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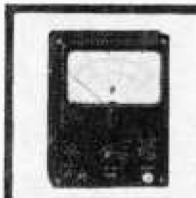

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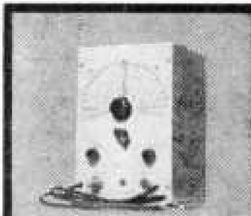

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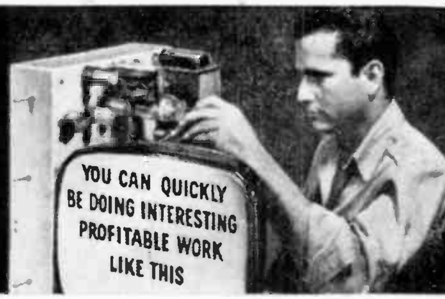

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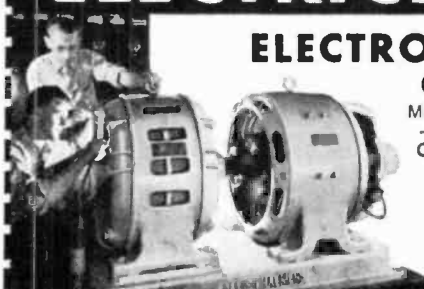

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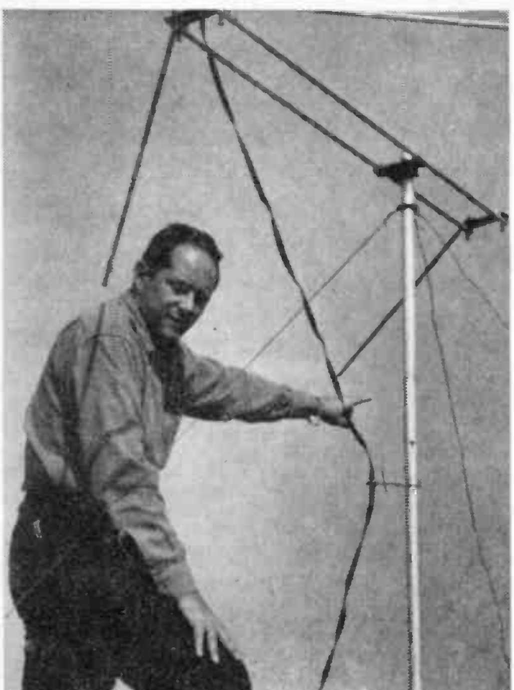

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Cover by Harold R. Stluka

RADIO-TV EXPERIMENTER, Volume 15, No. 2, is published quarterly by SCIENCE AND MECHANICS PUBLISHING CO., a subsidiary of Davis Publications, Inc. Editorial, Business and Subscription Offices: 505 Park Ave., New York 22, N.Y.; one-year subscription (four issues), $3.00 domestic, $4.00 foreign. Advertising Offices: New York: 505 Park Ave., PL 2-6200; Chicago: 520 N. Michigan Ave., 527-0330; Los Angeles: 6363 Wilshire Blvd., 653-5037. Application for second-class postage rates is pending at New York, N.Y. and at additional mailing offices.

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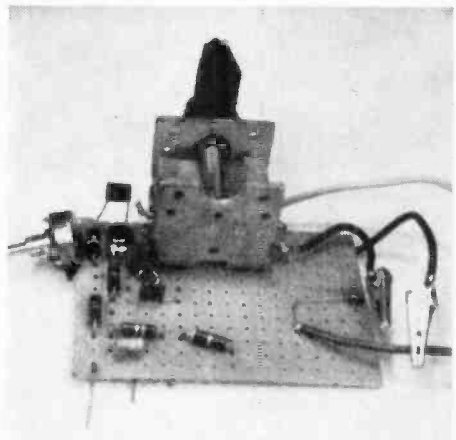

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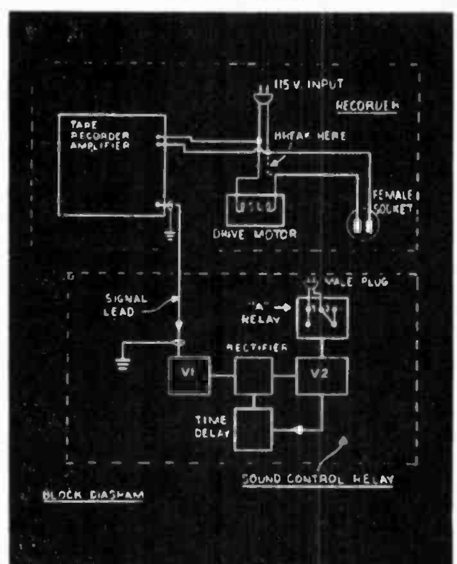

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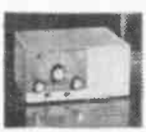

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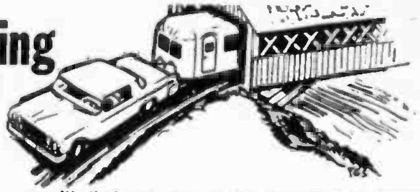

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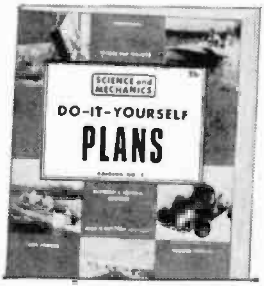

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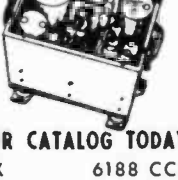

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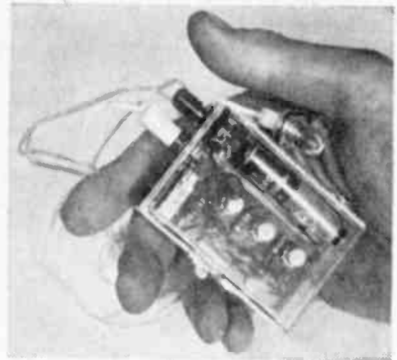

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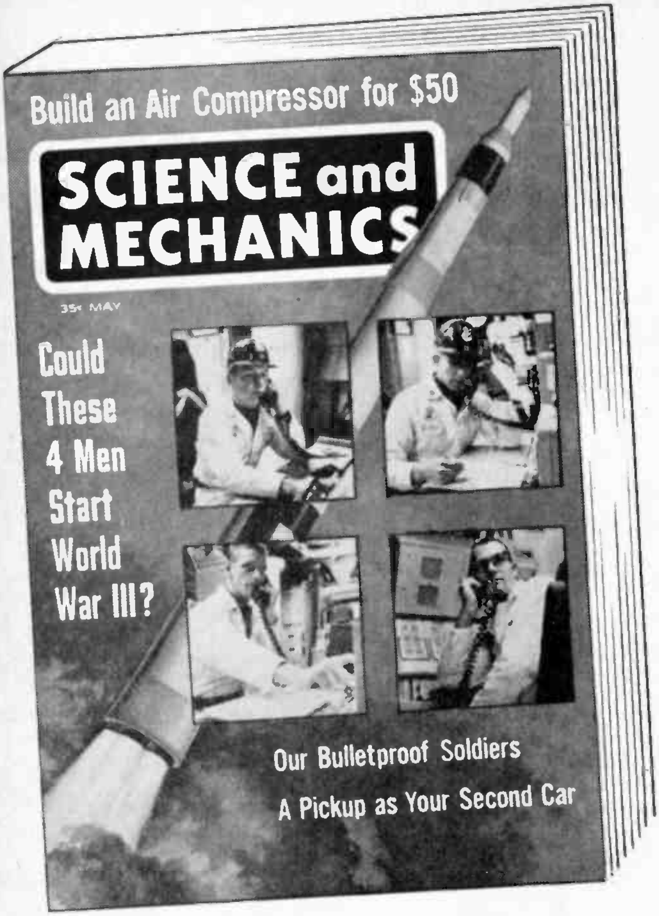

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EDITORIAL

There's Something Wrong!

