, Paris, France. Testing 6:30 to 6:45 a.m., 1:15 to 1:30, 5:15 to 5:45 p.m., around this wave.	125.1	2,398	—W9XL, Chicago, Ill.; —W2XCU, Ampere, N. J.—And other experimental stations.
51.40	5,833	—HK7, Barranquilla, Colombia. 8:30 to 10:30 p.m., exc. Sun.	128.0-129.0		—Aircraft.
52.00	5,770	—AFL, Bergedorf, Germany.	129.0	2,325	—W10XZ, Airplane Television.
52.72-54.44	5,690-5,510	—Aircraft.	135.0	2,220	....Stockholm, Sweden.
54.02	5,550	—W8XJ, Columbus, Ohio.	131.3	2,285	—W2XB0, N. Y. C. R.R. (Exp.)
54.51	5,500	—W2XBH, Brooklyn, New York City (WBBC, WCGU).	136.4	to 142.9	meters—2,100 to 2,200 kc. Television.
56.70	5,300	—AGJ, Nauen, Germany. Occasionally after 7 p.m.			W8XAU, Pittsburgh, Pa.; —W1XB, Somerville, Mass.; —W2XCW, Schenectady, N. Y.;
58.00	5,170	—OKIMPT, Prague, Czechoslovakia, 1 to 3:30 p.m., Tues. and Fri.			—W1XAV, Boston, Mass., 6 p.m.
60.90	4,920	—LL, Paris, France.			W8XAV, Pittsburgh, 60 holes, 1200 r.p.m. 1:30-2:30 p.m., Mon., Wed., Fri. Westinghouse Electric & Mfg. Co.
61.22	to 62.50	meters—4,800 to 4,900 kc. Television.	142.9	to 150	meters—2,000 to 2,100 kc. Television.
		—W8XK, Pittsburgh, Pa.; —W1XAY, Lexington, Mass.; W2XBU, Beacon, N. Y.;			—W2XCL, Brooklyn, N. Y., Mon., Wed., Fri., 9 to 10 p.m.; —W9XAA, Chicago, Ill.; —W2XBS, New York, N. Y., frame 60 lines deep, 72 wide, 1,200 R.P.M.; —
		—WENR, Chicago, Ill.			W1XAE, Springfield, Mass.; —W8XAV, Pittsburgh, Pa.; W6XAM, Los Angeles;
62.56	4,795	—W9XAM, Elgin, Ill.			—W2XBU, Beacon, N. Y.; —W3XAK, Bound Brook, N. J.; —W3XK, Washington, D. C. Daily except Sun., 8 to 9 p.m.; —WPY, Allwood, N. J.; —W10XU, Airplane.
		—W9XL, Chicago, Ill.			—W2XB0, Long Island City, N. Y.
		—And other experimental stations.	150	2,000	—RA72, Smolensk, USSR.
62.69	4,785	—Aircraft.	149.9-174.8	2,000-1,715	—Amateur Telephony and Television.
62.70	4,785	—VZA, Drummondville, Canada.	175.2	1,712	—WKDU, Cincinnati, Ohio. (Police Dept.)
65.22	to 66.67	meters—4,500 to 4,600 kc. Television.			—WMP, Framingham, Mass. 11 a.m., 1 and 5 p.m. daily. Music and police reports.
		—W6XC, Los Angeles, Calif.			—WRBH, Cleveland, O., (Police Dept.)
67.65	4,430	—DOA, Doeberitz, Germany. 6 to 7 p.m.			—KGJX—Pasadena, Calif., (Police Dept.)
70.00	4,280	—OHK2, Vienna, Austria. Sun., first 15 minutes of hour from 1 to 7 p.m.			—...St. Quentin, France.
70.20	4,273	—RB15, Khabarovsk, Siberia. 5-7:30 a.m.			—F8FY, Cannes, France. 5 p.m. Wed.; 4 a.m. Sunday.
71.77-72.98	4,180-4,100	—Aircraft.	176.5	1,700	....Orly, France.
72.87	4,116	—WOO, Deal, N. J.	178.1	1,684	—WDXK, New York, N. Y. (Police Dept.)
74.72	4,105	—NAA, Arlington, Va. Time signals 8:55-9 a.m., 9:55-10 p.m.	180.4	1,662	....Michigan State Police.
80.00	3,750	—F8KR, Constantine, Tunis, Africa. Mon. and Fri.	186.6	1,608	—W9XAL, Chicago, Ill. (WMAQ) and Aircraft Television.
		—13RO, Rome, Italy. (Testing)			—W2XY, Newark, N. J.
82.90	3,620	—DOA, Doeberitz, Germany.	187.0	1,604	—W2XCU, Wired Radio, Ampere, N. J.
84.24	3,560	—OZ7RL, Copenhagen, Denmark. Tuesday and Fri. after 6 p.m.			—W2XCD, DeForest Radio Co., Passaic, N. J. 8-10 p.m.
84.46-85.66	3,550-3,500	—Amateur Telephony.			....Ornskoldsvik, Sweden.
86.50-86.00	3,490-3,460	—Aircraft.			—And other experimental stations.
92.50	3,256	—W9XL, Chicago, Ill.	187.9	1,596	—WRBC, New York, N. Y. (Fire Dept.)
		—And other experimental stations.	194	1,530	....Karlskrona, Sweden.
94.76	3,166	—WCK, Detroit, Mich. (Police Dept.)	187.9	1,596	—WKDT, Detroit, Mich. (Fire Dept.)
95.48-97.71	3,142-3,070	—Aircraft.			(Standard Television scanning, 48 lines, 900 R.P.M.)
97.03	3,124	—WOO, Deal, N. J.			
97.15	3,088	—W10XZ, Airplane Television.			

