

# electronics

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O. H. CALDWELL  
Editor  
FRANKLIN S. IRBY, Ph. D.  
Associate Editor  
KEITH HENNEY  
Associate Editor

## Radio at the cross-roads!

ON the following pages will be found a mass of significant figures relating to radio manufacturing and design, sound pictures, sound devices, and the associated arts.

The radio industry sold a total of 3,706,900 receiving sets in 1930,—only half a million, or 14 per cent, less than the year before. But its 1930 "dollar volume" of set sales dropped from \$525,000,000 in 1929, down to \$302,529,500 in 1930, a reduction of 45 per cent.

Tube sales during the same interval fell off 25 per cent. And, taking all products, the industry as a whole sold a grand total of \$500,951,500 in 1930, as compared with \$842,548,000 in 1929, a reduction of about 40 per cent.

MEANWHILE unit prices have also sharply decreased. Whereas the average radio set sold in 1928 for \$115 and in 1929 for \$110, the 1930 average price was only \$81.50 per set, reflecting the influence of the 1,130,400 midgets which made up 45 per cent of the 1930 set volume. This ratio of midgets to large sets is growing, and based on the demands just observed in the winter months of the 1930-31 season, midget sets may be expected to make up at least 75 per cent of the 1931 volume!

The radio industry thus faces an ordeal and a problem—the problem of *smaller unit sales* but comparable numbers of units. It must re-organize to handle the same set volume, at half the dollar total. From this situation one way out will be through energetic increase in the number of sets sold.

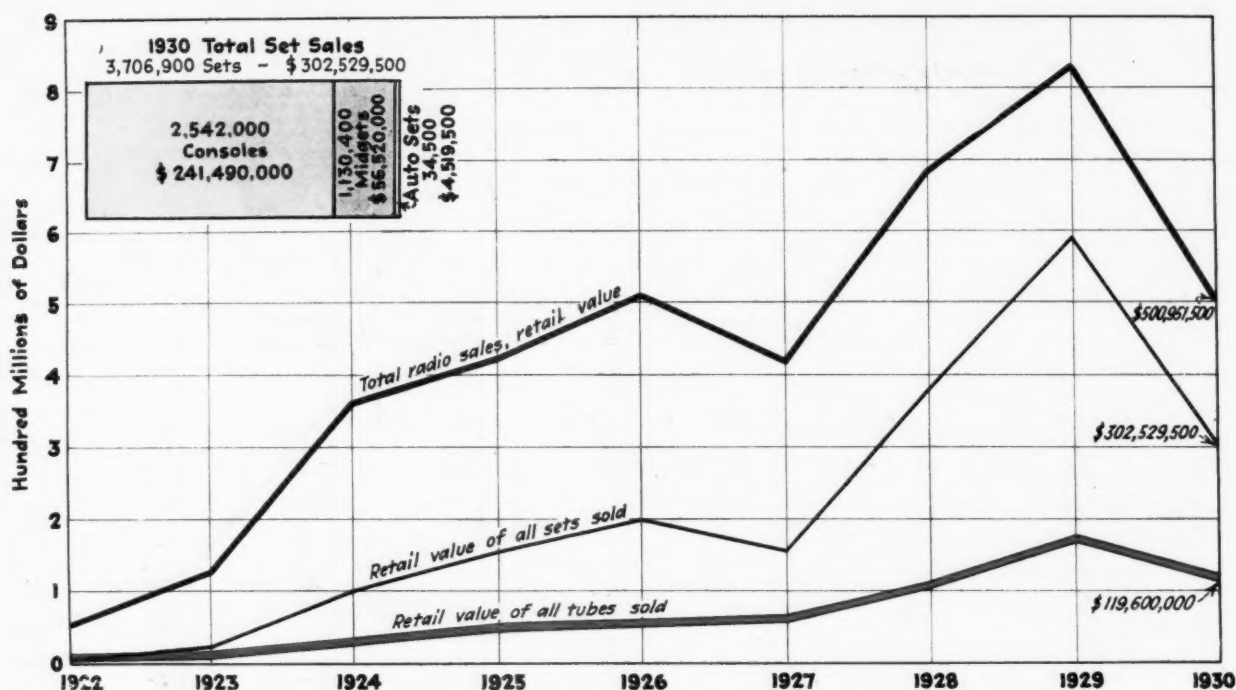
"Two and three sets per home," radio for the business man's office, and "a radio set on every automobile"—these are all projects which have been discussed and are worth developing. For such efforts now, if ever, the hour has struck.