AS A JUDGE at a science fair, I had the opportunity to speak to many electronically-oriented boys and girls. One incident last year stands out in my memory.

There was a young man who had prepared an elaborate display on the Esaki diode. His presentation left no doubt whatever that there wasn't a thing about tunnel diodes that this lad didn't know. He knew how they worked, what made them work, how and when they were invented, and how they could be used! By leading the discussion into more general electronic terms, we found out a disturbing fact. This boy *did not know the resistor color code!*

This brings us back to our early days of working in an electronic research laboratory, along with other technicians and a few high-powered electronics engineers. Now some of these engineers had Ph.Ds in electronics, and could E-I the very dickens out of R, but *didn't know how to solder properly!*

It's true that in an age of specialization such as ours, we can't devote too much time to the generalities. After all, the schools consider themselves fortunate to have enough time to devote different courses to the EEs than to the ChEs or CEs! At the same time, industry complains that the schools do not fully train the graduate. Many firms run courses for graduates hired.

The answer to the problem is an obvious one. If industry screams that the schools aren't doing their job, and the schools complain that they haven't sufficient time to turn out specialists, the electronically inclined youth must take the resistor by its leads and prepare himself!

How can you do this? Learn the fundamentals. Even though you may not be directly interested in communications engineering, get a ham license. Build your own equipment. This will teach you many of the shop practices, and several of the design techniques. Set up and construct the *basic* experiments in electronics so that you can see and understand them, rather than simply read about them in the text books.

If all our youngsters will come to the universities prepared with this knowledge, the schools will have to spend less time on teaching the basics. More time can be spent on the advanced details then, and everybody will benefit.

By the way . . . Books like this can assist in your training!

Byron G. Wels

IDENTIFY THAT DX

By C. M. STANBURY

TEN-FIFTY-EIGHT p. m. EST. The tinkle of a music box on 2326 *kc* received by an east coast DXer. The static was heavy and even though the ensuing transmission was in English, the identification announcements were lost. Despite this, he was able to identify this rare piece of low band DX as Radio South Africa.

How? Via it's interval signal, that music box. And by this method almost any rare catch can eventually be identified.

A classic example of the interval signal ("IS" in SWL jargon) is NBC's chimes. Whenever an American hears these, he knows that the station tuned is an affiliate of the National Broadcasting Co. However, with this major exception, IS are rare in United States and Canadian broadcasting. To the south, about one out of every two Latin American broadcast band stations have interval signals, and the practice is even more common in international broadcasting.

On the other hand, things are not quite as simple as they appear. Some stations use their IS only prior to sign-on so that listeners can tune them in accurately. Under these circumstances, the signal will be repeated for several minutes. A few of the larger broadcasting organizations have two IS—one for tuning and the other for use between programs. Still other stations may use two at all times, for example, chimes plus a piece of music.

Armed with this knowledge you are ready to tackle the unknown in DX. Of course, to use this method, the interval signal must be heard. This involves careful and continuous monitoring of the target stations. (Lazy readers are excused—DX isn't for you.) Once the IS is heard, write down a description immediately so that no detail is lost. Be sure you put down every detail possible.

Some interval signals are considerably more difficult to put on paper than others. A gong followed by four ascending chimes is a cinch but you'll run into IS that are nothing more than pieces of music which you just have to remember. This isn't nearly as hard as it sounds, especially if you have any kind of musical ear. Further, a partial description can sometimes still be written. The IS of the Swiss Broadcasting Corp. is a lullaby suggesting the rocking of the sea (even though the nation is completely land locked!).

All of this would be simplified via a tape recorder but we are assuming the reader is

Figure 2 SAMPLE INTERVAL SIGNAL LOG

COUNTRY	STATION	INTERVAL SIGNAL	NOTES	KC/S
COLOMBIA	La Voz de Bogota	Bar of lively Latin dance music	Immediately preceding ID	5960
DOMINICAN REP.	R. Santo Domingo	Musical selection played slowly upon a harp	Announcements superimposed	5970
EGYPT	R. Free Africa	Slow resounding drum beats forming an intricate pattern.	S/on & S/off	17895
FR. GUIANA	R. Cayenne	Guitar	S/on	6175
GUATEMALA	R. Nacional de Quetzaltenango	Two long drawn out chimes		11700
NETHERLANDS	R. Nederland	Deep voiced bells followed by beep type time signal	Prior to S/on	11730
SOUTH AFRICA	R. South Africa (also commercial service Springbok R.)	Music box	Prior to S/on and briefly during some station breaks	15080
SWEDEN	R. Sweden	7 notes on a music box followed by clock striking	Prior to S/on	11705
SWITZERLAND	Swiss Shortwave Service	Lullaby suggesting rocking of sea	Prior to S/off	6165
(many)	Voice of America	"Columbia the Gem of the Ocean"		6155

NOTES: R.—Radio. Most of these stations use many frequencies. See WHITE'S RADIO LOG for further listings.

an average SWL who has to make do with the equipment available. Finally, while logging a mystery station, be sure to put down all the details necessary for sending a report after you identify it—signal strength, interference (either from static or other stations) and program details to authenticate your reception.

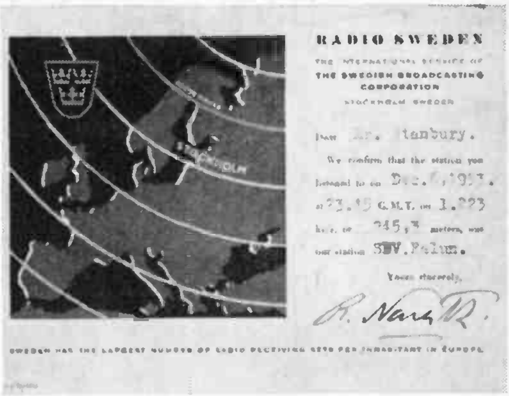
Begins the Hunt: First check the same frequency on the following day at the same time. Your target may show up again and you'll know whether it is the same station by the IS. If it doesn't show for the next couple days, checks should still be made once weekly *on the same day of the week* that you originally encountered it.

Check the SW broadcast bands immediately above and below the original frequency range. If your station was near the low end of the SW spectrum, the band above is most important. If your mystery station was on 90 meters, the band to check would be 60 meters (see WHITE'S RADIO LOG for a list of the bands). If, while tuning 60, a similar program is heard, stop and listen for the interval signal (and of course the identification too). At short wave's upper reaches the process is reversed, the DXer works down instead of up.

Finally, one may stumble upon the mystery signal again while tuning for something entirely different. Such a surprise really puts an extra thrill into DXing. How often does it happen? Well that depends directly upon how much and how carefully one listens.

For the beginner, this whole process will probably seem like a tremendous task. But after DXing a while everything becomes considerably easier. Not only do you develop your ear but you build up your store of interval signals. Those of the larger broadcast organizations, such as Radio Moscow and the Voice of America (which has relays in such far away countries as Greece and Ceylon), you will recognize at once.

