

Los Angeles — Epicenter of the Midget Radio Explosion

by Richard Gray

Richard Gray presents the conditions which caused Los Angeles to be at the forefront of midget radio production. Los Angeles was at the right place at the right time!

Some Context Before We Jump to 1928!



The first radio station to broadcast was KDKA (disputed) in October 1920. Receiving sets were crystal sets and modest tube radios.

All radio "stations" used one frequency assignment until mid-1923. After that, receiving sets needed to be tunable, with some adjacent channel frequency rejection. Battery sets abounded.

In 1927, AC mains-operated sets became available. Many sets were housed in metal cans for shielding and had separate speakers. Some clever cabinetmakers combined the two to create a floor model.

By 1928, eastern radio manufacturers were offering floor model radios. All those radios were available in Los Angeles radio shops.

The Los Angeles manufacturers concentrated on the market share not already filled by the eastern competition. These were smaller tabletop radios with built-in speakers, with some offering console radio options.

By 1929, the Los Angeles Radio manufacturers were concentrating on attractive midget radios, and they were making some headway with distribution to other parts of the United States. Known in marketing as a "Bottom Feeder", a few Los Angeles players like Jackson-Bell, Keller-Fuller and Echophone were offering several "Midget" styles in 1929.



The eastern companies wanted no part of this "bottom-feeding" market. They considered it a joke since people continued buying ever more expensive high-end console radios. It was the flamboyant "Roaring 20s" and the economy was booming. People were freely spending money to have the latest and greatest things! The large eastern companies were raking in money. What could go wrong?

Photos - Right Side, Top to Bottom: Radiola 1 Crystal Set, Atwater Kent 4550 with speaker, Philco 511 & 211 speaker, Philco Model 73 Lowboy. **Above, Left to Right - Early Los Angeles Midgets:** Ufonic-Echophone, Plymouth, Keller-Fuller Model M, Wood Cabinet, Keller-Fuller Model M, Metal Cabinet, Powell.



***** THE EXPLOSION *****

The Stock Market crash in November of 1929!!! The place of radio in society, and people's purchasing proclivities, were about to change.

People started thinking of ways to save money: stay home more, purchase fewer things and less expensive items. People went out less and considered radio entertainment to be important to them. They became less willing to invest a fortune in a radio that was another piece of furniture in their homes.

The attractive accessory-styled tabletop midget radio was what many people desired, and Los Angeles radio manufacturers were poised to fill that need. The BIG eastern companies continued to make BIG pricy sets that people no longer wanted. Suddenly, the "bottom feeder" was on top in terms of desirability! The Explosion in Los Angeles radio manufacturing and the number of manufacturers is about to begin...

Within a few months, Los Angeles spawned 35 companies with a total of 59 news companies by the spring of 1931. Some had just one offering, some lasted for a while. Most were out of business by 1932. Some had very famous people trying to cash in, like Lee de Forest, the "inventor" of the vacuum tube.

Los Angeles, Midget Capitol of the World

By Floyd A. Paul

the late twenties and until the 1930 the United States radio manufacturing industry was geared making large radio sets,

Rockies columns in *Radio*, *Western Music* and *Trades Journal*, and *Radio*

See the Los Angeles Radio Manufacturers List on Page 26



Most new manufacturers stayed small players or went out of business. Their sets were cute, but for most, the performance was modest. Many had 'clever' manufacturing techniques, like a cast aluminum chassis or having all the parts mounted to a backboard (sort of the breadboard concept in a vertical clamshell). These were cute, but difficult to manufacture.

Most of the new companies were bootleggers; they were not licensed by RCA. If they got successful enough to be noticed, RCA would sue them. If that happened, most simply stopped trading. However, a few Los Angeles manufacturers did have RCA Licenses or inherited licensing by manufacturing their radios at the Gilfillan facilities. The most notable of these was Jackson-Bell.



Jackson-Bell began in 1926 with the first all-AC set offering in Los Angeles. Their next offerings were tabletop, all-in-one-box AC sets. In early 1929, they were offering the midget Art Deco Model 59. It was a local success, with some distribution to other locales. This was followed in the Fall of 1929 by a better-performing chassis in a look-alike cabinet, redesigned for easier manufacture, the Model 60. The Model 60 came in many cabinet styles and brands. Unlike the other startups, Jackson-Bell could easily ramp up production. Jackson-Bell produced its radios at the Gilfillan factory.