A NEW price level of buying power has been tapped, and this should be utilized to swell sales. But price alone will not build a substantial radio industry. Quality and tone value, and right distribution policies and practices all along the line, are essentials in facing the new situation. *A sound industry makes profits*, and profits have been a missing factor during the past year in receiver manufacture. Indeed, so far as *Electronics* can determine, not a single radio manufacturer (except those having other lines of operation besides radio), made any profit whatever during 1930. This is the deplorable but insistent fact.

Radio today stands at the crossroads. The trends and developments of the next ten months will indicate which way the future lies. Statistics like those presented here form the best possible guide for any radio executive as to the right road to take.

Statistics in this issue reveal vital changes radio industry is undergoing. New problems of 1931.

# STATISTICS OF RADIO



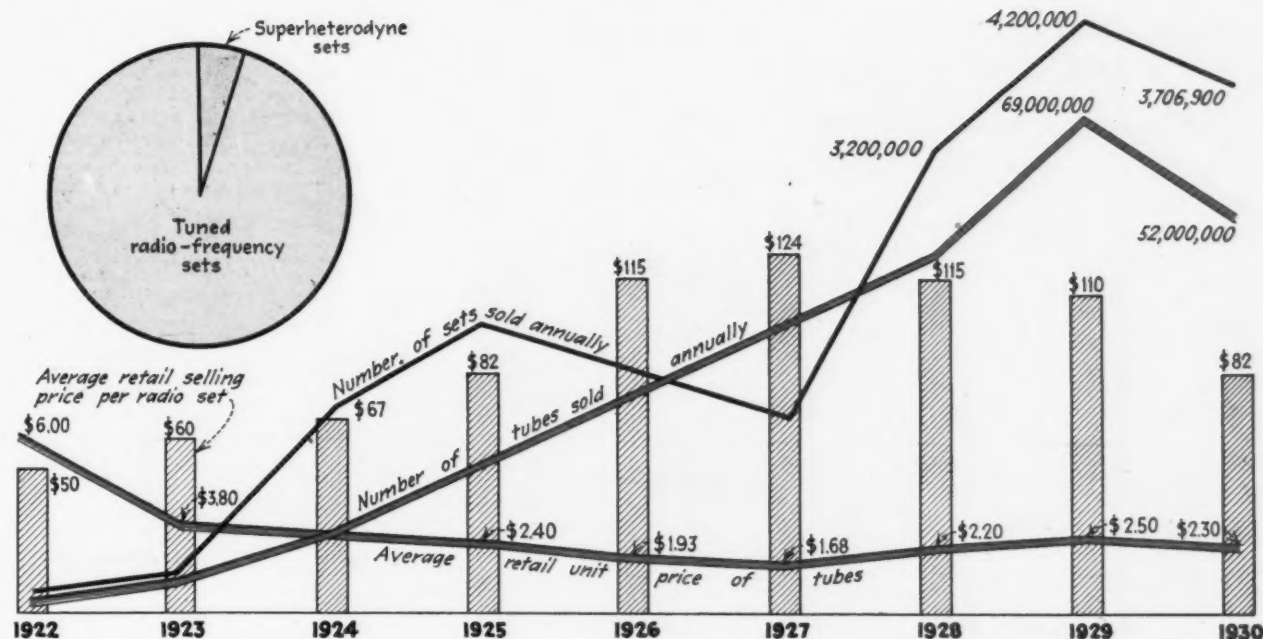
How radio sales to the public have varied from year to year. For the purpose of the above graphs, the 1930 sales of automobile sets (shown separately in the table below) have been included with consoles and midgets in the grand total of radio receiving sets