However, to take full advantage of your DXing hours, a complete reference log of all interval signals must be kept. A basic form, such a log is shown in Fig. 2. It should contain station name, country, complete description of IS, all other pertinent notes—was it used at sign-on, sign-off or in mid-transmis-

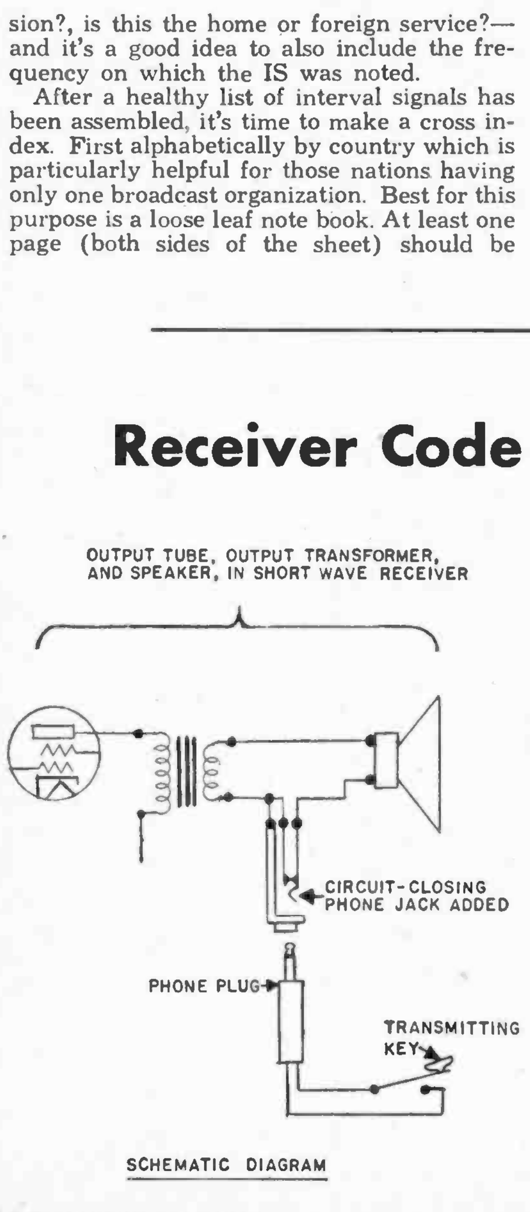


sion?, is this the home or foreign service?—and it's a good idea to also include the frequency on which the IS was noted.

After a healthy list of interval signals has been assembled, it's time to make a cross index. First alphabetically by country which is particularly helpful for those nations having only one broadcast organization. Best for this purpose is a loose leaf note book. At least one page (both sides of the sheet) should be allocated for each letter of the alphabet. Later, individual pages can be replaced with rearranged sheets or additional pages inserted into the lineup.

Another method, much more complicated but equally useful, is an alphabetical arrangement by IS type. For example: chimes, drums, gongs, musical notes, musical selections, etc. Endless varieties are possible here, depending upon the time each SWL has.

Receiver Code Practice Outfit

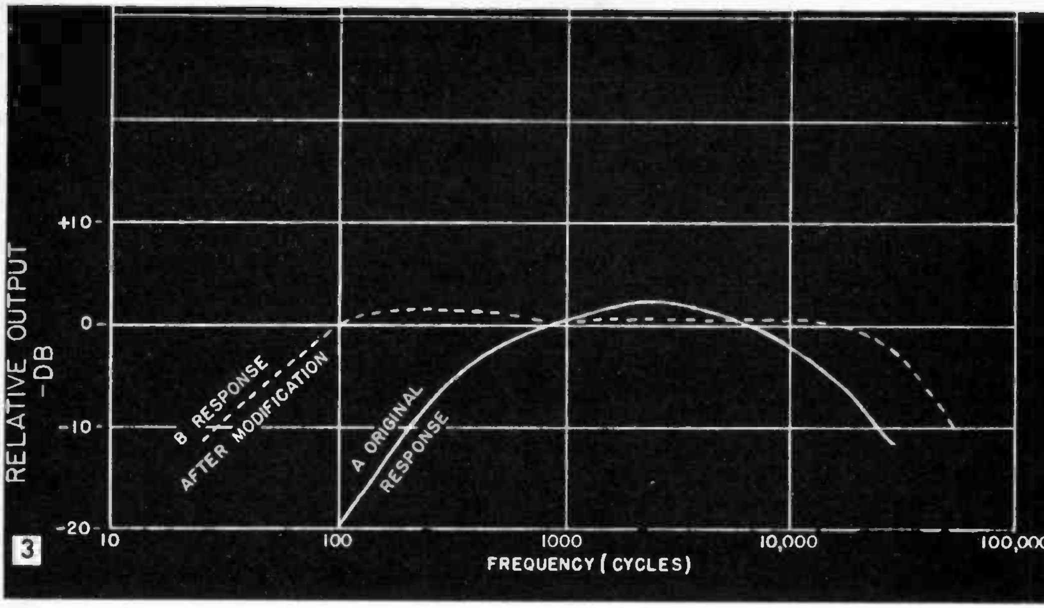


SCHEMATIC DIAGRAM

EVERYBODY knows that you can practice receiving the code by listening to code transmissions on a short wave receiver. Did you know that you can practice sending code on the same receiver?

Tuning across the short-wave bands you will hear many steady noises and tones such as radiophoto transmissions, unbroken CW tones, unmodulated carriers, heterodynes and hum. To practice sending code, simply tune in one of these steady tones and break it up into dots and dashes by means of a transmitting key plugged into the voice coil circuit of the speaker, as shown in the diagram on this page. Mount a standard circuit-closing phone jack on the rear of the radio, and wire it as shown.

Some of the tones are quite pleasing to listen to, and you can have group practice by tuning the volume up loud. This trick is not recommended with ac-dc radios having one side of the speaker voice coil connected to the chassis, unless you isolate the speaker from the chassis. The installed jack can also be used for plugging in a series connected extension speaker for listening to short-wave in another room.—ART TRAUFFER.



Tricks for Improving Amplifier Frequency Response

You can improve an audio amplifier inexpensively. Special problems that might arise and a step-by-step treatment for a transistor audio amplifier are shown

By FORREST H. FRANTZ, SR.

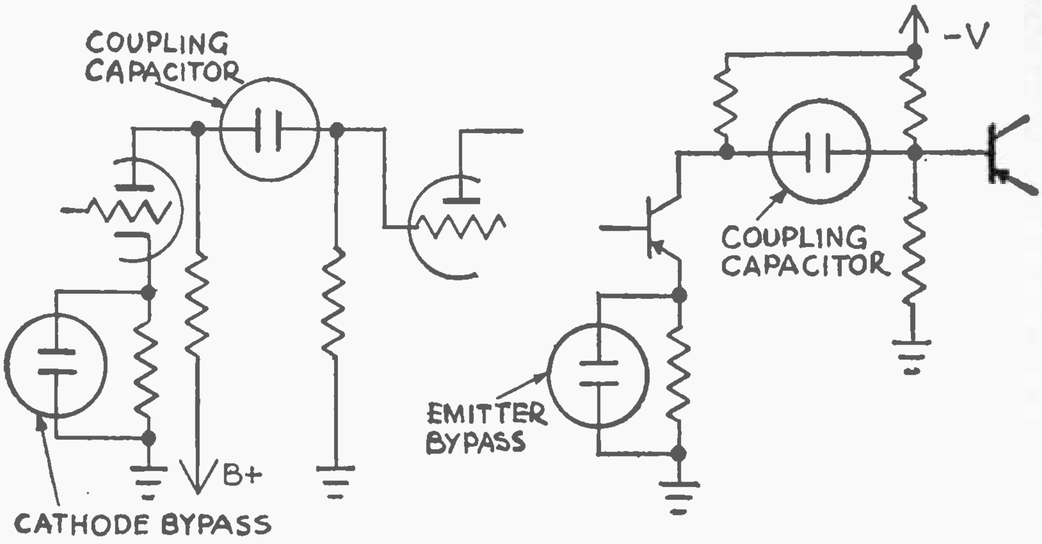
THE frequency response of an audio amplifier *can* be improved. Most inexpensive amplifiers are nearly flat at mid-frequency. The problem boils down to extending the range of response at the low and high frequency ends of the audio spectrum. Figure 3 shows the before and after frequency response of a transistor audio amplifier which received the treatment described here. The improvement is considerable.

