



First Class
WORLD TOURS

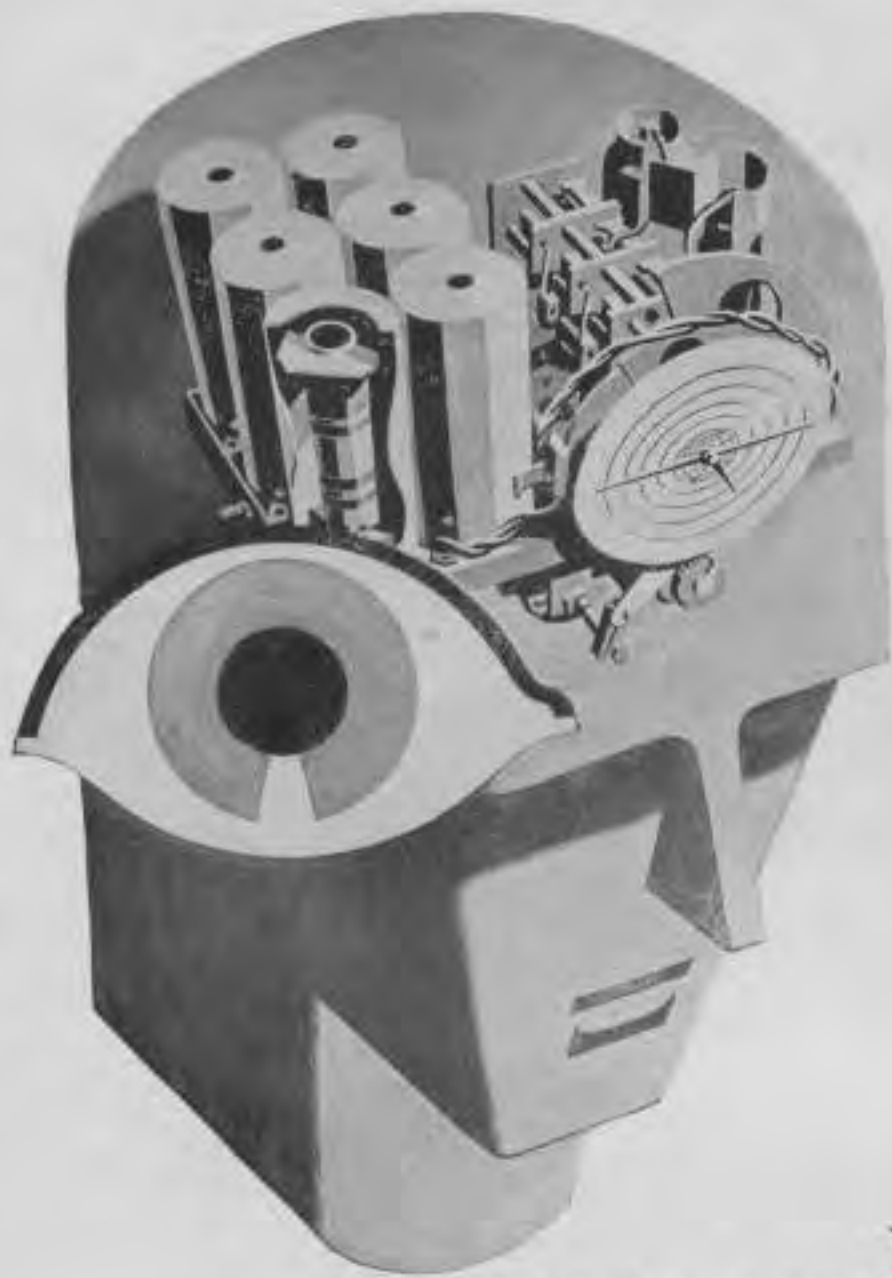
VIA THE SUPERB NEW

RCA VICTOR

MAGIC BRAIN INSTRUMENTS



HOW TO GET THE MOST FROM YOUR NEW RADIO



YOU are to be congratulated on your choice of a 1936 RCA Victor Magic Brain Radio. In introducing these instruments RCA Victor has taken still another decisive step in the advancement of radio science. Known throughout the industry as the creator of many famous "firsts" in radio, RCA Victor now brings you still more improvements—the new Magic Brain, the Magic Eye, and RCA Metal Tubes.

In your new radio are also intangible features which will enhance your listening-in pleasure. Into each chassis is built RCA Victor's many years of experience in engineering all types of radio and sound equipment—for ocean liners, transport planes, police radio systems, leading broadcasting stations, sound-movie studios and theatres, Victor records and phonographs.

RCA Victor wishes you to be satisfied with no less than the finest performance your new radio is capable of producing, and therefore urges you to absorb the interesting facts and instructions in this book. Then you will realize the greatest joy from your radio and—RCA Victor hopes—you will be so pleased that you will take delight in showing your friends how well it performs.

THE NEW MAGIC BRAIN



Outstanding as the 1935 Magic Brain proved, short-wave reception took still another tremendous step forward in the new 1936 Magic Brain with RCA Metal Tubes. It is as far in advance of last year's as it, in turn, was an improvement over previous short-wave receivers.

The new RCA Metal Tubes provide better performance and even greater stability—the famous radio frequency stage is this year even more compact, more sensitive, and has shorter leads to better perform its important function of eliminating all stations but the one you want; and to super-charge this signal for better clarity and noise-free reproduction.

The Hexode Pentagrid Converter is the most important single advance in short-wave performance since the original Magic Brain. It is a metal-encased, 5-grid converter which increases the sensitivity of the Magic Brain five times, for short-wave reception. Additionally, the automatic sensitivity booster increases the Magic Brain sensitivity five times on the short-wave bands, and these two features combined provide super-sensitivity on the foreign bands where it is most needed. Hence you hear more weak and distant foreign stations, at good volume.

These are but a few of the many improvements in the Magic Brain unit which serves your radio.

THE RCA VICTOR MAGIC EYE

The Magic Eye "sees that you get best reception." No longer need you be uncertain as to whether the

station you want is precisely tuned. The Magic Eye assures excellent quality, for it indicates infallibly when the signal is coming in with full strength and clearness.



The Magic Eye is actually the top of a new RCA 6E5 tube—the Cathode Ray Tube which operates on the principle which has made Television development possible. What you actually see when you look at the green light is the result of thousands of electrons being discharged from a tiny ray within the Eye. When the dark sector below the center of the "Eye" is narrowest, you are hearing the station you want with maximum clarity. (See Page 6).

THE NEW RCA METAL TUBES



Metal Tubes are the greatest tube advance in 28 years. "Sealed in Steel" tubes are quieter, perfectly shielded, uniform—and give better short-wave performance.

SPECIAL ANTENNA ESSENTIAL TO SHORT-WAVE RECEPTION

No radio can do more than reproduce programs as its antenna picks them up. If the signals are not clear when they reach your radio set, reproduction will not be clear. Just as bringing in short-wave programs requires a scientifically designed radio with many special features, so does it require a special, scientifically designed aerial. The RCA World-Wide Antenna System minimizes man-made static, the greatest enemy of short-wave reception (See Page 3).

Unlike most aerials which have maximum effi-

ciency at only one given frequency, the RCA World-Wide Antenna System is efficient over a wide span of short waves as well as over the standard broadcast band. This is because of the "double doublet" principle which makes the antenna virtually four complementary aerials in one.

You will be amply repaid for the small amount an RCA Antenna costs!