## Analysis showing numbers and dollar volume of radio sets, tubes, batteries,

	1922	1923	1924	1925	1926	1927	1928
Radio Sets, factory-built (including consoles and built-in reproducers).....	100,000 \$5,000,000	250,000 \$15,000,000	1,500,000 \$100,000,000	2,000,000 \$165,000,000	1,750,000 \$200,000,000	1,350,000 \$168,750,000	3,200,000 \$350,000,000
Radio-Phonograph Combinations.....							81,000 \$38,000,000
Tubes.....	1,000,000 \$6,000,000	4,500,000 \$17,000,000	12,000,000 \$36,000,000	20,000,000 \$48,000,000	30,000,000 \$58,000,000	41,200,000 \$67,300,000	50,200,000 \$110,250,000
Reproducers (excluding those in consoles and combinations).....	25,000 \$750,000	500,000 \$12,000,000	1,500,000 \$30,000,000	2,000,000 \$32,000,000	2,000,000 \$30,000,000	1,400,000 \$28,000,000	2,460,000 \$66,400,000
A-B-C (Dry) Batteries.....	\$4,500,000	\$6,000,000	\$55,000,000	\$66,000,000	\$80,000,000	\$68,000,000	\$50,400,000
A-B Power Units, Storage Batteries and Chargers....		\$7,000,000	\$25,400,000	\$30,000,000	\$55,000,000	\$34,000,000	\$17,500,000
Other accessories*.....	\$3,750,000	\$4,000,000	\$11,600,000	\$24,000,000	\$33,000,000	\$38,550,000	\$46,000,000
Parts (does not include sales to manufacturers).....	\$40,000,000	\$75,000,000	\$100,000,000	\$65,000,000	\$50,000,000	\$21,000,000	\$12,000,000
<b>Totals</b>							
Sets, plus Combinations....	\$5,000,000	\$15,000,000	\$100,000,000	\$165,000,000	\$200,000,000	\$168,750,000	\$388,000,000
Parts.....	\$40,000,000	\$75,000,000	\$100,000,000	\$65,000,000	\$50,000,000	\$21,000,000	\$12,000,000
Accessories.....	\$15,000,000	\$46,000,000	\$158,000,000	\$200,000,000	\$256,000,000	\$235,850,000	\$290,550,000
<b>Total Sales for year.....</b>	<b>\$60,000,000</b>	<b>\$136,000,000</b>	<b>\$358,000,000</b>	<b>\$430,000,000</b>	<b>\$506,000,000</b>	<b>\$425,600,000</b>	<b>\$690,550,000</b>

\*Includes aerial equipment, meters, pick-ups, turntables, headsets, furniture, etc.

# SALES DURING 1930



Trends of radio set and tube sales, as shown in numbers of units and in unit prices. The shaded vertical columns represent the respective average retail selling prices of sets by years, dropping from \$124 in 1927, and \$110 in 1929, down to \$82 in 1930

## accessories and parts, 1922 to 1930

1929	1930	Product
4,200,000 \$525,000,000	3,672,400 \$298,010,000	Consoles and Midget Receivers.
238,000 \$67,068,000	155,400 \$34,188,000	Radio-Phonograph Combinations.
69,000,000 \$172,500,000	52,000,000 \$119,600,000	Tubes.
800,000 \$16,000,000		Speakers (excluding those already in receivers).
\$30,530,000	\$21,514,000	A-B-C (Dry) Batteries.
\$14,350,000	\$6,920,000	A-B Power Units, Storage Batteries and Chargers.
\$9,600,000	\$6,700,000	Other Accessories*.
\$7,500,000	\$6,000,000 (estimated)	Parts (not to manufacturers).
\$592,068,000	\$4,519,500	Automobile-Radio Sets and Combinations.
7,500,000 242,980,000	6,000,000 158,234,000	Parts. Accessories (inc. tubes).
\$842,548,000	\$500,951,500	Total Sales for Year