Extending low response: Low frequency response may be improved by increasing the size of interstage coupling capacitors and by increasing the size of cathode (or emitter for transistor circuit) bypass capacitors. Figure 1 shows the capacitors in a typical circuit schematic. In general, use .1 mfd. to 1 mfd. coupling capacitors for tube circuits and 10 mfd. to 30 mfd. capacitors for transistor circuits. Use 100 mfd. bypasses for tube cathode or transistor emitter bypass circuits. Voltage ratings of replacement capacitors should be equal to or greater than those of the original capacitors.

Extending high response: High frequency response may be improved by removing signal bypass capacitors in tube plate (and transistor collector) circuits. Circuit location is shown in the schematic diagram (Fig. 2). These capacitors are usually designed into inexpensive amplifier circuits to give the apparent effect of better low frequency response. Actually all the plate-emitter bypasses simply decrease the highs. Therefore the bass sounds louder in contrast.

Flattening the response curve: Extending frequency response range at the low and high frequency end of the audio spectrum will not necessarily provide flat response. However, the frequency range extension makes it possible to flatten response over a greater range of frequency.

The most accepted technique for flattening the frequency response of an amplifier is the



(A) TUBE CIRCUIT FIGURE 1 (B) TRANSISTOR CIRCUIT

incorporation of negative feedback. This technique feeds a small portion of the output signal back into an early amplifier stage in opposite phase to the input signal at that point. A frequency component that ordinarily receives a greater amount of amplification in the basic amplifier receives a greater amount of cancellation in the amplifier provided with feedback.

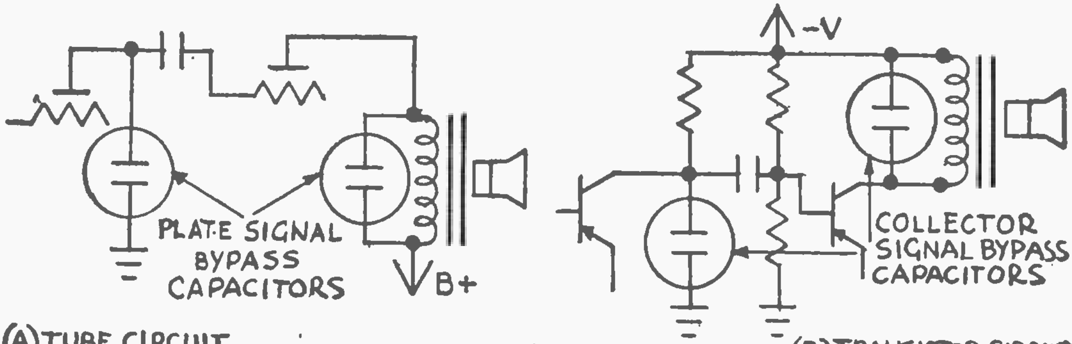
There are various ways to incorporate negative feedback. The method shown in Fig. 6, where feedback voltage is taken from the output transformer secondary and fed to the emitter of the second stage, is one of the easiest arrangements to use. The beauty of this approach is that you only interchange output transformer secondary connections if necessary to obtain phase reversal. The output transformer in inexpensive amplifiers is the greatest contributor to poor frequency response, and hence should be included in the feedback loop. Note that the cathode or emitter bypass capacitor must be removed at the feedback point if a bypass originally was provided in the circuit.

Special problems: Special problems may arise when you improve the frequency response of an amplifier.

If the amplifier is ac or ac-dc operated, low frequency response extension may show up poor filtering and shielding. In this event you may have to increase the size of power supply filter capacitors, and you may have to shorten grid leads. In some cases the grid lead of the first audio stage will have to be shielded.

If the plate leads of the output audio stage pass too close to input stage (particularly grid) leads, the removal of plate bypass capacitors may cause positive feedback which is manifested as squealing or a tendency to squeal at the higher frequencies. You can eliminate this difficulty if it occurs by shortening and re-dressing leads. This difficulty will rarely be encountered in transistor amplifiers due to the low impedance levels involved.

A typical modification: The ready made Lafayette transistor amplifier PK-522 has attracted a lot of interest in experimenter



(A) TUBE CIRCUIT FIGURE 2 (B) TRANSISTOR CIRCUIT

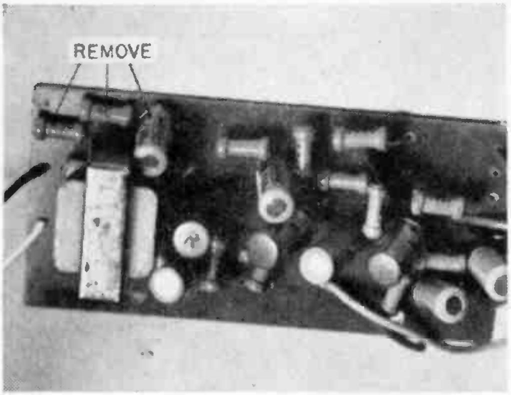


Fig. 4: Top view of amplifier before modification. The two resistors and the capacitor indicated must be removed.

Fig. 5A: Top view of amplifier board after modification. The 10 microfarad capacitor is soldered into position.

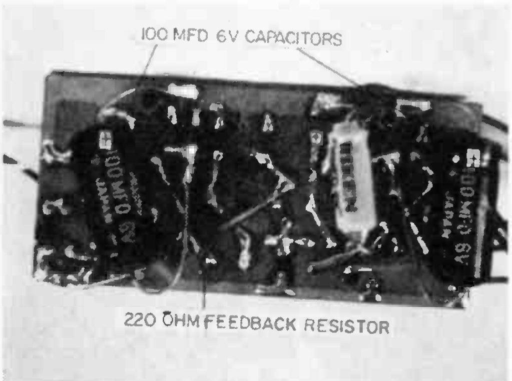
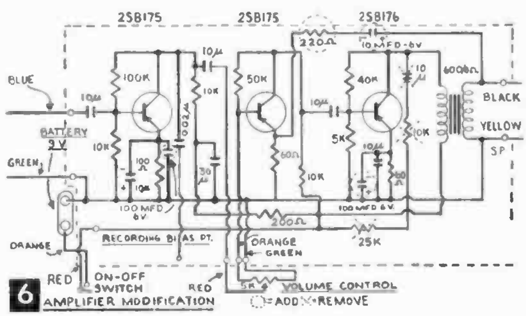


Fig. 5B: Underneath the amplifier board after modification. Two 100 microfarad capacitors and the 220-ohm resistor installed.