Photos - Top Row, Left to Right: Austin Model J, Zaney-Gill Pipe Organ Grille, Super JR (JB Model S), Falck, Davison-Haynes. **Bottom Row, Left to Right:** Jackson-Bell Model 59 Black, Jackson-Bell Model 59 Wood.

When the “Explosion” happened, Jackson-Bell was able to fill the demand with radios being shipped all over the United States. Some other start-ups also jumped on the bandwagon, with radios manufactured by Jackson-Bell, carrying other brand names, and presumably their own distribution channels.



In the Spring of 1930, Jackson-Bell offered the knock-out punch — the Model 62. This radio had it all, with excellent performance in a myriad of cabinet designs. The two cabinet configurations could be ‘customized’ for Jackson-Bell’s own offerings, or for a pantheon of other ‘House Branded’ dealers. By the summer and fall of 1930, the Model 62, in at least 20 Cabinet variations, bearing various

brand names, was being distributed nationwide and to other countries. The Explosion was at its peak! Jackson-Bell claimed production of 1,000 radios a day!

Like all explosions, eventually the smoke clears, and we see the aftermath!

The success of the midget radio did not go unnoticed by the much larger eastern manufacturers. Several began to offer midgets of their own; the Philco Model 20 “Baby Grand” is a great example.

The low-end “Baby Grand” (\$49.50) and the extremely high-end “Concert Grand” (\$350) were offered in August of 1930. Perhaps Philco did not want to be seen as only a Bottom Feeder?

Philco had a huge, well-established dealer network hungry for midget radios that their customers were looking for. The Model 20 Baby Grand was an instant success.



Photos - Top Row: JB Model 60 Black, JB Model 60 Wood, JB Model 60 Lyre-Grille New Zealand, JB-60 Green Floral, JB Model 60 Loeser’s Department Store. **Second Row:** JB Model 62 Cathedral Peacock, JB Model 62 Art Deco Swan, Sovereign, JB Model 62 Cathedral Cockatiel. **Third Row:** Tiffany Tone - JB Model 62 Art Deco Cathedral, Tiffany Tone - JB Model 62 Art Deco, Lyra-Tone - JB Model 62 Cathedral, Velvet-Tone - JB Model 62 Fleur-De-Lis Art Deco, M-on-M-on-T - JB Model 62 Cathedral. **Bottom Row:** Philco 20 - Baby Grand.

Within six months, 350,000 were produced! The “Concert Grand”, not so much. During the same time frame, 300 were produced.

Do the math! The other large eastern manufacturers certainly did. By the Spring of 1931, they all had their own midget offering! The big eastern manufacturers had caught up and now dominated the market for midget radios.

Some Los Angeles radio manufacturers moved upscale with superhetrodyne models offered as midget and console models. Their early success was soon overshadowed by sets offered by the large eastern manufactures.

In reaction to the eastern companies taking over the midget market, the remaining Los Angeles radio manufacturers did what they did before the “Explosion” – go down-market, again.

Los Angeles specialized in Pee-Wee Radios! The “Peter Pan” and other Pee-Wees did well for a time in wider markets. The large eastern manufacturers did not want to stoop that low.



Photos - Top - Eastern Offerings: Philco Concert Grand (Doors Open). **Second Row:** Philco 70, Atwater Kent 84, Zenith LH 'Zenette', Crosley 54 'Buddy Boy', RCA-R7. **Third Row - Pee-Wee Radios:** JB Model 84 Peter Pan, Willard - JB Model 4, Dow Radio 'Westernaire', JB Model 24 Peter Pan, Tiffany-Tone. **Bottom Row - Very Cheap Table Models:** Shelley, JB Model 9, Peter Pan Model 34 'Royale', El Rey, 'Wampas from Hollywood'.

By the end of 1932, even the once-mighty Jackson-Bell succumbed, leaving behind a few very low-market "Bottom Feeders" selling Jackson-Bell scraps from the bankruptcy! Very cheap little radios were available in the local markets.

The aftermath of the Los Angeles midget radio explosion had come to an end!

This story is over.
The saga of Los Angeles radio and television manufacturing is not.
A few higher-end manufacturers survived, with much more to come in future years!



REAL ESTATE-DEVELOPMENT-INDUSTRY

Los Angeles Times

SUNDAY MORNING, NOVEMBER 30, 1930. PART V.