Diagram 1

Radio waves are comparable to ocean waves. **Wave length** is the distance from crest to crest (in meters); **frequency**, the number of waves or cycles transmitted per second (in kilocycles or megacycles).

A SHORT CUT TO SHORT WAVES

A complete discussion of short waves would run, easily, to hundreds of thousands of words—and highly technical words at that. However, this general outline will enable you to understand the basic principles:

Assume that radio waves are like ocean waves. The *wave length* is the distance from crest to crest. The *frequency* is the number of waves that pass a given point in one second. Wave length is measured in meters. Frequency is expressed in kilocycles or megacycles. A kilocycle is 1000 cycles (complete radio waves), and a megacycle is 1000 kilocycles. The term megacycle is used in connection with short waves since short-wave frequencies run to thousands of kilocycles, and it is easier to read on your dial, for example, 49.7 megacycles than 49,700 kilocycles.

Note: The higher the frequency the shorter the radio wave. This will be apparent by again considering Diagram 1. If more waves pass the flagpole in one second, they must be "smaller" waves—shorter from crest to crest.

Thus, WJZ, which broadcasts on a frequency of 760 kilocycles, transmits waves about 400 meters long. GSG in London, a short-wave station, broadcasts at 17.77 megacycles, uses a wave only 16.9 meters long.

HOW SHORT WAVES TRAVEL

Two types of radio waves leave the transmitting station—the *ground wave* and the *sky wave*. (See Diagram 2.)

The ground wave travels over the ground for a distance of only 15 to 75 miles.

The sky wave travels skyward for a distance of approximately 100 miles until it strikes an ionized atmospheric stratum known as the Kennelly-Heaviside layer. This may be imagined as a sort of spherical mirror encompassing the earth much as an egg shell encompasses the yolk. When the sky wave meets this layer, it is reflected and returns to the earth at a distance of 90 to 2500 miles from the station.

According to the most generally accepted theory, sky waves "bounce" several times between the Kennelly-Heaviside layer and the earth, much as a tennis ball might bounce several times between the floor and the ceiling of a room.

The *Skip Distance* of a station is an area that is not covered by either that station's "ground wave" or "sky wave".

The reception zones and skip distances of any station change with the varying altitude of the Kennelly-Heaviside layer. This is affected by daylight, darkness, season of the year and atmospheric conditions.

Thus, again considering Diagram 2, house B can receive the sky wave illustrated and house A cannot. Diagram 3, however, illustrates that variation in altitude of the layer will bring the sky wave within the reach of house A, but not of house B. This explains why you may receive a certain short-wave station at one time and be unable to receive it another time.



Diagram 2

You hear short waves at great distances because the Kennelly-Heaviside Layer, 75-100 miles above the earth, reflects them to you, as shown. House B can get the station shown, but house A cannot.

It should be remembered that all stations have different skip distance zones and that, though you may be within the "skip-distance" of a few stations, there will still be many stations you can receive.

Note: Diagrams 2 and 3 show only the westward course of a ground wave and sky wave. Both waves, however, radiate from the antenna in all directions, acting as illustrated by the east-to-west wave.



Diagram 3

When the height of the layer varies, reception zones vary, too. Now use A can get the station shown; House B cannot. Daylight, darkness, seasons and atmospheric changes cause the height of the layer to fluctuate.

THE BEHAVIOR OF SHORT WAVES

The distances radio waves travel are affected by daylight, darkness and by the season of the year. The table on Page 6 estimates the distances over which you may receive short wave programs.

Note that the longer short-waves travel best through darkness and the ultra short waves travel best through daylight. An example of this is that a 49-meter wave can be heard well at night over an unlimited distance; but during the daytime it can be heard only from 100 to 200 miles away.

16-meter waves, on the other hand, may be heard thousands of miles during the day, but not more than 15 miles at night.

Therefore, before trying to get a certain station, you should consult the chart on Page 6 and make sure its waves will reach you at the time you wish to tune it in.

STATIC ON SHORT WAVES

A thunder storm which will often mar standard reception, will have little or no effect on short-wave reception. On the other hand, man-made static, which has little or no effect on standard reception, is likely to mar listening-in on short waves.

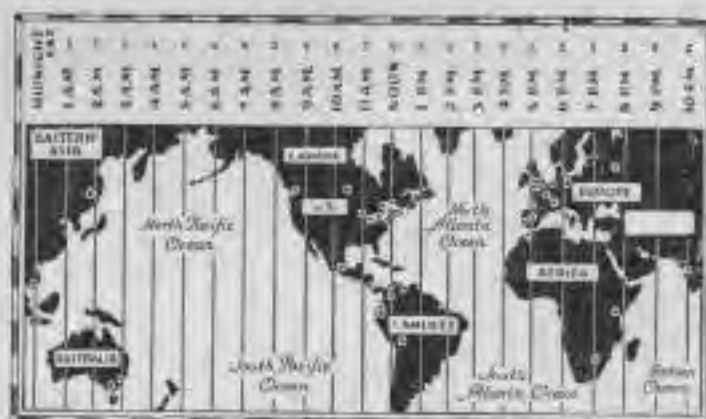
Man-made Static is created by trolley lines, electric elevators, vacuum cleaners, etc., and even though you may be some distance from them, their disturbance may be carried to your home by means of power or telephone lines.

A special noise-shield built into your Magic Brain Radio prevents man-made static entering the set through the power cord. An RCA World-Wide Antenna System (See Page 1) is recommended to minimize or eliminate man-made static from other sources.

SHORT WAVES CARRY AMERICAN PROGRAMS, TOO

When static mars reception of a standard network program you wish to hear, you can often find it on an American short-wave station. See the list of International Short-Wave Stations in America which sometimes carry network programs. (Page 10).

TIME CHANGES AROUND THE WORLD



When you travel westward, you set your watch an hour earlier at approximately every 1000 miles. Thus, when it is noon in New York, it is only 11 A.M. in Chicago—10 A.M. in Denver—9 A.M. in San Francisco—and so on around the world.

The log makes it easy for you to determine the time in any country. *Example:* Opposite "Paris, France" you will find "plus 4 hours and 51 minutes." This means that it is 4 hours and 51 minutes later in Paris than in the Eastern Standard Time zone. Therefore, at 11 P.M. in New York, it would be 3:51 A.M. in Paris, and it would be inadvisable to attempt to bring in a French station at that hour. At present, some British and German stations, despite their much later time, broadcast far into their night, but



Diagram 4

they are exceptions. Most foreign stations broadcast during their daytime and evening.

SCHEDULES OF SHORT-WAVE STATIONS

Many foreign stations are on the air only a few hours a day, and only a few days a week. Many of them go on and off the air several times during one day. The log on pages 8 and 9 contains foreign station schedules according to latest information. They are subject to change, however, and you should supplement this log with short-wave information you will find in your daily newspaper or radio periodical.

HOW TO OPERATE YOUR RCA VICTOR MAGIC BRAIN RADIO

KNOBS — All Magic Brain receivers have five radio control knobs across the instrument panel. From left to right they are:

(1) *Music-Speech Control and On-Off Switch* —Turning this knob clockwise turns the set on. First position of the switch gives you best reproduction of speech; second, best reproduction of music. (In the 8 and 9 tube models this knob is an on-off switch only.)



Diagram 5

(2) *Volume Control*—This knob, second from the left, makes the set play louder as you turn it clockwise and softer as you turn it the other way.