6 AMPLIFIER MODIFICATION

fields. This amplifier, a basic component in numerous electronic gadgets, costs less than three transistors which an experimenter might buy to build his own. The frequency range of this amplifier is limited since its intended use is in inexpensive entertainment devices. This amplifier is used as an example to show how frequency response may be extended by making minor changes.

Curve A in Fig. 3 shows the frequency response of the PK-522 prior to modification. Note that there isn't a flat portion on the curve. Response is up 2db from the zero db reference at about 2500 cycles, and response is down 3 db at about 400 cycles and 12,000 cycles.

Curve B in Fig. 3 shows the frequency response of the modified PK-522. The 3 db points occur now at 70 cycles and 30,000 cycles. This is a considerable range extension. While much of this improvement will never get through a 2½-in. PM speaker if you use one, the improvement in tone is noticeable. If you use a larger speaker, the improvement in frequency response will result in marked improvement of tone.

The modifications involved are the introduction of a feedback circuit, the addition of larger bypass capacitors in the input and output transistor emitter circuits, and the removal of the output collector bypass. Coupling capacitor changes are not required since the originals are 10 mfd.

Figure 6 shows the circuit changes. The 25k resistor, the 10k resistor, and the 10 mfd. capacitor in the output transistor collector circuit are removed. The resistors may be discarded. The positive terminal of the 10 mfd. capacitor is connected to the high (black lead) side of the output transformer secondary. A 220-ohm resistor is connected from the negative terminal of this 10 mfd. capacitor to the emitter of the second transistor. The capacitance of the emitter bypasses in the input and output transistor stages is increased by connecting 100 mfd., 6-volt miniature electrolytic capacitors in parallel with the original 10 mfd. capacitors.

MATERIALS LIST—TRICKS FOR IMPROVING AMPLIFIER FREQUENCY RESPONSE

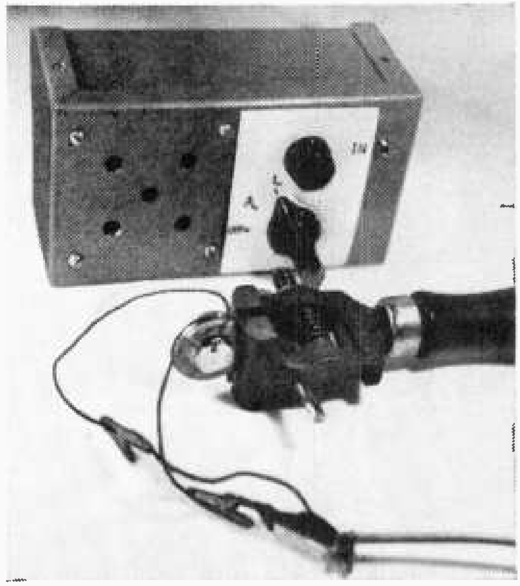
Amt. Req.	Size and Description
1	3-transistor amplifier (Lafayette PK-522)
1	5k miniature volume control and switch (Lafayette VC-27)
2	100 mfd, 6-v miniature capacitor (Lafayette CF-106)
1	220 ohm, ½-w carbon resistor

Parts for this project were obtained from:
Lafayette Radio, 111 Jericho Turnpike, Syosset, L. I., N. Y.

Build the Amplagimik

The Amplagimik—a source of audible sound and a utility test amplifier—will be a valuable addition to your shop equipment. A "ready-built" amplifier is the heart of the instrument which you can build for less than $10

By FORREST H. FRANTZ SR.



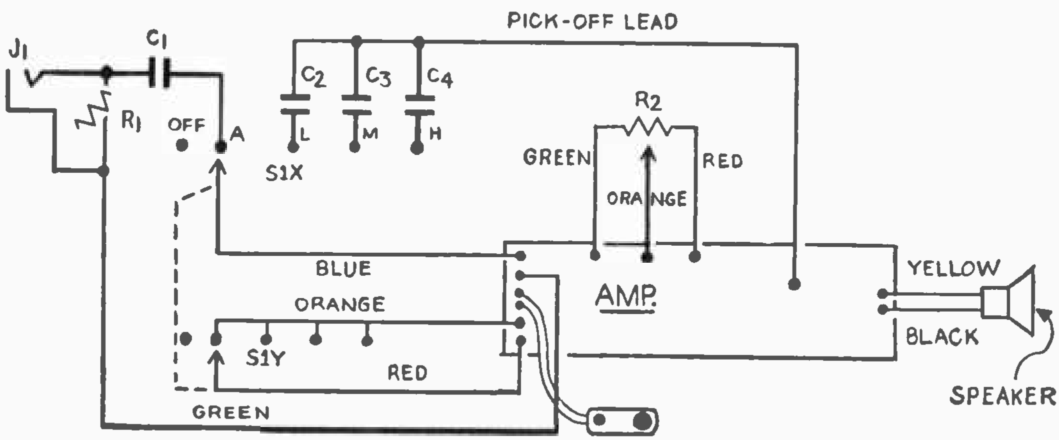
You can use the Amplagimik for testing microphones. Lock the microphone in a vise and measure output.

THE Amplagimik (Amplifier and Audible Generating Gadget) can be used as a utility test amplifier, an audio signal tracer, a microphone tester, and an audible tone generator.

How It Works: With the Amplagimik switch set to Position A., Capacitor C1 is connected in series with the amplifier and jack J1 (Fig. 1). In this position the unit functions as an amplifier and R2 is the gain control. It may be used as a utility amplifier for radio tuners or microphones, an audio signal tracer, an ac bridge null amplifier, or for any of the other numerous functions which an audio amplifier can perform.

With the Amplagimik switch in the L, M, or H position, a low, medium, or high frequency audible tone is generated. Capacitors C2, C3, and C4 are the respective feedback capacitors which turn the amplifier into a sound generator. Vernier frequency control is provided by R2. In this mode of operation the Amplagimik may be used to test microphones or any other test requiring audible sound.

Construction: Lay out and drill the front of the aluminum miniature case as in Fig. 2. Fasten the back with the self-tapping screws provided prior to drilling. This will minimize the chances of messing up the case during the drilling operation. Clean burrs from the edges of the holes and remove chips from the case.



1 CIRCUIT DIAGRAM

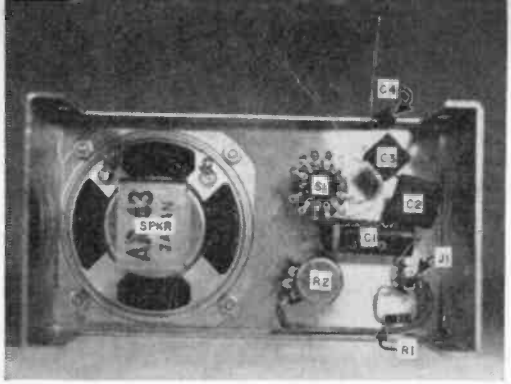


Fig. 3: Begin the wiring after placing the parts as shown in the photograph. Solder all connections.

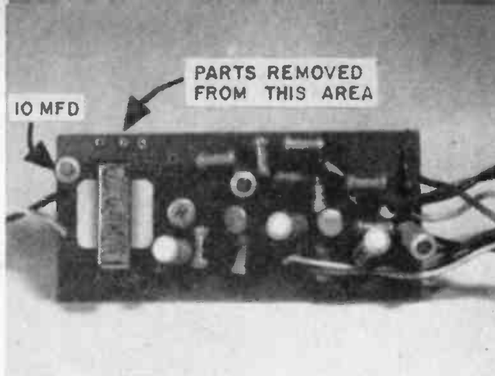


Fig. 4: Modify the circuit board on the amplifier. Carefully remove the unused components (See text).