CITY'S RADIO PRODUCTION TREBLES IN YEAR

LOS ANGELES TOPS WORLD IN MIDGET SET OUTPUT

Forty-three Local Factories Find Extensive Market for Chassis and Cabinets Manufactured

Three Working Shifts Employed to Fill Plant Orders

FORMAL OPENING OF BUILDING SET

Trojan Physical Education Structure Finished

University Ceremonies to Mark Occupancy

All Space to Be Utilized for Practical Purposes

BY JAMES L. DAVIS, Real Estate Editor

So great has been the expansion in radio manufacture in Los Angeles that the average daily output for November of this year is more than three times that of one year ago. Approx-

16 Radio Doings

Radiette

The Most Sensational Radio Value Ever Produced

You will be amazed at its outstanding performance, its exquisite beauty and its low price.

\$59⁵⁰

COMPLETE with tubes and built-in speaker

A MASTERPIECE of expert engineering and designing, produced by veteran radio engineers and master craftsmen.

Beautiful cabinet, of modernistic motif, designed by a well known sculptor. ALL ELECTRIC ALL METAL PERFECTLY SHIELDED—PERFECT TONE

PHONE FOR NAME OF YOUR NEAREST DEALER

DEALERS! We are now ready to supply you. Territory is rapidly being allotted. Phone or write

Keller-Fuller Mfg. Co.

1573 West Jefferson Los Angeles, Calif. EMpire 3638

6-Tube Electric Radios and Only 16 Inches High!

Radiettes --

\$65 With Tubes

Radiettes are full-size Radios with cabinets eliminated. By clever engineering these 6-tube neotrodyne sets with full-size loud speakers have been built into cases no larger than your table lamp. Put one on the mantel . . . take it along to the shore . . . place it on the dinner table when Amos 'n' Andy are on the air. For Radiettes are easily carried about, and plug into any A. C. light outlet. Their requirements as to antenna are easily arranged, too.

Deferred Payment Plan, if desired. \$10 First Payment, Balance \$10 Monthly

STRAWBRIDGE & CLOTHIER—Fifth Floor, Market Street

CALIFORNIA MADE Radios...

...are especially balanced to the West Coast geo-etherical conditions.

THROUGH the great California Radio Industry...thousands of Californians have at last found complete radio satisfaction under our difficult West Coast conditions...these and similar problems had to be met and solved to create radios peculiarly adapted to California.

And daily increasing thousands of delighted owners prove that the manufacturers of California-made radios have succeeded in perfecting a balance, a sharpness of receptivity, a clearness of tone, a beauty of cabinet work, and an economy of price which place the California-made radio above competition, in value as well as in performance.

These thousands of owners know that because the California manufacturer sells direct to the dealer, eliminating several middle profits, the retail buyer of a California-made radio benefits by a large saving in money. At the same time he helps to build the California Radio Industry... a statewide business which supports 40,000 people!

For genuine satisfaction under critical West Coast geo-etherical conditions...buy a California-made radio. You will get supreme service...save money...and keep home dollars at home!

Jackson Bell
The Cardinal
Powell
Monarch
Trojan

Flint
Falck
Giffillan
Patterson
Baldwin

ASK YOUR DEALER TO SHOW YOU THIS SEAL ON ANY OF THESE CALIFORNIA-MADE RADIOS

THE BIG GIFT

in the Small Package

JACKSON-BELL Midget RADIO

NEW MODEL 62

\$59⁵⁰ Complete

ONLY 15 inches high, 11 1/2 inches wide, and 8 inches front to rear, yet JACKSON-BELL Midget is a powerful, complete, up-to-the-minute Radio...musical instrument "par excellence"...and distinctive, classic embellishment. Think of the extra hours of happiness because of its handy compactness and easy portability. Inspiration, companionship, entertainment...always... wherever you are or go; any room, any time, any place. No other way so little money can buy so much. The ONLY radio combining big-set power, tone, and selectivity in so handy and attractive a cabinet. All-electric, tone control, electro-dynamic speaker, illuminated dial, 6 tubes (4 screen grid), and other latest modern features. \$19.50 complete ready to plug in, nothing else to buy. Ask your dealer for JACKSON-BELL, and be sure you get what you ask for.

Jackson-Bell Company, Los Angeles, Cal. Mfrs. of All-Electric Radios... Since 1926

"World's SMALLEST fine Radio and FINEST small Radio" Now obtainable from all First-Class Radio Dealers

Wholesale Distributors

DOUBLEDAY-HILL ELECTRIC CO.