(3) *Tuning Control* (located under the dial)—Operates the dial pointer. When dialing short-wave stations, you should pull the knob out, toward you and away from the cabinet, thus shifting to slow-tuning position (50:1 ratio); when pushed in the pointer turns on a 10:1 ratio, the proper speed for dialing standard stations (See diagram 6).

(4) *Range Selector* (second knob from the right) —Adjusts your radio so you can tune over the dial scale you desire—the A, B, C, etc. For the types of programs on each dial scale, see page 5.

If you own one of the most luxurious Magic Brain models, your dial is of the new Selector type; showing only one tuning scale at a time. Just above the center of each scale is its identifying letter, A, B, C, etc. (See Diagram 4).

The Colorband Dial scales are similarly lettered and the smaller arrow at the bottom tells you on which scale you are tuning. (See Diagram 5.)



Diagram 6

Band Spreader—All Magic Brain models of 10 tubes or more offer the Band Spreader—an extremely convenient feature for dialing short waves. It consists of a small pointer

and a circular scale marked 0 to 100. (See Diagrams 4 and 5.) You will note that as you turn your large "station" pointer ever so slightly, the Band Spreader pointer will turn several degrees. Thus it "spreads out" close-together short-wave bands.

Example: When you turn the large pointer over the 25-meter band of the C scale, you may find as many as three short-wave stations hardly farther apart than the width of the pointer itself. By looking at the Band Spreader pointer, however, you will find that they will be as far apart as 10 or 15 degrees on the Band Spreader scale.

The exact reading of each should be noted down in the Band Spreader column of the log. It will then be easy to locate the stations when you wish to hear them again.

(5) **Tone Control** (righthand knob)—For adjusting the balance between bass and treble of the music you are listening to. If you like full, heavy bass, turn the knob counter-clockwise; if you wish the treble to predominate, turn it clockwise.

This knob is also useful as a noise-reducer. When background noise is loud, turn the tone control to the point where it is at a minimum.

HOW TO READ THE DIAL

You read the Selector and Colorband Dials in the same way. On each the A scale covers from 540-1800 kcs.; the C scale from 6.0-18 mcs., and so on.

On Magic Brain models the X and A bands are marked in kilocycles, the B, C, and D bands in megacycles.

THE BANDS YOUR RADIO COVERS

Some Magic Brain models cover the great span of 140-410 and 540-60,000 kcs.—i.e., the X, A, B, C, and D bands. Some models omit the X and the B or the X and the D bands. Note the letters above the tuning scales on your dial to determine which your set covers, or consult the range chart on page 7.

HOW TO FIND THE TYPE OF PROGRAM YOU WANT

The list below shows every type of broadcasting received by Magic Brain radios, and just where to find it on the dial.

Where to Find What You Want on Your Dial

When You Want to Hear	Bring These Dial Scales into Operation	Turn Your Needle to These Marks	Between These Frequencies
FOREIGN PROGRAMS —Colorful broadcasts from nations of the world	B 6.0-6.15 mcs.	49-Meter Band	6.0-6.15 mcs.
	C 6.0-18 mcs.	31-Meter Band 25 " " 19 " " 15 " "	9.4-9.5 mcs. 11.7-11.9 mcs. 15.3-15.35 mcs. 17.75-17.8 mcs.
	D 18-60 mcs.	13-Meter Band 11 " "	21.45-21.55 mcs. 25.6-25.6 mcs.
DOMESTIC PROGRAMS —Your favorite broadcasts on American stations	A 540-1800 kcs.	"Standard Broadcast"	540-1600 kcs.
POLICE CALLS —Thrilling dispatches to police cars ordering them to scenes of crime	A 540-1800 kcs.	"Police"	1600-1720 kcs.
	B 1.8-6.0 mcs.	"Police"	2.3-2.5 mcs.
	D 18-60 mcs.	"Police"	30-41 mcs.
AIRCRAFT CALLS —Dramatic calls between airports and speeding transport planes miles away, high in air.	At night— B 1.8-6.0 mcs.	"Aircraft"	2.7-3.5 mcs.
	Daytime— B 1.8-6.0 mcs.	"Aircraft"	5.4-5.9 mcs.
AMATEUR PHONE —Interesting conversations between amateur radio operators	B 1.8-6.0 mcs.	"AMATEUR"	1.6-2.0 mcs. and 3.9-4.0 mcs.
	C 6.0-18 mcs.	"AMATEUR"	14.0-14.4 mcs.
	D 18-60 mcs.	"AMATEUR"	28.0-29.0 mcs. and 56.0-60.0 mcs.
U. S. AVIATION WEATHER	X 140-410 kcs.	"U. S. Weather Reports"	200-410 kcs.

Approximate Effect of Time of Day and Season of Year on Short-Wave Transmission

Wave Length (meters)	Ground Wave Range	Sky Wave (Summer) Reliable Range		Sky Wave (Winter) Reliable Range	
		Noon	Midnight	Noon	Midnight
		Miles	Miles	Miles	Miles
100	90	—90	90—600	80—100	90—2500
49	75	100—200	250—5000	200—600	400—*
31	60	200—700	1000—*	500—2000	1500—*
25	50	300—1000	1500—*	600—3000	2000—*
19	35	400—2000	2500—*	900—4000	X
16	15	700—4000	X	1500—*	X

*—Unlimited distance.

X—Ordinarily cannot be heard.

NOTE—Time and season apply to transmitting station. The above table applies to transmitters of relatively high power and to receivers operating under favorable conditions.

HOW TO DIAL FOREIGN STATIONS



Turn your radio on and while the tubes are warming up look at your log and select the country and station you would like to hear. Make sure the station broadcasts on the day and at the

hour you wish to hear it. Also notice in which meter band you will find it, and the frequency in megacycles. (All this information appears in the log.)

Next, refer to the chart above and make sure programs in that meter band can be heard over the distance from station to you at the time you wish to hear it. Turn the volume control clockwise for loud reproduction.

Turn the Range Selector so that the proper dial scale is brought into operation.

Your Tuning Knob pushed in for fast tuning, move the pointer until it is over the proper meter band, i. e., the 49-meter, 25-meter, or whichever you've chosen. Then pull the Tuning Knob toward you until it clicks. Now, in slow tuning position, turn the pointer to the megacycle reading given in the log.

When you hear the station, adjust the volume with the *Volume Control*, not the Tuning Knob.

If your radio has the Magic Eye, turn the Tuning Knob ever so slightly back and forth until the dark part of the eye is narrowest; then you are precisely tuned in on the program you want.

Do not be satisfied merely to receive a program. Be sure your radio is bringing it in as well as possible. If you do not have a Magic Eye set, listen very carefully to locate the point on the dial where the reception is sharpest.

If music is coming in, you will want the Music-Speech Control Knob set to "Music Position," as indicated on the cabinet. Switch it to "Speech Position" when announcements come on.

Now adjust the Tone Control until the balance between bass and treble is to your taste. Should reception be noisy, due to atmospheric conditions, you can probably reduce the noise with this knob.