Ten years earlier, in 1920, according to a document in the FCC files (from an earlier agency, or post-1934 internal research) referring to KDKA in Pittsburgh, Pennsylvania: “A license issued to this station Oct. 27, 1920 for 1 year [which] authorized the use of radio telephone apparatus...” (see appendix transcription). Many say this is the beginning of broadcasting, at least in the United States. KDKA, as on its 1925 QSL verification-of-reception card below, certainly thought so, declaring itself to be: “The Pioneer Radio Broadcast Station of the World.”

Form 10396

RADIO STATION KDKA
Westinghouse Electric & Manufacturing Company
East Pittsburgh, Pa.

Thank you so much for your commendation of our concert. Hearing from you and many others is our greatest incentive to arrange concerts and other features that will bring enjoyment into your home. We shall welcome any suggestions you may have.

Advance programs are published by the Pittsburgh Post, Pittsburgh, Pa., as a supplement to the Wednesday edition. The subscription price is \$1.00 per year.

WESTINGHOUSE RADIO STATION KDKA
“The Pioneer Radio Broadcasting Station of the World”

Bart Lee Collection

EAST PITTSBURGH PA
MAY 20 PM
1925

THIS SIDE OF CARD IS FOR ADDRESS

Broadcasting Schedule Station KDKA
Eastern Standard Time 326 Meters

Daily
9:45 A.M.—Market Reports
11:55 A.M.—Time Signals
12:00 M. —Weather Forecast and Market Reports
12:10 P.M.—Noon Concert
6:15 P.M.—Dinner Concert
7:30 P.M.—Children's period, market reports, addresses, etc.
8:30 P.M.—Concert
9:55 P.M.—Time Signals and Weather Forecast

Tuesday and Thursday
11:30 P.M.—Special Concerts

Sunday
11:00 A.M., 4:45 P.M., and 7:45 P.M.—Church Services
2:45 P.M., 4:00 P.M. and 6:30 P.M.—Concerts

Mr. Francis A. Thomas,
R. R. #1,
San Rafael, Calif.

Note the Northern California location of the lucky listener.

In the mid-1920s, some stations moved into the “short waves,” wavelengths of 200 meters and down, 1500 KHz and up. The solar sunspot cycle 16 peaked in 1928, just about when short wave radio was finding worldwide application, no doubt helped by favorable propagation. Russia claimed (on Radio Moscow in the 1980s) to have put the first international short wave broadcast station on the air in 1927, in order to further the Revolution.

On this 1930 list, stations on six continents and Oceania appear, representing many countries, mostly American, colonial powers and former colonies.

About sixty (60) broadcasting stations appear on 20 meters or a shorter wavelength, about 15 MHz, and *many more* on lower frequencies. Some utility stations such as LSN in Argentina appear for non-broadcast purposes, *e.g.*, in its case telephony. But within a few years, it too was broadcasting, as shown by its QSL card of 1935 (and as early as 1932):




A note on that appears on the List re 24 MHz and 12.48 meters (see W6AQ, below) recites that:

“Several experimental Stations are authorized to operate on non-exclusive waves of a series, both above this and down to 4 meters.”