110 Seventh Street, Pittsburgh

Complete line of Jackson-Bell Radios Now on Display at

BOGGS & BUHL

OPEN SATURDAY EVENING UNTIL 9 O'CLOCK

Above: Radio Doings 1930 Spring Radio Callbook
Right: Philadelphia Inquirer, May 9, 1930, page 7

Top: Los Angeles Times, Nov. 30, 1930, page 57. Left: Los Angeles Evening Express, Sep. 24, 1929, page 2. Right: The Pittsburgh Press, Dec. 12, 1930, page 41.

EVERY PLAY BY RADIO! .. JACKSON BELL RADIO

Whisk the dial, you're transported to the Yale Bowl—to Soldier's Field in Chicago—to Ann Arbor, Michigan. The Jackson-Bell puts you right in a box seat at the game—at a vantage point where you can almost SEE every play! The cheering fans . . . the sea of eager faces as they follow the big elevens over the gridiron—even the monotonous drone of the peanut vendor is brought in a realistic scene to your own home through the marvelous Jackson-Bell.

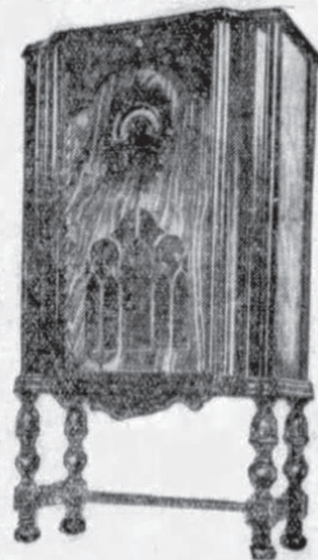
Its marked selectivity and tone clarity will convince you at once of its superiority over other radios at its price.

But you must see it and hear it!

**Any Jackson-Bell Dealer
Will Gladly Demonstrate!**

CITY DEALERS

ADAM, J. N. & CO., 369 Main St.
ADAM, MELDRUM & ANDERSON CO., 404 Main St.
ANTHONY FURNITURE CO., 692 Michigan Ave.
BARNUM, S. O. & SON CO., 265 Main St.
BERST, P. M. & SONS, 287 E. 1st St.
BICKELMAN, J. E., 152 Goodrich St.
BIEBA BROS., 177 Military Rd.
CORRIES, P. J., 267½ Main St.
DAVIS ELECTRIC SUPPLY CO., 801 William St.
DENTON, COTTIER & DANIELS, 40 Court St.
DETHLOFF, WM. CO., 525 Broadway
DIXON & ADAMS, 1182 Michigan Ave.
EMPIRE AUTO RADIO CO., 1831 Main St.
HADENER, Wm. John, 859 Genesee
KAYSER FURNITURE CO., 3012 Bailey Ave.
KAYSER FURNITURE CO., 1239 Jefferson
KOBLER & MILLER CO., 318 Genesee St.
KURTZMAN PIANO CO., 681 Main St.
LEARMAN RADIO CO., INC., 1407 Jefferson
LEE'S SERVICE STATION, 626 So. Park Ave.
LIPSON MATTRESS CO., 783 Fillmore Ave.
LUTZ FURNITURE CO., 150 E. Ferry St.
MOLIN'S RADIO SERVICE, 176 Grant St.
RADIO CYCLE CO., 2725 Delaware Ave.
RAPPORT'S TIRE SERVICE, 489 Elmwood Ave.
RINEHARDT, H. A., 1190 Laveley St.
RUMING'S RIVERSIDE FURNITURE CO., 754 Tonawanda St.
SCHILLER RADIO SERVICE, 263 Oak St.
SCHIFFERLE BROS., 538 Sycamore St.
SCHUNK, D. B., 463 Amherst St.
SEEBER, PHILIP P., 2245 Fillmore Ave.
SERVICE SALES CO., 560 Oak St.
SINGERMAN, L., 289 William St.
SOUTH SIDE FURNITURE CO., 2196 Seneca St.
STAHL HARDWARE CO., 926 Elmwood Ave.
STICHT FURNITURE CO., 284 W. Ferry St.
STRAUSS-DILCHER AUTO SUPPLY CO., 707 Main St.
STRANSKY, R. A., 890 Broadway
UPRIGHT TIRE & RUBBER CO., 965 Main St.
WANGLER ELECTRIC CO., 2329 Main St.
WETZEL BROS., 2504 Main St.
WHIGHAM BROS. & CO., INC., 748 Elmwood Ave.
ZENT, JOSEPH E., 1805 Niagara St.
ZOLTE'S BETTER FURNITURE STORE, 243 Lombard St.