HOW TO DIAL ON THE A AND X BANDS

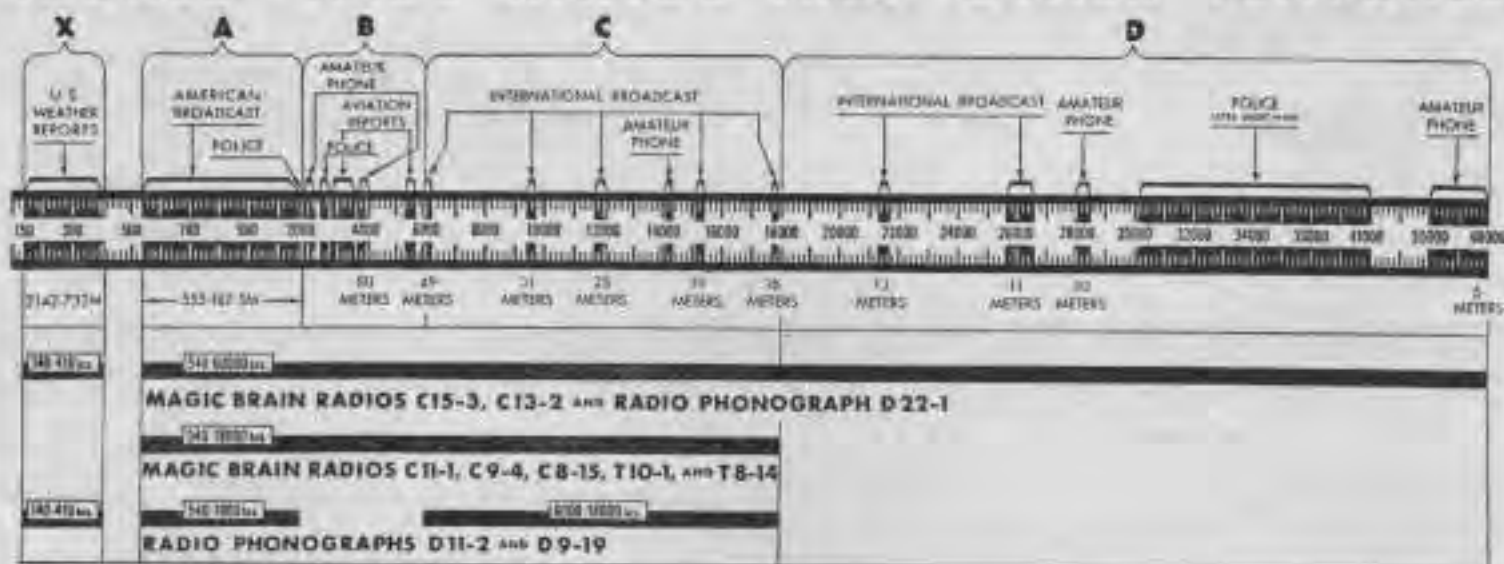
To dial standard American programs, low frequency police calls—on the A-scale—and the U. S. Aviation Weather Reports on the X-scale you follow very much the same procedure as described for short-wave tuning. Let the tubes warm up a moment, turn the Range Selector until you have the scale desired and turn the volume up slightly. When you get the station you want, adjust volume and tone control to your taste. On Magic Eye instruments—watch the "eye" as you do when dialing a foreign station.

To turn your radio off, merely turn lefthand knob counter-clockwise.

The Magic Eye as shown on the left indicates that the signal the radio is reproducing is either from a weak station or is tuned incorrectly if reception is coming from a station nearby; when the Eye appears as illustrated at the right, a strong signal is tuned correctly for maximum clarity.



WORLD-WIDE RANGE AND OTHER FEATURES



The above chart shows you the frequencies and reception-services your RCA Victor Magic Brain Radio offers. It is not to be used as a tuning guide, but merely to illustrate the comparative coverages of the various Magic Brain models for 1936. It will be seen at once that all current models offer a wide selection of the world's best entertainment.

The chart below illustrates the various features contained in each model. Here again you see RCA Victor value unexcelled. To know exactly what features account for the excellent performance of your new instrument, read the features under the number of the model you own. Each is clearly defined on the inside back cover of this book.

* Features of Magic Brain Model. * Additional feature or improvement which may vary according to model. † Actual feature present model.												
FEATURES	TABLE MODEL				PORTABLE MODEL				RADIO PHONOGRAPH			
	T	T	C	C	E	C	C	D	D	D	D	D
Short Wave Performance Features	NEW MAGIC BRAIN Wave Bands D—18,000—80,000 kc. E— 340— 410 kc. B— 1,600— 8,100 kc. C— 8,000—18,000 kc. A— 340— 1,200 kc.											
Short Wave Convenience Features	MAGIC EYE Selector Dial Colored Dial Band Indicator 2-Speed Tuning Band Spreader (Vibrator Indicator) Labeled Control Knobs											
Fidelity (Tone Quality) Features	Wide Speech Control High-Tone Control Low-Tone Control Automatic Volume Control Automatic Tone Compensation High-Gain Audio Amplifier Driver Class A-B Power System Standard Battery Speaker (8" or 10") Super-Fidelity Speaker (12") Super-Fidelity Tone Woodruff Disc (Woods)											
Radio-Phonograph Features	Automatic Operation Hi-Fi Recording Super Power Amplifier Dynamic Amplifier Manual Operation											
Cabinet Features	Height (Approximate) Width (Approximate) Depth (Approximate) Walnut Veneered Top Walnut Veneered Sides Figured Veneer Frontiers Bar Walnut Inlaid Panel Inlaid Tuning Panel Glass											