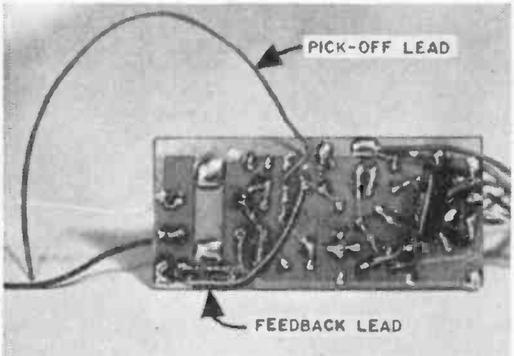


Fig. 5: Adding the pick-off lead and the feedback lead. Dress the feedback lead close to the chassis.

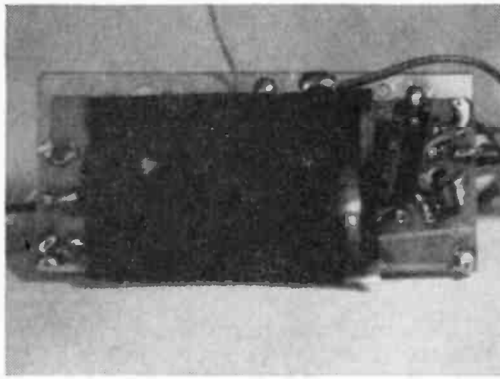
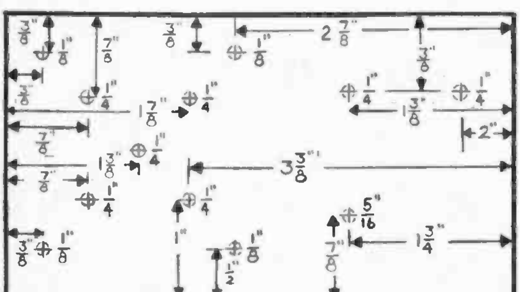


Fig. 6: Tape the entire back of the circuit board to prevent short circuits when it is installed in the box.



2 PANEL LAYOUT

MATERIALS LIST—AMPLAGIMIK

Desig.	Size and Description
R1	47K 1/2 watt carbon resistor
R2	5K miniature volume control
C1	.1 mfd, 600 volt paper capacitor
C2	.2 mfd, 75 volt miniature ceramic capacitor
C3	.05 mfd, 75 volt miniature ceramic capacitor
C4	.005 mfd, 75 volt miniature ceramic capacitor
J1	subminiature jack
S1	subminiature 2 pole, 5 pos. switch
SPKR	10 ohm, 2 1/2-in. PM loudspeaker
AMP	3 transistor miniature amplifier
	5 1/4 x 3 x 2 1/8-in. aluminum miniature case
	miniature knob
	pointer knob
	9 volt battery
	Parts available from Lafayette Radio Co., 111 Jericho Turnpike, Syosset, L. I., N. Y.

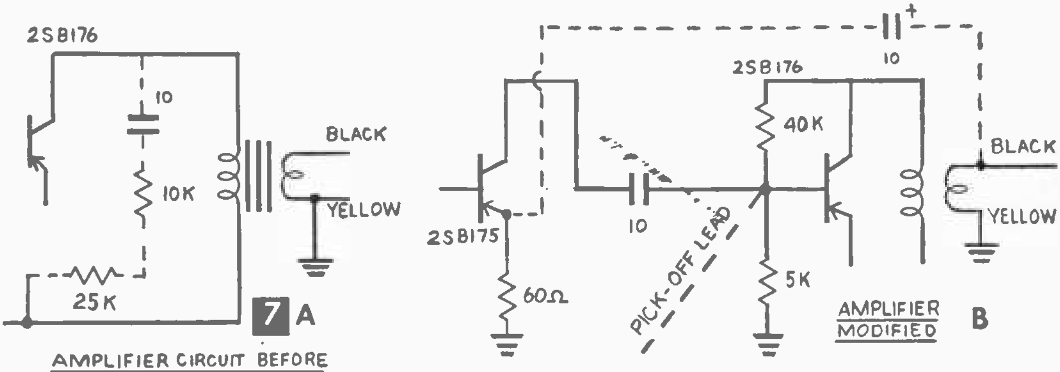
Cut the volume control shaft to 3/8-in. length. Place the part of the shaft to be discarded in the vise during the sawing operation to prevent damage to the bushing.

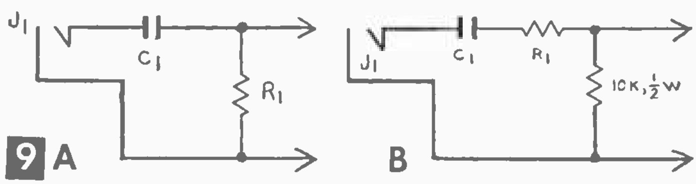
Mount J1, S1, R2, and SPKR on the front of the case. Wire C1, C2, C3, C4, R1, J1, and R2 as shown in Fig. 3.

The amplifier (AMP) requires minor modification. Use Figs. 4, 5, and 7 for guidance in making the modifications.

1. Move the 30 mfd. capacitor on the bottom of the amplifier into position as in Fig. 5.
2. Remove the 10 mfd. capacitor, 10K resistor, and 25K resistor from the collector circuit of the 2SB176 transistor as in Fig. 7A.
3. Connect the 10 mfd. capacitor into the feedback circuit shown in Fig. 7B. You can make use of one of the copper islands which was part of the previous wiring for the capacitor to feedback lead connection.
4. Add the pick-off lead (Figs. 7B and 5). It should be about 5-in. long. The "pick-off" lead is the feedback path for the Amplagimik sound generator function.
5. Place electrical tape over the back of the amplifier board (Fig. 6).

The circuit diagram which is furnished with the amplifier and the part values printed on the components will serve as supplemental information in making these modifications.





Next, mate the front case assembly and. the modified amplifier connections. Figs. 1 and 8 give details. The battery should be wedged against the end of the case with a small piece of sponge rubber inserted between the speaker magnet frame and the battery. The amplifier fits over the back of the speaker and the battery. A short piece of wire passing inside the speaker magnet frame must be brought up through the two large holes to the top side of the amplifier. This provides "first order" anchoring for the amplifier. A small piece of sponge rubber fastened to the top of the output transformer with rubber cement will hold the amplifier firmly in place when the back is fastened.

Be sure to position the battery so that the self-tapping screws can't cause battery damage when you fasten the back of the case.

The switch plate is a card 2 x 2¾ in. The markings may be typed or hand lettered. (Fig. 10). Fasten with rubber cement or cellophane tape.

Deviations: The amplifier (A) input circuit shown in Fig. 1 was chosen to suit particular requirements. The arrangement shown in Fig. 9A is more desirable for general purpose use—particularly if there is a dc voltage component in the input signal. The input circuit shown in Fig. 9B is desirable if, in addition, you wish to have a higher input impedance. This arrangement causes a considerable reduction in amplifier gain.

The H position may sound bad on tone generation from a fidelity standpoint. If you find it to be extremely poor, you can increase the capacity of C4. The frequency range will decrease as you increase C4. You can lower the L and M ranges if you wish by making C2 and C3 respectively larger.