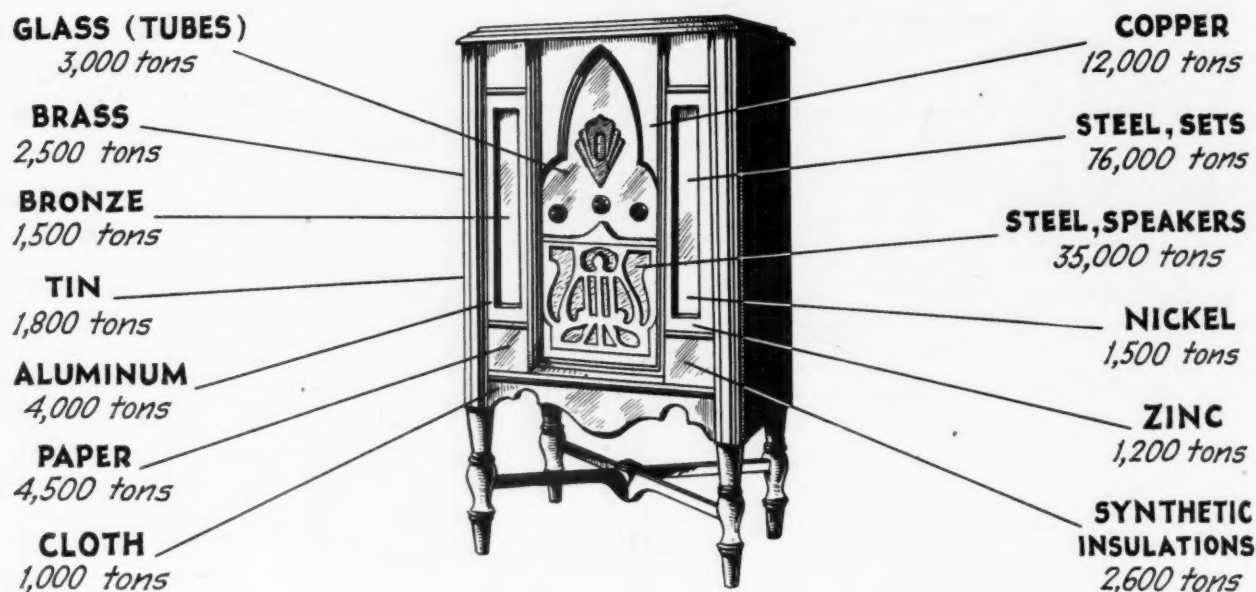
## REGARDING STATISTICS IN THIS ISSUE

From the very beginning of radio broadcasting, statistics of radio sales have been compiled annually by the staff of the McGraw-Hill Publishing Company, publishers of *Electrical Merchandising*, *Radio Retailing* and *Electronics*. The figures for 1930 continue the series collected annually by these associated publications, and were compiled from confidential reports of production and sales, furnished through the co-operation of the manufacturers and licensors, diligently cross-checked and compared.

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# Materials and parts entering into radio manufacture



## Component parts purchased by set manufacturers in 1930

	Sets Reported On In Questionnaire (71%)	Total Number of Sets Supplied (100%)	No. Per Set	Cost Per Set	Total Dollar Volume	Number of Units Purchased
Sockets.....	1,280,340	1,800,000	7	\$ .35	\$630,000	12,600,000
Cabinets.....	1,045,290	1,470,000	1	8.90	13,100,000	1,470,000
Audio Transformers.....	849,500	1,190,000	2	.90	1,070,000	2,380,000
Radio Freq. Coils.....	471,000	665,000	3	.75	500,000	1,995,000
Tuning Condensers (Gang).....	493,490	695,000	1	1.50	1,040,000	695,000
R. F. Chokes.....	509,390	715,000	4	.40	286,000	2,860,000
By-pass Condensers.....	674,530	950,000	10	.96	910,000	9,500,000
Filter Condensers.....	1,343,140	1,890,000	2	1.15	2,300,000	3,780,000
Filter Chokes.....	872,350	1,230,000	1	.47	577,000	1,230,000
Power Transformers.....	1,373,780	1,935,000	1	1.45	2,800,000	1,935,000
Fixed Resistors.....	1,979,530	2,780,000	4	.35	975,000	11,120,000
Variable Resistors.....	2,421,845	3,400,000	2	.70	2,380,000	6,800,000
Loudspeakers.....	565,000	1,258,000	1	3.50	4,400,000	1,258,000
					<b>\$30,968,000</b>	