WORLD SHORT-

Station	Meters	Mcs.	Location	Days	Hours, EST	Time	Band-Spreader Reading
RW15	70.2	4.27	Khabarovsk, U. S. S. R.	Daily	3-8 a.m.	-14	
YV5RMO	51.3	5.85	Maracaibo, Venezuela	Daily	6.30-10 p.m.	+0.32	
HVJ	50.2	5.97	Vatican City	Daily	2-2.15 p.m.	+6	
RW59	50.0	6.00	Moscow, U. S. S. R.	Daily	3-5 p.m.	+7	
KEBT	50.0	6.00	Mexico City, Mexico	Daily	8-10.30 p.m.	-1	
COC	49.9	6.01	Havana, Cuba	Daily	9.30-11 a.m. & 4-8 p.m.	0	
DJC	49.8	6.02	Berlin, Germany	Daily	Noon-4.30 & 5.30-10.30 p.m.	+6	
W1XAL	49.7	6.04	Boston, Massachusetts, U. S. A.	Su-Tu-Th	5-7 p.m.	0	
HP5B	49.7	6.04	Panama City, Panama	Daily	8-10.30 p.m.	0	
GSA	49.6	6.05	London, England	Daily	10.45-12.45 p.m. & 4.30-8 p.m.	+5	
W3XAU	49.5	6.06	Philadelphia, Pennsylvania, U. S. A.	Daily	8-11 p.m.	0	
W8XAL	49.5	6.06	Cincinnati, Ohio, U. S. A.	Daily	6.30 a.m.-8 p.m. & 11 p.m.-1 a.m.	0	
W9XAA	49.4	6.08	Chicago, Illinois, U. S. A.	Daily	11.30 a.m.-1 & 2-9.30 p.m.	-1	
I2RO	49.3	6.08	Rome, Italy	M-W-Sa	1-2.30 & 6.30-8 p.m.	+6	
CP5	49.3	6.08	LaPaz, Bolivia	Daily exc. Sun.	6.45-8.15 p.m.	+1.30	
VE9GW	49.2	6.09	Toronto, Ontario, Canada	Daily	3-11 p.m.	0	
W9XF	49.2	6.10	Chicago, Illinois, U. S. A.	Daily exc. M-W-Sa	3.30 p.m.-1 a.m.	-1	
W3XAL	49.2	6.10	New York, New York, U. S. A.	M-W-Sa	5-6 p.m.	0	
GSL	49.1	6.11	London, England	Daily	8-10 p.m.	+5	
YV2RC	49.1	6.11	Caracas, Venezuela	Daily	10.30-1 p.m. & 5.15-10 p.m.	+0.32	
W2XE	49.0	6.12	New York, New York, U. S. A.	Daily	6-11 p.m.	0	
YDA	49.0	6.12	Bandoeng, Java	F.-Sa.-Su.	6-9 a.m.	+12	
W8XK	48.9	6.14	Pittsburgh, Pennsylvania, U. S. A.	Daily	4.30 p.m.-12	0	
CSL	48.8	6.15	Lisbon, Portugal	Daily	1-6 p.m.	+5	
VE9CL	48.8	6.15	Winnipeg, Canada	Daily	5.30-11 p.m.	+0.32	
YV3RC	48.8	6.15	Caracas, Venezuela	Daily	10.30-1.30 p.m. & 4.30-9.30 p.m.	0	
HJ1ABB	46.5	6.45	Barranquilla, Colombia	Daily	12-1, 5-7 & 8-9.30 p.m.	-0.14	
YV6RV	46.1	6.52	Valencia, Venezuela	Daily	5.30-9.30 p.m.	0	
PRADO	45.3	6.63	Riobamba, Ecuador	Th.	9-11 p.m.	0	
HC2RL	45.0	6.67	Guayaquil, Ecuador	Su.	5.45-8 p.m.	-0.14	
HBP	38.5	7.80	Geneva, Switzerland	Sa.	5.30-6.15 p.m.	+6	
COH	31.8	9.43	Havana, Cuba	Daily	9-11.30 a.m. 4.30-6 & 8-9 p.m.	0	
PRF5	31.6	9.50	Rio de Janeiro, Brazil	Daily exc. Su.	5.30-6.30 p.m.	+2	
GSB	31.5	9.51	London, England	Daily	3-5 a.m., 9.30-12 & 1-6.45 p.m.		
VK3ME	31.5	9.51	Melbourne, Australia	W & Sa.	5-7 a.m.	+15	
W2XAF	31.5	9.53	Schenectady, New York, U. S. A.	Daily	6.30-11 p.m.	0	
DJN	31.4	9.54	Berlin, Germany	Daily	3.45 a.m.-12 & 5.30-10.30 p.m.	+6	
DJA	31.4	9.56	Berlin, Germany	Daily	8-11.30 a.m. & 5-9.15 p.m.	+6	
VUB	31.4	9.56	Bombay, India	Daily	6-8 a.m.	+10.30	
W1XAZ	31.4	9.57	Springfield, Massachusetts, U. S. A.	Daily	7 a.m.-1 a.m.	0	
VK3LR	31.3	9.58	Lyndhurst, Australia	Ex. Su.	3.15-7.30 a.m.	+15	
GSC	31.3	9.58	London, England	Daily	6-8 p.m.	+5	
VK2ME	31.3	9.59	Sydney, Australia	Su.	1-2, 3-8.30 & 10.30-11.30 a.m.	+15	
W3XAU	31.3	9.59	Philadelphia, Pennsylvania, U. S. A.	Daily	12-8 p.m.	0	
HBL	31.3	9.59	Geneva, Switzerland	Sa.	5.30-6.30 p.m.	+6	
CT1AA	31.2	9.60	Lisbon, Portugal	Tu.-F.	4.30-7 p.m.	+5	
I2RO	31.1	9.63	Rome, Italy	Daily	11.30 a.m.-1 p.m. & 2.30-5.30 p.m.	+6	

WAVE STATIONS



Station	Meters	Mcs.	Location	Days	Hours, EST	Time	Band-Spreader Reading
EAQ	30.4	9.86	Madrid, Spain	Daily	5.30-7 p.m.	+5	
ORK	29.0	10.33	Brussels, Belgium	Daily	2.45-4.15 p.m.	+5	
JVM	27.9	10.74	Tokyo, Japan	Daily	4.30-6 a.m.	+14	
CJRX	25.6	11.72	Winnipeg, Canada	Daily	5.30-11 p.m.	-1	
FYA	25.6	11.72	Paris, France	Daily	3-6 & 7-10 p.m. & 11 p.m.-1 a.m.	+4.51	
PHI	25.5	11.73	Huizen, Holland	Daily exc. Tu & Th.	8.30-11 a.m.	+5.20	
GSD	25.5	11.75	London, England	Daily	3-5 a.m. 12-12.45 & 1-4.30 p.m.	+5	
DJD	25.5	11.76	Berlin, Germany	Daily	12-4.45 p.m.	+6	
I2RO	25.4	11.81	Rome, Italy	Daily	6-9 a.m.	+6	
W2XE	25.4	11.83	New York, New York, U. S. A.	Daily	2-4 p.m.	0	
GSE	25.3	11.86	London, England	Daily	7.30-10.45 a.m.	+5	
W8XK	25.3	11.87	Pittsburgh, Pennsylvania, U. S. A.	Daily	4.30-10 p.m.	0	
FYA	25.2	11.88	Paris, France	Daily	11.15 a.m.-2.30 & 3-6 p.m.	+4.51	
RW59	25.0	12.00	Moscow, U. S. S. R.	Su.	6-7 & 10-11 a.m.	+7	
CNR	23.4	12.83	Rabat, Morocco, Africa	Su.	7.30-9 a.m.	+5	
HVJ	19.8	15.12	Vatican City	Daily	10.30-10.45 a.m.	+6	
GSE	19.8	15.14	London, England	Daily	6-9 a.m.	+5	
DJB	19.7	15.20	Berlin, Germany	Daily	12.30-2 & 3.45-7 a.m.	+6	
W8XK	19.7	15.21	Pittsburgh, Pennsylvania, U. S. A.	Daily	9 a.m.-4.15 p.m.	0	
PCJ	19.7	15.22	Huizen, Holland	Daily exc. Tu. & Th.	8.30-11 a.m.	+5.20	
FYA	19.7	15.24	Paris, France	Daily	7-11 a.m.	+4.51	
GSI	19.6	15.26	London, England	Daily	4.30-5.30 a.m.	+5	
W2XE	19.6	15.27	New York, New York, U. S. A.	Daily	11 a.m.-1 p.m.	0	
DJQ	19.6	15.28	Berlin, Germany	Daily	12.30-2 a.m.	+6	
W2XAD	19.6	15.33	Schenectady, New York, U. S. A.	Daily exc. Tu, Th. & Sa.	2.30-3.30 p.m.	0	
HAS3	19.5	15.37	Budapest, Hungary	Su.	8-9 a.m.	+6	
DJE	16.9	17.76	Berlin, Germany	Daily	7-9 a.m.	+6	
PHI	16.9	17.77	Huizen, Holland	Daily exc. Tu. & Th.	8-9 a.m.	+5.20	
W3XAL	16.9	17.78	New York, New York, U. S. A.	Daily exc. Su.	9-10 a.m.	0	
GSG	16.9	17.79	London, England	Daily	7-8.45 a.m.	+5	
GSH	14.0	21.47	London, England	Daily	6-8.30 a.m.	+5	
W8XK	13.9	21.54	Pittsburgh, Pennsylvania, U. S. A.	Daily	7 a.m.-2 p.m.	0	

See Footnotes on Page 10



AMERICAN STATIONS HAVING SHORT-WAVE "COMPANION" STATIONS

This list of American short-wave stations is especially useful when electrical storms mar standard reception. Lightning has only a slight effect on short-wave reception, and you can often hear a desired domestic program over the "companion" of the standard station carrying it.