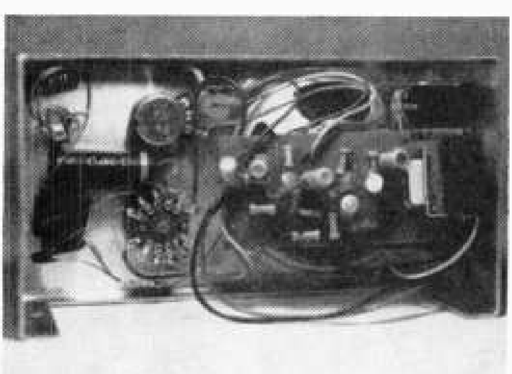


Fig. 8: Match up the case and amplifier connections and mount the amplifier inside the case. Use sponge rubber to secure components such as the battery.

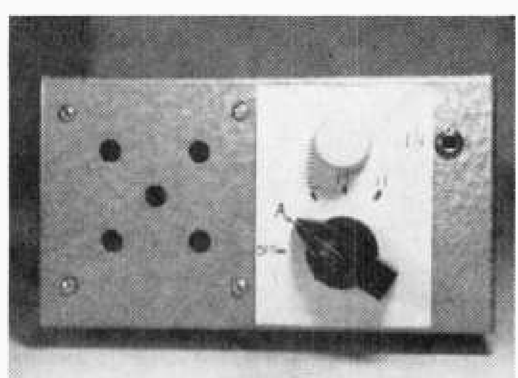
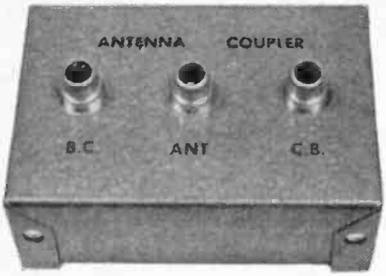


Fig. 10: Make up the switch plate from a piece of card. You can type or hand letter the information. Paste the card down to the panel with rubber cement.

2-in-1 Car Antenna

Use for both CB and broadcast, by adding a $2 coupler

By JOE A. ROLF, K5JOK



DON'T overlook using one of the new compact cowl-mount citizens band antennas just because it means drilling a new fender hole, or discarding the broadcast whip! You can solve this problem with the two-dollar coupler shown in Fig. 1.

The surprisingly simple circuit is shown in Fig. 2. Briefly, here is how it works: Two tuned circuits are used, one consisting of C1 and L1 connected between the antenna and bc receiver, the other, C2 and L2, connected between the antenna and cb unit. C1-L1 resonates in the citizens band and the resultant impedance of the circuit isolates the bc receiver from the antenna at 27 mc. The impedance, however, is low at broadcast frequencies and the bc receiver is connected in normal fashion. Similarly, C2-L2 resonates in the broadcast band and isolates the cb unit from the antenna, while allowing normal operation in the citizens band.

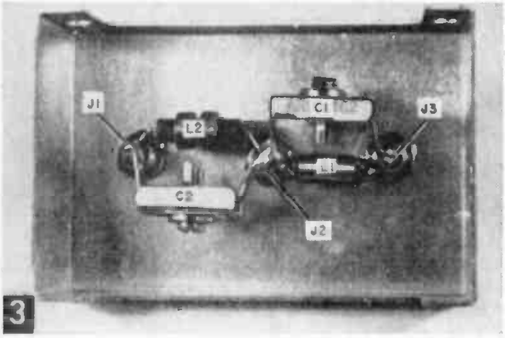
A CU-2117A Bud Minibox is used to house the coupler and can be conveniently hung behind the dash when completed. Internal layout is shown in Fig. 3. The author used phono jacks in his unit, mainly to match connections peculiar to his equipment. Choose connectors compatible with your particular installation. Components are connected directly to the connectors and layout is not especially critical. Keep leads short however, and isolate each tuned circuit from the other as much as possible.

Adjustment is as simple as construction, but should be performed carefully to minimize possible losses. Tune the bc receiver to a weak station in the middle of the broadcast band and adjust C2 for maximum volume. If the bc receiver has not been aligned for use with your citizens band antenna, it may be necessary to touch up the antenna trimmer located on the side of the receiver. Adjust C1 with the aid of an S-meter, if your cb unit has one, or a field strength meter. Tune for maximum S-meter reading in the middle of the citizens band, or for best transmitter output on your favorite channel with the field strength meter. In absence of the above aids, C1 can be adjusted roughly by inserting a #47 dial lamp in place of the broadcast receiver and tuning for minimum brilliance. You will note that adjustment of C1 is more critical than that of C2. Always adjust C1 last.

Some losses are involved even when the coupler is properly adjusted, but the author has found that losses are too small to effect either mode of operation. In fact, the fraction of a watt output lost is well worth the advantage of being able to listen to the bc receiver and use the cb unit at the same time with a single antenna.

MATERIALS LIST—2-IN-1 CAR ANTENNA

Desig.	Size and Description
C1	5-80 mmf trimmer capacitor, Arco 462, or equivalent
C2	50-380 mmf trimmer capacitor, Arco 465, or equivalent
L1	1 microhenry RF choke, Miller 4602, or equivalent
L2	1 millihenry choke, Miller 4642, or equivalent
J1, J2, J3	jacks, select to match existing installation
1	aluminum box, Bud CU2117A or equivalent



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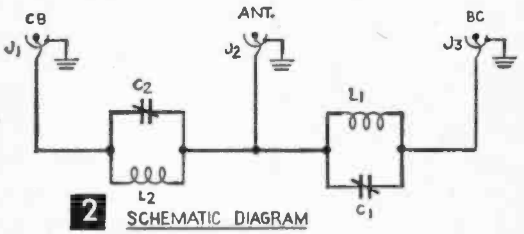


2 SCHEMATIC DIAGRAM

Parts locations inside the box reveals ample room for wiring and adjustments. All components mount on the connectors. Use connectors to fit present equipment.

Install a Tach for Only $22

By BILL McHUGH

After the kit is assembled, you connect one of the leads to an a-c power line to calibrate the needle setting for your car. A simple screwdriver adjustment completes the job.

Space between the dash and steering column on this import car was limited. But a good fit was made by mounting the housing casting backwards. Kit brackets also make over or under-dash mounting possible.

USUALLY we find tachs on the dash panels of sports cars or big trucks but we're hard to sell on the idea of installing a tachometer in the family sedan.

But a new assemble-it-yourself kit offered by Allied Radio is easy on the pocketbook, and we found it not too tough to assemble. It looks as though it could pay for itself if it helps ward off just one trip to the car hospital.

An electronic tach feeds on pulses from the distributor. Like a doctor's stethoscope, it counts engine heartbeats. With the usual kind of electronic tach found on the console in any well equipped garage, the mechanic reads engine speed while the car is standing still. This is fine for troubleshooting and tuneup, but a tach anchored to the garage tells you little about road performance.

Mount a tach on the dash and a glance at the dial gives you an immediate report on the engine performance, *while you're driving*. And of course, you can use it for tuning too.

The kit (Fig. 2) takes about a full evening to assemble. Instructions in the manual are very complete, include circuit theory, and even tell you how long to cut the wire leads on the parts. A good pair of diagonal wire cutting pliers and a small pencil-type electronic soldering iron are absolutely essential. You'll find it would be impossible to assemble the kit using the larger wand-type soldering irons because the parts are small and mount closely together behind the meter case.