Stations of Interest on the List:

Meters [m	Kilocycles [callsign] KHz	Station and detail:]
12.48	24,000 W6AQ	San Mateo, Calif.
14.5	20,680 LSN	Monte Grande, Argentina... Telephony with Europe.
14.89	20,140 DGW	Nauen. Telephony to Buenos Aires.
15.50	19,350 VK2ME	Sydney, Australia. [1934 QSL:]

VK2ME



The laughing notes of the Kookaburra open and close the A.W.A. World-wide Broadcasting Service.

“ THE VOICE OF AUSTRALIA ”

Power - - 20 Kilowatts
Wave-Length 31.28 Metres

A W. A.
Owns and Operates

Beam Wireless Services to Great Britain, The Continent of Europe and North and South America.

Wireless Telephone Services to Great Britain, The Continent of Europe, North and South America, Java and New Zealand.

Coastal Radio Stations in Australia, Papua, New Guinea and Fiji.


Wireless Services on ships of the Australian Mercantile Marine.

Radio-Electric Works for the manufacture of every type of transmitting equipment and Radiola broadcast receivers.

Research and experimental laboratories.

World Wide Broadcasting Service

AMALGAMATED WIRELESS (A/SIA) LTD.
AUSTRALIA'S NATIONAL WIRELESS ORGANISATION



Bart Lee Collection

15.94 18,820 PLE Bandoeng, Java Broadcasts
[and] Telephony ... with Amsterdam.

16.38 18,310 GBS Rugby, England. Telephony
with New York.

16.61 18,050 KQJ Bolinas, Calif.

16.88 17,770 PHI Huizen, Holland. "Beam
station to Dutch Colonies."

17.34 17,300 W2XK Schenectady, N.Y. General
Electric Co.

W6XN Oakland, Calif.

W6AJ Oakland, Calif.

"... and other experimental stations."

18.00 16,660 G2GN S.S. "Olympic."
G2IV S.S. "Majestic."

18.10 15,560 G2AA "ship phone." [likely radio-
telephone to ships at sea]

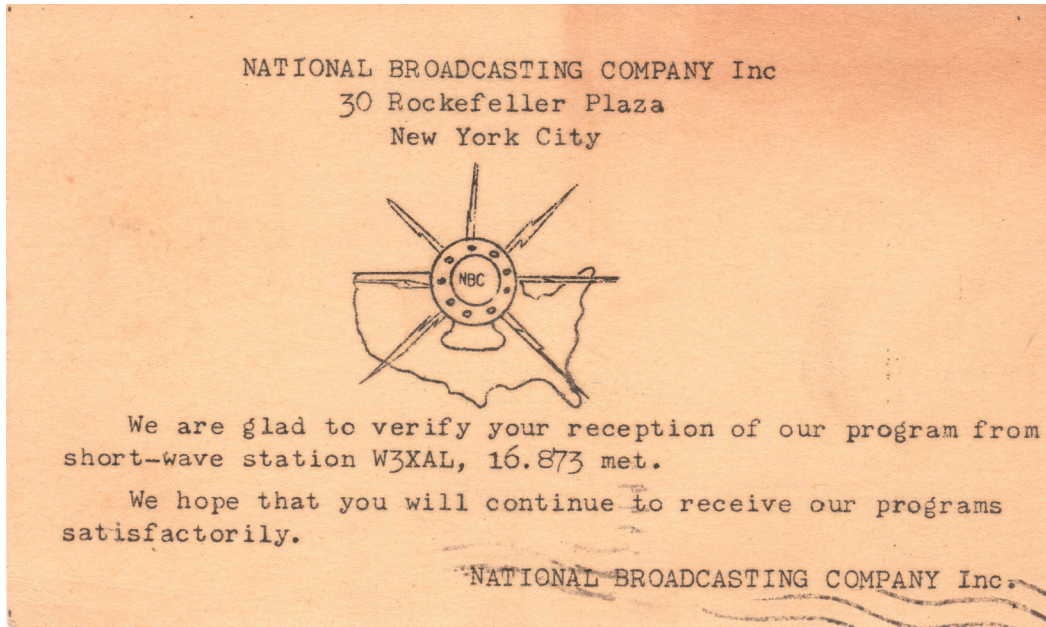
18.37 16,320 VLK Sydney, Australia. Phone to
England.