STANDARD U. S. STATIONS			THEIR SHORT-WAVE COMPANIONS			
Station	Frequency (kc.)	Location	Station	Wave-Length (meters)	Frequency (kc.)	Location
KDKA	980	Pittsburgh, Pa.	W8XK	19.71 25.25 48.83	15210 11870 6140	Saxonburg, Pa.
WABC	860	New York, N. Y.	W2XE	25.32 48.99	11840 6120	Wayne, N. J.
WEEI	590	Boston, Mass.	W1XAL	49.67	6040	Boston, Mass.
CRCT	6095	Toronto, Canada	VE9GW	49.22	6095	Bowmanville, Ontario, Can.
WBZ	990	Boston, Mass.	W1XAZ	31.33	9570	Millis, Mass.
WBZA	990	Springfield, Mass.				
WCAU	1170	Philadelphia, Pa.	W3XAU	31.26 49.48	9590 6060	Newtown Square, Pa.
WCFL	970	Chicago, Ill.	W9XAA	49.31	6080	Chicago, Ill.
WENR	870	Chicago, Ill.	W9XF	49.15	6100	Downer's Grove, Ill.
WGY	790	Schenectady, N. Y.	W2XAD W2XAF	19.55 31.46	15340 9530	Schenectady, N. Y.
WIOD	1300	Miami, Fla.	W4XB	49.67	6036	Miami Beach, Fla.
WJZ	760	New York, N. Y.	W3XAL	16.87 49.15	17780 6100	Boundbrook, N. J.
WLW	700	Cincinnati, Ohio	W8XAL	49.48	6060	Mason, Ohio

NOTE A—The time in each country listed is the number of hours later (+) or earlier (—), than E. S. T. For instance, "+14" occurs opposite "Khabarovsk, U. S. S. R." There it is 14 hours later than in the Eastern Standard Time Zone. Hence if it is 7 P. M. by Eastern Standard Time, it is 9 A. M. the next day in Khabarovsk. Add 1 hour more to determine each "+" time from Central Standard Time; 2 hours from Mountain Standard Time; and 3 hours from Pacific Standard Time. Where the time differential is preceded by "—", subtract 1 hour less for C. S. T., 2 less for M. S. T., 3 less for P. S. T. . . . Noting down Band-Spreader readings will enable you to re-locate a foreign station easily . . . Keep this Log up-to-date by checking it with current periodicals or newspapers featuring short-wave logs.

ALPHABETICAL LISTING OF STANDARD

U. S. BROADCASTING STATIONS

(STATIONS OF 1000 WATTS OR MORE)



Station	Location	Kilo-cycles	Station	Location	Kilo-cycles	Station	Location	Kilo-cycles
KDKA	Pittsburgh, Pa.	980	KTSA	San Antonio, Texas	550	WHN	New York City, N. Y.	1010
KDYL	Salt Lake City, Utah	1290	KTW	Seattle, Wash.	1220	WHO	Des Moines, Iowa	1000
KECA	Los Angeles, Calif.	1430	KVI	Tacoma, Wash.	570	WIBA	Madison, Wis.	1280
KEX	Portland, Oregon	1180	KVOO	Tulsa, Okla.	1140	WIBW	Topeka, Kan.	580
KFAB	Lincoln, Nebr.	770	KVOR	Colorado Springs, Col.	1270	WINS	New York City, N. Y.	1180
KFAC	Los Angeles, Calif.	1300	KWK	St. Louis, Mo.	1350	WIOD	Miami, Fla.	1300
KFBB	Great Falls, Mont.	610	KWKH	Shreveport, La.	1100	WIP	Philadelphia, Pa.	610
KFBI	Abilene, Kans.	1050	KWSC	Pullman, Wash.	1220	WIS	Columbia, S. C.	560
KFDY	Brookings, S. D.	780	KWTO	Springfield, Mo.	560	WJAG	Norfolk, Nebr.	1060
KFBQ	St. Joseph, Mo.	680	KYA	San Francisco, Calif.	1230	WJAS	Pittsburgh, Pa.	1290
KFH	Wichita, Kans.	1300	KYW	Philadelphia, Pa.	1020	WJAX	Jacksonville, Fla.	900
KFI	Los Angeles, Calif.	640	WABC	New York City, N. Y.	860	WJDX	Jackson, Miss.	1270
KFKU	Lawrence, Kans.	1220	WAPI	Birmingham, Ala.	1140	WJJD	Chicago, Ill.	1130
KFOX	Long Beach, Calif.	1250	WAVE	Louisville, Ky.	940	WJR	Detroit, Mich.	750
KFPY	Spokane, Wash.	1340	WBAL	Baltimore, Md.	1060-760	WJSV	Alexandria, Va.	1460
KFRC	San Francisco, Calif.	610	WBAP	Fort Worth, Texas	800	WJZ	New York City, N. Y.	760
KFSD	San Diego, Calif.	600	WBBM	Chicago, Ill.	770	WEAR	E. Lansing, Mich.	1040
KFWB	Hollywood, Calif.	950	WBBR	Brooklyn, N. Y.	1300	WKBH	La Crosse, Wis.	1380
KFYR	Bismarck, N. D.	550	WBEN	Buffalo, N. Y.	900	WKBW	Buffalo, N. Y.	1480
KGA	Spokane, Wash.	900	WBOQ	New York City, N. Y.	860	WKRC	Cincinnati, Ohio	550
KGB	San Diego, Calif.	1330	WBRC	Birmingham, Ala.	930	WKY	Oklahoma City, Okla.	900
KGDM	Stockton, Calif.	1100	WBT	Charlotte, N. C.	1080	WKZO	Kalamazoo, Mich.	590
KGER	Long Beach, Calif.	1360	WBZ	Boston, Mass.	900	WLAC	Nashville, Tenn.	1470
KGGF	Coffeyville, Kans.	1010	WBZA	Boston, Mass.	990	WLB	Minneapolis, Minn.	1250
KGHL	Billings, Mont.	780	WCAE	Pittsburgh, Pa.	1220	WLS	Chicago, Ill.	870
KGIR	Butte, Mont.	1360	WCAL	Northfield, Minn.	1250	WLW	Cincinnati, Ohio	700
KGO	San Francisco, Calif.	790	WCAU	Philadelphia, Pa.	1170	WLWL	New York City, N. Y.	1100
KGRS	Amarillo, Texas	1410	WCCO	Minneapolis, Minn.	810	WMAQ	Chicago, Ill.	670
KGW	Portland, Oregon	620	WCFL	Chicago, Ill.	970	WMAZ	Macon, Ga.	1180
KHJ	Los Angeles, Calif.	900	WCKY	Covington, Ky.	1490	WMBF	Miami, Fla.	1300
KHQ	Spokane, Wash.	590	WCSH	Portland, Maine	940	WMBI	Chicago, Ill.	1080
KIDO	Boise, Idaho	1350	WDAE	Tampa, Fla.	1220	WMC	Memphis, Tenn.	780
KJR	Seattle, Wash.	970	WDAF	Kansas City, Mo.	610	WMT	Cedar Rapids, Iowa	600
KLRA	Little Rock, Ark.	1390	WDAG	Amarillo, Texas	1410	WNAO	Boston, Mass.	1230
KLX	Oakland, Calif.	880	WDAY	Fargo, N. D.	940	WNBX	Springfield, Vt.	1260
KLZ	Denver, Col.	560	WDBJ	Ronoke, Va.	930	WNEW	Newark, N. J.	1250
KMBC	Kansas City, Mo.	950	WDGY	Minneapolis, Minn.	1180	WNOX	Knoxville, Tenn.	560
KMOK	St. Louis, Mo.	1090	WDOD	Chattanooga, Tenn.	1280	WNYC	New York City, N. Y.	810
KMTR	Los Angeles, Calif.	570	WDRG	Hartford, Conn.	1330	WOAI	San Antonio, Texas	1190
KNX	Los Angeles, Calif.	1050	WDSU	New Orleans, La.	1250	WOI	Ames, Iowa	640
KOA	Denver, Col.	830	WEAF	New York City, N. Y.	660	WOR	Newark, N. J.	710
KOAC	Corvallis, Ore.	550	WEBC	Superior, Wis.	1290	WORK	York, Pa.	1320
KOB	Albuquerque, N. M.	1180	WEEL	Boston, Mass.	590	WOW	New York City, N. Y.	1130
KOIL	Council Bluffs, Iowa	1260	WEED	Reading, Pa.	830	WOWO	Omaha, Nebr.	590
KOIN	Portland, Oregon	940	WENR	Chicago, Ill.	870	WPG	Fort Wayne, Ind.	1160
KOL	Seattle, Wash.	1270	WESG	Elmira, N. Y.	1040-1090	WPG	Atlantic City, N. J.	1100
KOMA	Oklahoma City, Okla.	1480	WEVD	New York City, N. Y.	1300	WPTF	Raleigh, N. C.	680
KOMO	Seattle, Wash.	920	WEW	St. Louis, Mo.	760	WQAM	Miami, Fla.	560
KPO	San Francisco, Calif.	680	WFAA	Dallas, Texas	800	WQBC	Vicksburg, Miss.	1360
KPRC	Houston, Texas	920	WFAB	New York City, N. Y.	1300	WREC	Memphis, Tenn.	600
KQW	San Jose, Calif.	1010	WFBC	Greenville, S. C.	1300	WRVA	Richmond, Va.	1110
KRLD	Dallas, Texas	1040	WFBL	Syracuse, N. Y.	1360	WSAI	Cincinnati, Ohio	1330
KROW	Oakland, Calif.	930	WFBM	Indianapolis, Ind.	1230	WSB	Atlanta, Ga.	740
KSCJ	Sioux City, Iowa	1330	WFIL	Philadelphia, Pa.	560	WSM	Nashville, Tenn.	650
KSD	St. Louis, Mo.	550	WFLA	Clearwater, Fla.	620	WSPA	Spartanburg, S. C.	920
KSL	Salt Lake City, Utah	1130	WGN	Chicago, Ill.	720	WSPD	Toledo, Ohio	1340
KSO	Des Moines, Iowa	1320	WGR	Buffalo, N. Y.	550	WSUN	Clearwater, Fla.	620
KSOO	Sioux Falls, S. D.	1110	WGY	Schenectady, N. Y.	790	WTAM	Cleveland, Ohio	1070
KSTP	St. Paul, Minn.	1460	WHA	Madison, Wis.	940	WTIC	Hartford, Conn.	1040
KTAB	San Francisco, Calif.	560	WHAM	Rochester, N. Y.	1150	WTMJ	Milwaukee, Wis.	620
KTAF	Phoenix, Ariz.	620	WHAS	Louisville, Ky.	820	WTOG	Savannah, Ga.	1260
KTAT	Fort Worth, Texas	1340	WHB	Kansas City, Mo.	860	WWJ	Detroit, Mich.	920
KTBS	Shreveport, La.	1450	WHBI	Newark, N. J.	1250	WWL	New Orleans, La.	850
KTPI	Twin Falls, Idaho	1240	WHDH	Boston, Mass.	830	WWNC	Asheville, N. C.	570
KTSH	Hot Springs, Ark.	1040-1060	WHIO	Dayton, Ohio	1260	WWVA	Wheeling, W. Va.	1160
KTRH	Houston, Texas	1290	WHK	Cleveland, Ohio	1390	WXYZ	Detroit, Mich.	1240