**Jackson Bell
RADIO
\$59.95**
Complete
with seven
tubes

OUT-OF-TOWN

E. AURORA, Andrew's Furniture, Inc.
LANCASTER, Besser, Wm.
TONAWANDA, Chubb's
NIAGARA FALLS, Colavecchia, A.
Lega Furniture Co.
Master Music Co.
Magers, Paul
McFarland Hardware Co.
McGrath's & Durk
Smith Bros.
S. DAYTON, Dexter, M. C.
CLARENCE CENTER, Eschelman, E. W.
HAMBURG, Fish & Kronenberg
ANGOLA, Freshley, J. & Son
MEDINA, Hartt, H. LeBaron Co., Inc.
LOCKPORT, Holland Electric Co.
GOWANDA, Luca, M. H.
BRANT, Leahy, George
CASSADAGA, Payne Supply Co.
LOCKPORT, Pies & Anstead Corp.
FORESTVILLE, Philbrick & Philbrick
FREDONIA, Peoples Hardware Co.
N. TONAWANDA, Strassburg Hardware Co.
DUNKIRK, Stecker's Sporting Goods Store
KENMORE, Wheeler, Les
GLENWOOD, Jung, Gerhard
WILLIAMSVILLE, Schroeder, O. Henry
N. TONAWANDA, Smith, Charles E.
HAMBURG, Smith Bros.
SPRINGVILLE, Bement, J. W.
WESTFIELD, Crandall & Carpenter
HARTFIELD, Hartfield Mills
OLCOTT, Holman, J. E.
ALDEN, Frantz, A. E. & Son
BATAVIA, Pies, Max
CHERRY CREEK, Skiff & Bullock

Distributed by Anderson & Co., 81 Broadway
Wholesalers of Distinctive Furniture . . . Visitors Welcome

"LYRATONE" The Set with the Lyre on the Speaker

The Production of GILLFILLAN BROS., LOS ANGELES.

1931 MARVEL MIDGET

With the VOLUME, POWER and TONE of a large Console Set



Features:
Rola Full Tone Dynamic Speaker.
Four Screen-Grid Valves.
Six A.C. Valves.
Shielded Cadmium Plated Steel Chassis.
Four Tuned Circuits for Extreme Sensitivity.
Compact Attractive Walnut Cabinet.
Made under R.C.A. License.

N.Z. Retail Price, **\$21/15/-**
LIBERAL TERMS AND DISCOUNTS TO DEALERS.
Write, Wire, or 'Phone the Factory Representatives—
CRAWFORD & FINLAYSON Ltd.
BOX 675 WELLINGTON 'Phone 42-530.

2 ADVERTISEMENTS. THE WIRELESS WORLD JUNE 17TH, 1931.

6-VALVE ALL-ELECTRIC RADIO for £17-10-0 COMPLETE

LOOK FOR THE DIAMOND

For the diamond and be sure you are buying the new PARTRIDGE permanent moving coil speaker—2½, 10 and best yet produced. Beautifully made in every respect, extremely sensitive yet capable of handling immense power—5,000 Watts per sq. cm. in the gap. Robust aluminium disc mounting, with Output Transformer in separate base giving change-over by series-permanent (no loss of efficiency as with tapped transformers) from 11 to 221 and 2,000 to 5,000 Ohms primary impedance for pentodes, etc. Output Transformer in base 241.

AT LAST you can have super sensitivity, Areal living tonal quality, and selectivity to meet the most exacting demands, all combined in a handsome cabinet measuring only 8" x 11½" x 15". This amazing set incorporates three screened grid valves and a BUILT-IN MOVING COIL SPEAKER.

ONLY a very modest aerial is needed, and it is a fact that even if the local station is in your immediate neighbourhood, you can cut it out! All this for only £17-10-0. IF YOU WISH, YOU CAN PAY £2-10-0 down and £1-10-0 monthly and keep this amazing set at Barker's or Harrod's, or ask your dealer.

JACKSON-BELL DISTRIBUTORS Ltd.,
68, VICTORIA STREET, S.W.1.
'Phone: VIC. 4871. Works: Ken. 5096.

PARTRIDGE & MEE LTD.
31, Dover Street, LONDON, and 74, New Oxford St., LONDON.