18.40 16,300 WLO Lawrence, N.J. [likely radio-
telephone to ships at sea]

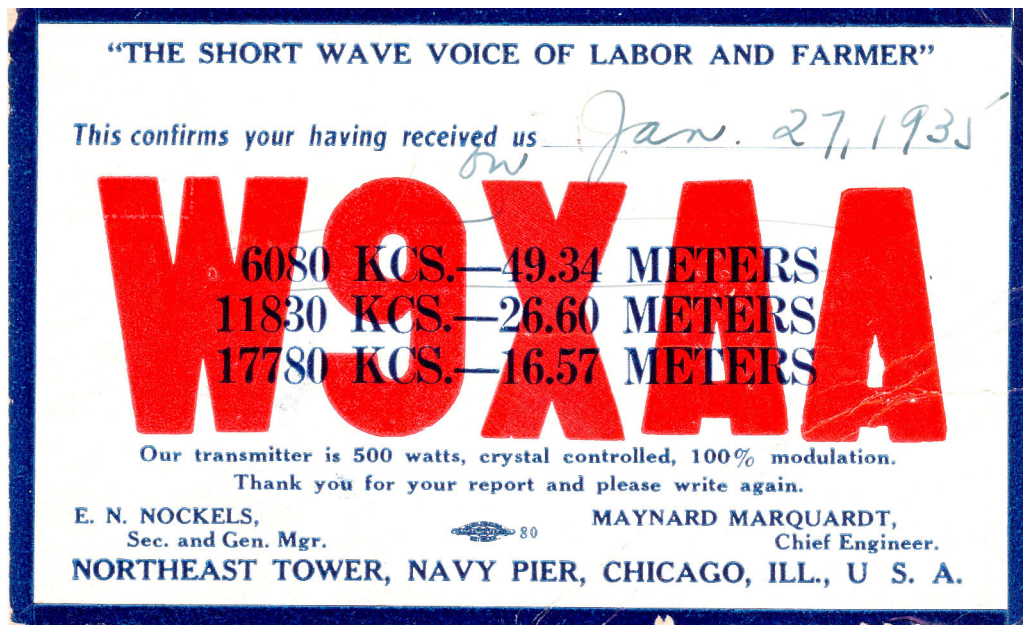
19.56 15,340 W2XAD Schenectady, N.Y.
[broadcasts during the week, and] "besides relaying WGY's
evening programs..." General Electric Co.

19.71 15,220 W8XK (KDKA) Pittsburgh, Pa. [four
days a week] 8 a.m. to Noon.

Like W2XAD (GE; above) some broadcast band stations relayed their programs on short wave. For example, W3XAL (NBC, NY) relayed on about 17 meters wavelength at about 17.768 MHz in 1938.



Bart Lee Collection; postmark Feb. 25, 1938



Bart Lee Collection

This populist station relayed Chicago's WCFL, the Chicago Federation of Labor. As "The Short Wave Voice of Labor and Farmer" it wanted a more than local reach, well into the farm country all around it for many hundreds of miles. Short Wave radio gave it that reach. This station also experimented with television in 1928.

Notable stations on lower frequencies include:

22.38 13,400 WND Deal Beach, N.J. "Transatlantic telephony" [A.T.&T.]

24.46 12,250 FTN "...France. Works Buenos Aires, Indochina and Java...."

24.89 12,045 NAA Arlington, Va. Time Signals, 8:55 - 9 a.m., 9:55 - 10 p.m.

THIS CARD WILL VERIFY THE RECEPTION OF STATION

NAA on 25 January 1934.
(Date)

By Derek Wharton.
(Name)

John R. Redman
Lieutenant-Commander, U.S. Navy.
Communication Officer.