KILOCYCLE TABLE OF U. S. BROADCASTING STATIONS

(STATIONS OF 1000 WATTS OR MORE)

Kilo-cycles	Station	Kilo-cycles	Station	Kilo-cycles	Station	Kilo-cycles	Station	Kilo-cycles	Station	Kilo-cycles	Station	Kilo-cycles	Station
550	KFYR KOAC KSD KTSA WGR WKRC	640	KFI WOI	820	WHAS	970	KJR WCFL	1110	KSOO WRVA	1250	KFOX WCAL WDSU WHBI WLB WNEW WTCN	1340	KFPY WSPD
		650	WSM	830	KOA WEEU WHDH	980	KDKA	1130	KSL WJJD WOV			1350	KIDO KWK
		660	WEAF			990	WBZ WBZA					1360	KGER KGR WFBL WQBC
560	KLZ KTAB KWTO WFIL WIS WNOX WQAM	670	WMAQ	850	WWL	1000	WHO	1140	KVOO WAPI	1260	KOIL WHIO WNBX WTOC		
		680	KFEQ KPO WPTF	860	WABC WBOQ WHB	1010	KGGF KQW WHN	1150	WHAM			1370	KOL KVOR WJDX
		700	WLW	870	WENR WLS	1020	KYW	1160	WOWO WWVA			1380	WKBH
		710	WOR			1040	KRLD KTHS WESG WKAR WTIC	1170	WCAU	1280	WDOD WIBA	1410	KGRS WDAG
570	KMTR KVI WWNC	720	WGN	880	KLX	1050	KFBI KNX	1180	KEX KOB WDGY WINS WMAZ	1290	KDYL KTRH WEBC WJAS	1430	KECA
		740	WSB	900	KGA KHJ WBEN WJAX WKY	1060	KTHS WBAL WJAG	1190	WOAI	1300	KFAC KFH WBBR WEVD WFAB WFBC WIOD WMBF	1450	KTBS
580	WIBW	750	WJR			1070	WTAM	1220	KFKU KTW KWSC WCAE WDAE			1460	KSTP WJSV
		760	WBAL WRW WJZ	920	KOMO KPRC WSPA WWJ	1080	WBT WMBI	1230	KYA WFBM WNAC	1320	KSO WORK	1470	WLAC
590	KHQ WEEI WKZO WOW	770	KFAB WBBM			1090	KMOX WESG	1240	KTAT KTPI WXYZ	1330	KGB KSCJ WDRG WSAI	1480	KOMA WKBW
		780	KFDY KGHL WMC	930	KROW WBRC WDBJ	1100	KGDM KWKH WLWL WPG					1490	WCKY
600	KFSD WMT WREC	790	KGO WGY	940	KOIN WAVE WCSH WDAY WHA							1500	WIXBS W9XBY
		800	WBAP WFAA	950	KFWB KMBC							1550	W2XR W6XA1
610	KFBB KFRC WDAF WIP	810	WCCO WNYC										
620	KGW KTAR WFLA WSUN WTMJ												

RADIO TERMS AND SPECIAL RCA VICTOR FEATURES DEFINED

Antenna, RCA World-Wide: A special double-doublet type of aerial which reduces man-made static, thus bringing in short-wave programs sharp and clear. Literally four aerials in one.