Radio set manufacturers either build or buy components. A survey answered by makers of 71 per cent of 1930 set production indicated that sockets were bought for 1,280,340 receivers. This number projected into entire 1930 production indicates 1,800,000 receivers for which sockets were bought. All above data secured in similar manner.

## Radio and sound-picture investment for 1930

	Total investment United States	Annual gross revenue	Number of employees	Annual payroll
Radio manufacturers, <sup>1</sup> distributors, etc.....	\$200,000,000	\$500,000,000	100,000	\$200,000,000
Broadcasting stations.....	\$25,000,000	\$35,000,000	10,000	\$20,000,000
Listeners' sets (15,000,000).....	\$1,500,000,000			\$200,000,000 <sup>2</sup>
Commercial radio stations.....	\$20,000,000	\$8,000,000	17,000	\$4,000,000
Sound-picture manufacturers, producers and distributors.....	\$900,000,000	\$360,000,000	65,000	\$115,000,000
Sound-picture theatres (22,000 with 11,000,000 seats).....	\$1,500,000,000	\$1,100,000,000	185,000	\$275,000,000

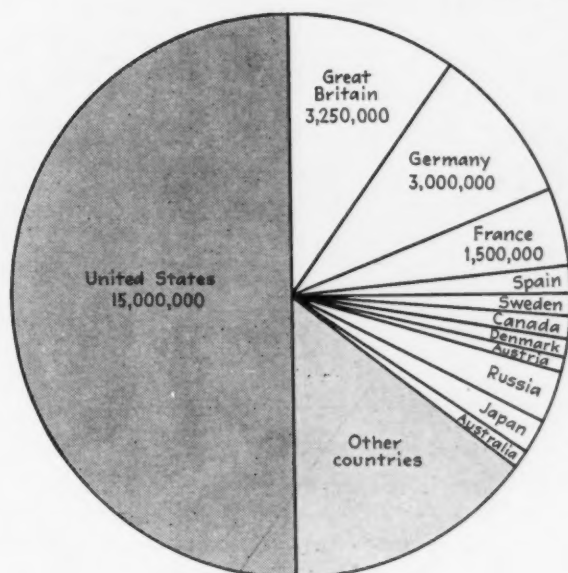
1. Radio set manufacturers, licensed and unlicensed, now number 155.

2. Employees at peak of seasonal employment.

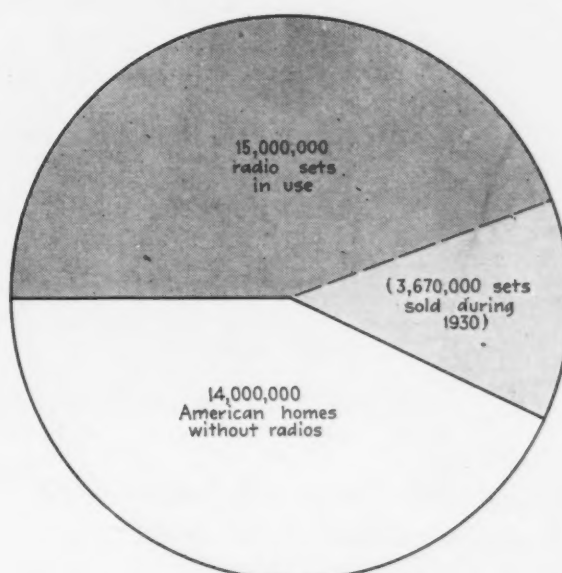
3. Annual operating expense of listeners' sets, for tube replacements, electricity, batteries, servicing, etc.