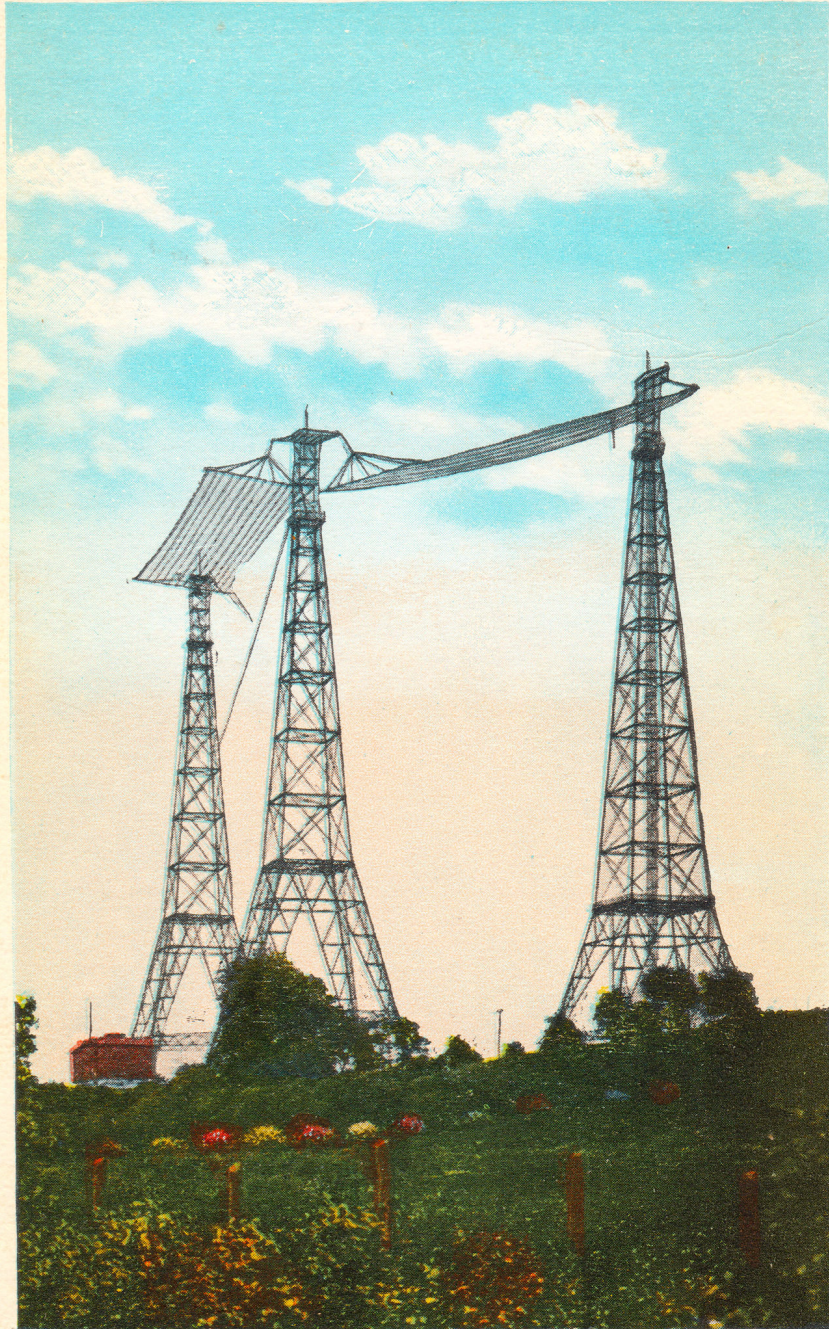
2 February 1934.
(Date)

U S GOVERNMENT PRINTING OFFICE: 1932 117384

ARLINGTON, VA.
1030W.

Bart Lee Collection

U. S. WIRELESS STATION FORT MYER VA



Station C 5 0 two small one H 8 6

Bart Lee Collection

24.98 12,000 FZG Saigon, Indochina. Time Signals...

25.10 11,945 KKQ Bolinas, Calif.

25.68 11,670 KIO Kahuho, Hawaii

26.70 11,230 IBDK "S.S. 'Elettra,' Marconi's yacht."

26.70 11,230 WSBK "S.S. 'Leviathan' and A.T.&T. Telephone connection."

28.50 10,510 RDRL Leningrad, U.S.S.R. (Russia)

32.50 9,230 FL Paris, France (Eiffel Tower) Time Signals ...[starting about 1910]



33.81 8,872 NPO Cavite (Manila) Philippine Islands. Time Signals...