The Greatest Value In Radio History

Jackson-Bell Midget Radio

(25 CYCLE)

\$59.50

COMPLETE With Set of
Matched Tubes
\$76.62 Complete in the Border
Cities with Duty and Taxes Paid



Licensed Under R.C.A. Patents

The long period of manufacture together with the tremendous volume of national sales enables the makers to present this wonderful radio at the lowest price ever offered in the highest quality receiver.

Here Are 5 Outstanding Features

1—Offers Complete Tone Control

First time offered in any "Midget" set. Gives you PERSONAL CONTROL of station tone, so you can enjoy music the way YOU like it. Also cuts down interference and produces maximum clear tone!

2—Has Four Screen-Grid Tubes

Three stages of tuned radio frequency amplification with four tuned circuits and screen grid power detector. Amazing selectivity and volume without DISTORTION.

3—Has Single Illuminated Dial

Operating a 4-Gang Condenser Important Points of Merit Noted in the Jackson-Bell "62" Midget

Its Perfect Tone Control Allows You to Tune to the lowest Whisper Without Impairing Quality.

Jackson-Bell Radio is guaranteed for 90 days . . . And all statements contained in this advertisement are warranted true by

WATERSTON'S

427 Woodward Ave.—Detroit

JUST NORTH OF JEFFERSON AVENUE RANDOLPH 6737-8
Who have served Canadians for over a quarter of a century, as the Home of Good Tools, Sporting Goods, Hardware and Radio
OPEN MONDAY AND SATURDAY EVENINGS UNTIL 9:30

Left Top: Radio Record and Home Journal, New Zealand, Jan. 23, 1931. This advertisement appeared in many different newspapers and magazines in New Zealand in 1931, demonstrating how widely available the radio was in that country.

Left Bottom: The Wireless World, June 17, 1931. This advertisement indicates that the Jackson-Bell Model 62 was widely available in the United Kingdom.

Right: Ontario, Canada advertisement for Jackson-Bell Model 62 'Swan' from Waterston's store in Detroit, Michigan. This ad is for the 25 cycle (Hz) version intended for sale to customers living in Ontario, Canada.

Floyd Paul, “The Midget Capitol of the World”

SCARS Gazette, November 1987

Fifty-nine companies are identified as doing business in the manufacturing, assembling, and/or distribution business in Los Angeles during the 1929-1931 period. These companies produced midget sets and are listed below.

Those companies with an asterisk (*) have been identified as advertising they were licensed under RCA, Latour and Hazeltine patents.

The Adams Co.	Hayden
* Advance Electric Co.	Hollywood
American Labs	Hoover
Arcadia	(previously Brown & Manhart)
* Austin Radio Mfg. Corp., Ltd.	* Herbert Horn
Avalon Radio Mfg. Co.	* International Radio Corp, Ltd.
Brown & Manhart Radio Mfgs.	* Jackson Bell Co.
* California Radio Co.	Keller-Fuller Mfg. Co. Ltd.
* Cardinal Radio Mfg. Co.	* Kemper Radio Corp.
(succeeded Longs Radio Co.)	Kenwood Radio Corp.
Champion Radio Mfg. Corp. Ltd.	Longs Radio Co.
* Channing Radio Labs.	Los Angeles Radio Mfg. Co.
Chief	* Master Radio Mfg. Co. Ltd.
Colbliss	Masterola
* Consolidated	McGrew-Austin Co.
(previously Mission Bell)	Mission Bell Radio Mfg. Co.
Crane, H.D., Co.	Moza1t
Crowe Radio Co.	Noellen Radio Corp
Custom Built Radio Co.	Pacific Coast Radio Corp. Ltd.
* Davidson-Haynes Mfg. Co.	* Patterson Radio Corp.
* Lee De Forest Mfg. Co. Ltd.	Peerless
Deluxe Radio Mfg. Co.	Plymouth Radio Corp.
Dwarf Radio Mfg. Co. Ltd.	* Powell Mfg. Co.
* Echophone Mfg. Co.	Seaboard Mfg. Co.
Elmore-Lambing Radio Co.	Seeley Elect. Co.
El Rey	Taylor Travers Corp. Ltd.
Embassy	Trinity Radio
* Flint Radio Corp.	Trojan Factories, Ltd.
Freed Radio Corp.	* Waltham Radio Corp. Ltd.
Gilbert, R.W.	Westerner Radio Mfg. Co.
Griffin-Smith Mfg. Co. Ltd.	Zaney-Gill Corp.

*If you have questions or comments for the author,
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