"Armored Watchman": A Magic Brain feature which amplifies wanted signals to the exclusion of unwanted sounds.

Audio Frequency: The number of vibrations per second causing any sound; expressed in cycles. As audio frequency increases, pitch is higher.

Automatic Record Changer: A device automatically changing as many as 8 phonograph records in succession, for convenience in listening to a sustained Victor Record Concert.

Automatic Sensitivity Booster: A Magic Brain device which increases the sensitivity 5 times for short-wave reception.

Automatic Signal Stabilizer: A Magic Brain device which prevents the de-tuning of a short-wave program due to greatly increased drain on the power line caused by turning on an X-ray machine, sun lamp, etc. Counteracts the effects of external power units on the same line.

Automatic Tone Compensation: An ingenious arrangement which automatically compensates for variations in the tone response of the human ear and produces maximum fidelity at any volume. Thus at reduced volume control settings high and low notes are produced at greater volume than the middle register, so that they seem to come in at the same volume.

Automatic Volume Control: Ingenious arrangement permitting reception of all programs at practically the same volume, as you tune around the dial; and reducing fading as you listen in.

Ball Bearing Transmission: Provides easy tuning with the greatest accuracy and refinement in adjustments of dial pointers.

Band: 1. A succession of frequencies within the span of which a certain type of reception occurs, as the 49-meter band, a police band, etc.

2. Also used sometimes when tuning scale or dial scale is meant; e.g., a "5 band" RCA Victor for 1936 offers the X, A, B, C and D tuning ranges.

Band Spreader: An ingenious RCA Victor device which "spreads out" the band on the dial scale by means of a secondary pointer and larger scale, making precise tuning possible.

Class A-B Power System: A very economical power amplifier of low distortion.

Colorband Dial: A dial representing each tuning range in a different color, with colored indicators to show which tuning scale the set is adjusted for at any time.

Cradle-Mounted Tuning Condenser: Special mounting of the tuning condenser which prevents undesired vibrations from affecting the quality of reproduction.

Cycle: The completion of a single wave of a series. The length of the wave is measured from crest to crest—in meters; the frequency in cycles per second. (See *kilocycle* and *megacycle*.)

Fidelity: Ability of a receiver to reproduce without distortion all sounds—especially high and low notes—in a radio program.

Frequency: Number of cycles or waves transmitted per second. (See Page 2.)

Ground Wave: Radio wave which travels through and over the ground. (See Page 2.)

Hexode Pentagrid Converter: Magic Brain feature providing 5 times normal sensitivity when you tune for distant and weak short-wave stations.

High Gain Audio Amplifier: An audio circuit and tube which amplify the weak short-wave signals to full room volume.

High Tone Control: A control knob which permits you to reduce the intensity of treble notes (See *low tone control*).

Home Recording: Equipment of Model D22-1 by which you may record your own speech or musical performance.

Individual Coil System: An ingenious arrangement of coils in the Magic Brain. Each coil performs only one function instead of two or more; hence greatest quality and efficiency result, without compromise.

Kennelly-Heaviside Layer: Ionized atmospheric stratum about 100 miles above the earth; reflects radio waves earthward so they can be received. (See Page 2.)

Kilocycle: 1000 cycles (See *Cycle* and *Frequency*.)

Low Tone Control: The control knob which permits you to reduce the intensity of low notes. **Note:** Both high and low tone controls permit you to adjust the balance between bass and treble to your particular taste.

Magic Brain: An RCA Victor-developed device consisting of a special radio frequency stage, an ingenious multi-coil system, scientifically designed triple action switch, and latest type dial producing more stations, better tone and easier operation.

Magic Eye: Small green light similar to an eye in appearance and with a dark sector that narrows as you tune in a station; assures precise tuning, hence best reception.

Megacycle: 1000 kilocycles (See *Cycle*.)

Metal Tubes: The greatest tube advance in recent years, providing self-shielding, silent operation, uniformity, and better reception, especially of short-wave programs.

Meter: Metric unit of measure—39.37 inches. Used to express wave-length (distance from crest to crest). (See Page 2.)

Music-Speech Control: A control knob which permits your radio to give better reproduction of music when the switch is set in "music" position and better reproduction of speech when "speech" position is indicated.

Output: The volume or amplitude of sound reproduction, measured in watts.

Radio Recording: Equipment on Model D22-1 permitting you to make your own records of radio programs.

Radio Wave: Electrical emanations carrying radio signals. Analogous to ocean waves. (See Page 2.)

Selectivity: Ability of a receiver to separate a wanted station from an unwanted station. A receiver's capacity for differentiation of frequencies and elimination of interference when tuning.

Selector Dial: An RCA Victor dial having 3-5 different tuning scales, only one of which appears at a time. Types of reception and where to dial for them are plainly indicated.

Sensitivity: The ability of a radio to bring in and amplify weak and distant stations.

Short Wave: Any radio wave less than about 75 meters in length (having a frequency greater than 4 megacycles). Waves shorter than about 10 meters (30 mcs.) are called ultra-short waves.

Skip Distance: The distance between limit of ground wave and first reflected sky wave; and between two sky waves. (See Page 2.)

Sky Wave: Radio wave which ascends skyward and is deflected earthward by the Kennelly-Heaviside layer. (See Page 2.)

Super Fidelity Speaker: Improved RCA dynamic speaker for 1936 affording higher fidelity due to greater size, larger coil windings and latest refinements in design.

Super Fidelity Tone: Tone resulting from a super-fidelity loudspeaker, specially engineered to approximate the fidelity of RCA Photophone movie-sound speakers in theatres.

Super Power Amplifier: A high power auxiliary circuit which provides extraordinary volume with minimum distortion.

Tuning Range: The span of carrier-wave frequencies covered by a radio. Some radios are not designed to bring in short-wave programs; covering fewer kilocycles. Their tuning range is not so great as that of short-wave receivers.

Two-Speed Tuning: Providing fast dialing for standard, and slow dialing for short-wave programs. (See Page 4.)

Ultra Short Waves: See *short wave*

Volume: The loudness or softness of sound.

Wave Length: Distance from crest to crest of a radio wave. (See Page 2.)







MAKE USE OF YOUR OLD RADIO, TOO —

If you are among the many who have kept the "old radio" as a second set, you will profit from this word about tubes . . . No radio is better than the tubes it uses, and new RCA Tubes will improve the tone quality of your old set. Any RCA Radio Tube Dealer will gladly test your present tubes for you. If they are in good condition he will quickly tell you so. If they are worn, you will do well to replace them . . . Then you can get the full measure of entertainment a second set can give — in playroom, bedroom, sun-porch, seashore cottage or wherever you wish.

Remember, only radio tubes bearing the monogram

 **are manufactured and guaranteed by** 

RCA VICTOR

**A DIVISION OF THE RCA MANUFACTURING COMPANY, INC.
. . . One Unit of Radio Corporation of America . . . The World's Largest
Radio Organization. Other Units: National Broadcasting Co., Inc. . . .
R. C. A. Communications, Inc. . . . Radiomarine Corporation of America.**

CAMDEN, NEW JERSEY, U. S. A.