47.35 6,335 W10XZ "Airplane Television" [several listings for Jenkins Laboratories]

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Aircraft communications frequencies are noted at:

37.43 m and 8,015 KHz

52.72 - 54.44 m and 5,690 - 55,510 KHz

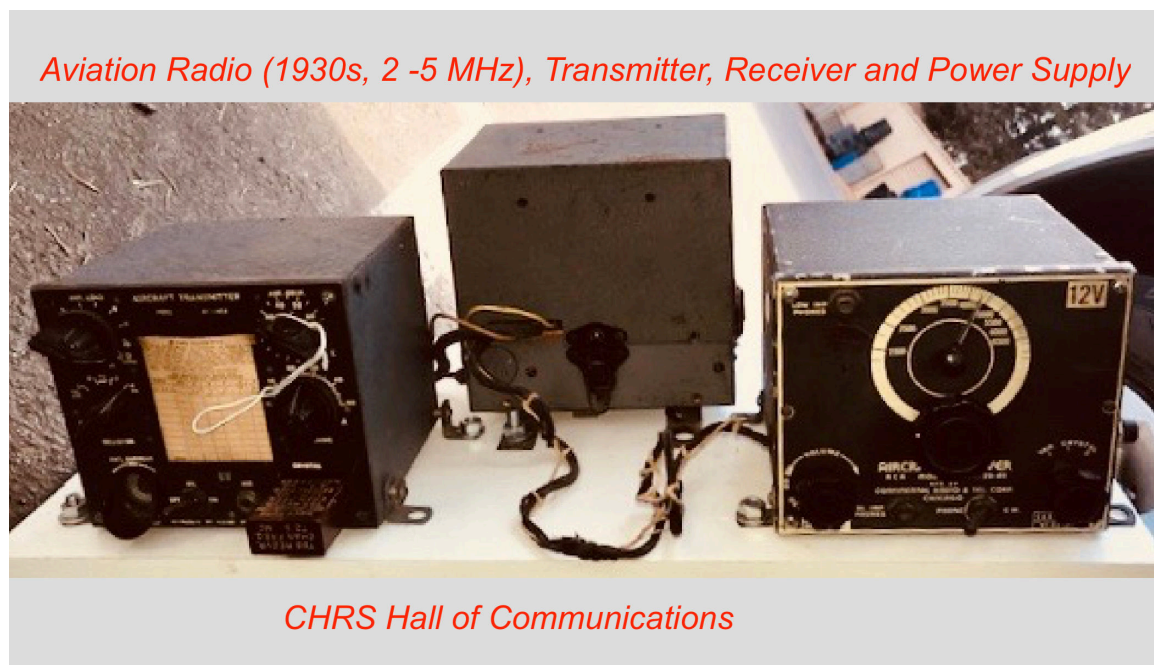
6.269m and 4,785 KHz

86.50 - 86.00m and 3,490 - 3,460 KHz

95.48 - 97.71m and 3,242 - 3,460 KHz

110.2m and 2,722 KHz

CHRS displays several aviation radios, as employed in aircraft, in the Hall of Communications. Member V S Rajesh (“Raj”) has restored one of the receivers.



Amateur telephony bands are listed at:

5 meters, 20 meters, 80 meters and 160 meters (then 2,000 KHz to 1,715 KHz).

W2AX

DATE <u>3/25</u>	W9DLZ	YEAR <u>1931</u>
<u>40</u>	METERS	<u>3⁰⁰ PM CST</u>
YOUR <u>phc</u> SIG. REG. Q. S. A. <u>4</u> R. <u>6</u>		
RECEIVER	REMARKS	TRANSMITTER
<u>Reg</u>	<u>Sorry I understand</u>	<u>MOPA</u>
<u>det r 300p</u>	<u>to be very at first</u>	<u>245 000</u>
<u>at 1000</u>	<u>hpt to a long 100</u>	<u>2-210 PA</u>
<u>design</u>	<u>from time you're a</u>	<u>Rae power</u>
	<u>2d sig 010</u>	
	<u>again please L</u>	
	<u>735</u>	
Opr. W. S. LAWSON		SHONN, KY.

UU
10/35

Bart Lee Collection

This amateur station could transmit radio-telephone signals by means of its Modulated Oscillator Power Amplifier (MOPA) in 1931. At the time, almost all ‘ham’ stations used CW Morse code; spark had died out. Radio-telephone required more expertise, but became more popular as the technology improved.

Very few ham QSL cards of the period show “phone” operation. 9DUG does:

RADIO STATION 9DUG, 823 EAST SHERMAN ST.

Hutchinson, Kansas. 12-7 1923

Radio 9CCV Your CW Signals asked 72.6

Audibility very good Character steady Wave 200

Receiving equipment—Regenerative Tuner and two Stage Amplifier, Baldwin Phones and Magnavox.

Transmitters:—

1 K. W. Acme-Benwood Spark.

100 Watt Straight C. W.. 60 Cycles. 513.70 - DX 4500 m

10 Watt CW-ICW and Phone. 513.2 - DX - 6600 m

Transmitting Antenna—"L," 70-40 ft. High. 60 ft. Long.