# Radio markets of the world.

## Sets in use, by countries, states, etc.



Radio Sets of the World



Radio Sets in United States

### Exports of radio and sound equipment

THE year 1930 was the first for which effort was made by the Bureau of Foreign and Domestic Commerce of the Department of Commerce, to collect figures on radio and sound-equipment exports from the United States.

Transmitting tubes, sets and parts.....	\$1,143,690
Receiving sets.....	11,549,621
Receiving set tubes.....	2,363,234
Receiving set components.....	4,375,481
Loud speakers.....	1,635,698
Other receiving set components.....	2,826,235
Total.....	\$23,893,959

### Canada's half-million licensed radios

IN CANADA where every radio set owner is by law required to pay an annual license fee of \$1.00 to sustain the Dominion's radio administration, 444,676 receiving sets were licensed at the end of 1930. It is believed, however, that the total sets in use greatly exceeds this, reaching perhaps 700,000 or more. Canada's population is now 9,934,000 and 1,436,000 Canadian homes are wired. Radio set sales for 1930 numbered 200,000.

### Fifty-five police radio stations

THIRTY-SEVEN state and local police radio stations are now in operation in American cities and 18 others are now building, according to the Federal Radio Commission's newest police-radio station log. Most of the stations are used for local low-power broadcasting to squad cars via the short waves, although Pennsylvania's state police have five long-wave stations.

### U. S. Census figures on radio sets, to date

WITH the taking of the 1930 Census, a count was made of radio sets. With the preliminary tabulation of the census population figures, the radio-set count is being made available by states. Following are the states available as we go to press:

Area	Number of Families	Persons per Family	Families Having Radios	Number	Per Cent
<b>Alabama (state).....</b>	592,530	4.5	56,491		9.5
Anniston.....	5,244	4.3	750		14.3
Bessemer.....	5,430	3.8	794		14.6
Birmingham.....	64,443	4.0	17,228		26.7
Gadsden.....	5,546	4.3	1,107		20.0
Huntsville.....	3,126	3.7	704		22.5
Mobile.....	16,909	4.0	3,090		18.3
Montgomery.....	17,195	3.8	3,206		18.6
Selma.....	4,956	3.6	824		16.6
Tuscaloosa.....	4,578	4.5	905		19.8
<b>Arizona (state).....</b>	106,630	4.1	19,295		18.1
Phoenix.....	12,666	3.8	3,655		28.9
Tucson.....	8,266	3.9	1,945		23.5
<b>New Hampshire.....</b>	119,660	3.9	53,111		44.4
Manchester.....	18,832	4.1	7,652		40.6
Nashua.....	7,612	4.1	3,557		46.7
Berlin.....	4,292	4.7	1,524		35.5
Concord.....	6,181	4.1	3,043		49.2
Dover.....	3,404	4.0	1,707		50.1
Keene.....	3,637	3.8	1,743		47.9
Laconia.....	3,178	3.9	1,535		48.3
Portsmouth.....	3,604	4.0	1,934		53.7
Claremont.....	3,030	4.1	1,266		41.8
Rochester.....	2,650	3.8	1,164		43.9
<b>Delaware (state).....</b>	59,295	4.0	27,183		45.8
Wilmington.....	25,694	4.1	13,720		53.4
<b>Arkansas (state).....</b>	439,408	4.2	40,248		9.2
Blytheville.....	2,682	3.8	433		16.1
El Dorado.....	4,466	3.7	1,081		24.2
Fort Smith.....	8,200	3.8	2,120		25.9
Hot Springs.....	5,428	3.7	1,096		20.2
Jonesboro.....	2,597	4.0	726		28.0
Little Rock.....	25,148	4.1	7,575		30.0
Pine Bluff.....	5,449	3.7	1,257		22.7
Texarkana, Ark.....	2,917	3.7	592		20.3