Counterpoise—5 Wires 150 T ft. Long.

Remarks: also called to work more - the bit to
after a change of time - Part 7322

Sincerely Yours,

A. R. R. L. 730 6000

Bart Lee Collection

Note: "10 Watt CW-ICW and Phone."

So for the vast majority of radio listeners who did not know Morse code, many amateur conversations could still be made out on radio-telephone. Marine radio-telephone, and point-to-point radio-telephone conversations may have been far more interesting.

==

Television stations appear on many frequencies mostly below ~ 3 MHz (= 3,000 KHz; 100 meters wavelength). Almost all are Eastern U.S. stations. A note at the bottom of the list says:

"(Standard Television Scanning, 48 Lines, 900 R.P.M.)"

The list shows several bands for television, *e.g.*:

61.22 to 62.50 meters and 4,800 to 4,900 kc [= KHz]

101.7 to 105.3 meters — 2.850 to 2,950 kc [= KHz],

down to:

142.9 to 150 meters — 2,000 to 2,200 kc [KHz];

including in this band: W6XAM, Los Angeles.*

Some 30 televisions stations are listed by callsign and location in the approximately one megahertz of bandwidth between about three MHz and two MHz.

= =

Police and Fire Department stations appear just above the broadcast band, then up to 1.5 MHz. The highest frequency for these stations is 1.712 MHz (175.2 m), including:

KGJX — Pasadena, Calif. (Police Dept.)

In the midst of these utility stations, appears:

187 [m] 1,604 [KHz] W2XCD, DeForest Radio Co.,
Passaic, N.J. 8 - 10 p.m.

... and a few broadcast stations, *e.g.*, Russia, France, and Sweden.

* Listed to one R.S. McGlashan, but not known to have broadcasted.
https://www.earlytelevision.org/mechanical_stations.html

The lowest frequency for a utility station is:

187.9 [m] 1,596 [KHz] WKDT, Detroit, Mich. (Fire Dept.)

These utility stations are the stations that appear on the “Police” band just above the AM broadcast band on 1930s radios.



== ==

Radio-Craft adds this note:

“This list is compiled from many sources, all of which are not in agreement, and which show greater or less discrepancies; in view of the fact that most schedules and many wavelengths are still in an experimental stage; that daylight time introduces confusion and that wavelengths are calculated differently in many schedules. In addition to this, one experimental station may operate on any of several wave-lengths which are assigned to a group of stations in common....”

From *Radio-Craft*, September 1930, at pages 153 and 188.

[Appendix: CHRS Archives Transcript of an early typewritten list annotated in handwriting “FCC” and its title, researched by Al Jones *circa* 1990 in Washington]

“LIST OF FIRST STATIONS LICENSED FOR BROADCASTING”

“*A license issued to this station [KDKA] Oct. 27, 1920 for 1 year authorized the use of radio telephone apparatus, however, the license of Nov. 7, 1921, was the first one issued expressly for b/c service.” [“FCC” note]

Call Letters	Licensee	Location of Station	W/L Meters	Power watts	Date Issued
WBZ	Westinghouse Elec. & Mfg. Co.	625 Page Bldg., Springfield, Mass.	360	1500	9/15/21
WDY	Radio Corp. of America	Roselle Park, N.J.	360	1000	9/19/21
WCJ	The A. C. Gilbert Co.	493 Blatchley Ave., New Haven, Conn.	360	Not Spec.	9/29/21
WJZ	Westinghouse Elec. & Mfg. Co.	95 Orange St., Newark, N.J.	360	3000	9/30/21
WJX	DeForest-Radio Telephone & Telegraph Co.	1391 Sedgwick Ave., N.Y., N.Y.	360	500	10/13/21
WWJ	The Detroit News	615 Lafayette St., Detroit, Mich.	360	2000	10/13/21
KQL	Arno A. Kluge	1045 S. Bixel St., Los Angeles, Calif.	360	Not Spec.	10/13/21
KDKA*	Westinghouse Elec. Mfg. Co.	East Pittsburgh, Pa.	360	2000	11/7/21

[Etc.; only the first page here. Source: Al Jones, Ye Olde Transmitting Tube Museum, Crescent City California, to Bart Lee, CHRS (1990s), transcribed 2021 (v2)]

(20 IV '22, v3.1, de K6VK) ##