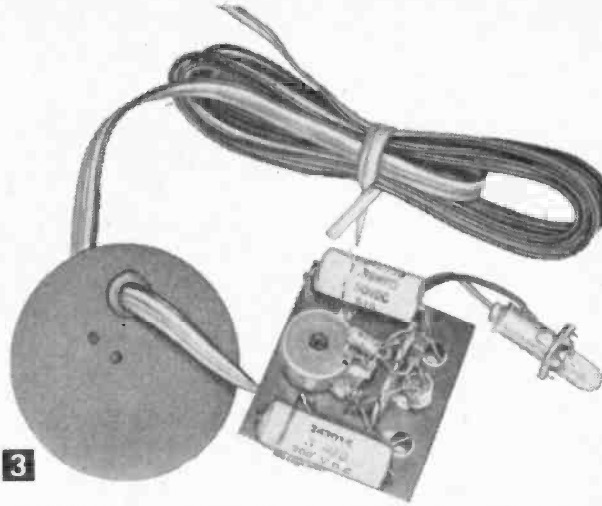
Use a Heat Sink when you solder the transistor and diodes. *Heat sink* is electronic jargon for an improvised clip or small long-nose plier with which you grip the wire lead of a small part. The idea is to make a good firm contact between the wire lead and a much larger mass of metal. When your soldering iron touches a nearby joint, heat travels down the wire lead and is absorbed instead of reaching the part itself and burning up the innards.

The complete electronic tach circuit mounts on a small plastic chassis board. When you've finished soldering the last part, you fasten the chassis to the meter posts and install a lamp through the back of the meter to illuminate the dial. A four-conductor cable feeds out the back of the assembly to the engine compartment.

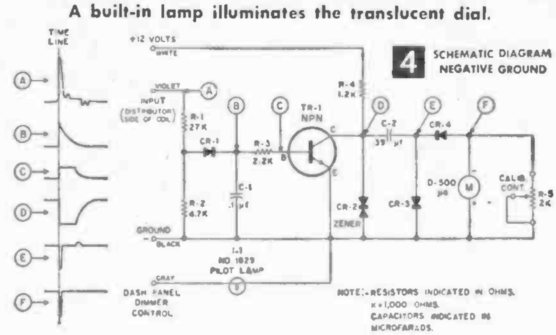
Calibration has been engineered for simplicity. With most electronic tach circuits, you have to calibrate with a scope. The reason is that two, four, six, and eight cylinder systems deliver a different number of pulses per second. Variation in parts also dictates calibration. Allied Knight-Kit designers solve the problem by using your 60-cycle power line as a convenient frequency source, along with a special probe in the kit. You connect one of the four tach leads to the a-c line. The other leads run to the car battery and ground. A table indicates the setting on your dial that corresponds to the number of cylinders in your engine. Once you set the calibration control pot, you're ready to install the instrument permanently.

The kit comes in two distinctly different versions, one for 12- or 24-volt positive ground ignition, and the other for 12- or 24-volt negative ground cars. You can tell which kind of wiring is used in your car by checking to see which pole of your battery connects through a ground strap to the main frame. If your car runs on a 6-volt battery, you can use the tach but you'll need an auxiliary 9- or 12-volt battery. An unusual kit feature is zener diode regulation which provides 3% accuracy despite temperature or voltage variations.

3



Circuit wiring can be done in about three hours. Parts mount on a plastic chassis which fastens to the back of the meter dial. A built-in lamp illuminates the translucent dial.



Using the Tach. Most important of tuning adjustments is setting the carb for the engine's recommended idling speed. You may want to allow an extra loop of cable when you install your tach so that you can temporarily place it where you can see the dial while you work on the engine.

The tach acts as an auxiliary speedometer since engine speed in standard transmission cars is directly proportional to road speed. You can detect clutch slippage if the tachometer increases its reading more than the regular speedometer as you accelerate.

An extra red pointer on the dial can be set at any reference point. To get maximum fuel economy in standard shift cars, set the pointer at an *rpm* equivalent to 30-40% of maximum engine speed. Always accelerate until the tach needle lines up with the red pointer, shift at this speed and you'll save gas.

If you want maximum drag starts, determine your *rpm* value for fully developed horsepower. Then set the pointer at this *rpm* and accelerate until your engine is up to 110-120% more than max and then shift gears.

MATERIALS LIST—ELECTRONIC TACH

No. Req.	Size and Description
1	Catalog No. 83Y944 Knight Kit for 12- or 24-volt negative ground cars ($21.95)
	or
1	Catalog No. 83Y980 Knight Kit for 12- or 24-volt positive ground cars ($21.95)
1	9-volt radio battery with clips (required only on 6-volt cars)

* The above items available Allied Radio Corp., 100 N. Western Ave., Chicago 80, Ill. The Tach Kit Manual can be ordered separately (10 cents).

How to Fix Your Own Radio

By BERNIE KAMOROFF

You don't need a big shop or elaborate equipment to make simple radio repairs. A small meter, a tube tester at the corner drug store, a bit of patience and some knowledge is all it takes. This story gives you the knowledge.

SUDDENLY, the sweet music disappears, and the radio goes dead. Naturally, you take a few tentative corrective steps, like slapping it on the side. No help. You hit it on the top. Still doesn't work. Should you try to repair it yourself or call a pro? Hmm . . . There's a big ol' tube-tester down at the corner drug store . . .

The important thing to remember is that you must know where to stop. Don't get in too deeply, or the repair bill to rehash your do-it-yourself attempt will exceed the cost of a new radio! Instead, work calmly, carefully and methodically.

About 80% of all radio troubles are tube troubles. Check the bottom or back of your set for a diagram showing the tube locations, so you can replace the tubes in the correct sockets. If there is none, make a picture of the chassis, using a circle for each tube location. Pull the tubes out gently, one at a time, and make a note of the tube number (usually frosted or etched on the top or side) in the appropriate circle. If you still have any doubts, you can use consecutive numbers and mark both tube and socket with a wax pencil. Many tyros in this game look at a black or silver spot in a tube and say "Hmm . . . burned." Nothing could be further from the truth. The black or silver mark is caused when the tube is manufactured, and they burn out excess air by flashing the "getter." No, the only way to tell if a tube is good, is to test it on a tester. (By the way, a tube can "light" and still be bad!)

If you use the tester at a local drug store, test the tester first. Make sure that all the knobs on the tester read "O" in their minimum positions. Some of these birds deliberately set the knobs back so you get a lower reading than you should, and you wind up buying tubes you don't really need!

What happens if all the tubes check OK? Are you going to give up now? You don't have to. What you will need is called a VOM meter. Its full name is volt-ohm-milliameter. These handy-dandies come in a wide range of sizes and types to fit your pocket or purse. Armed with this device, and with the radio disconnected from the wall outlet, follow the next steps. First decide on the symptom, and then localize the trouble. Replace the suspect part and when the radio perks up again, think of the money you've saved and enjoy the music!

No Sound At All:

1. Bad tube—May be in any circuit. Check all tubes for emission, leakage, and shorts.

2. Bad rectifier—Check all rectifiers with VOM as follows: Attach one lead from the VOM to the rectifier's anode and one to the cathode. Make note as to whether the needle moves or not. Reverse the leads and follow the same procedure. If the needle moves for both tests, or if it does not move for either test, the rectifier is bad. If the needle moves for one test, but not the other, the rectifier is good.
3. Open circuited loop antenna—Check for continuity with the VOM.
4. Open transformer winding—Check the power supply transformer and choke for continuity.
5. No power—Check line cord (or batteries), and fuses. Check switch on volume control.

Weak Sound Only:

1. Bad tube—Check, power supply and audio amplifier tubes.
2. Bad potentiometer—Check volume and tone controls for shorts, opens, and correct resistances.
3. Bad speaker—Check for continuity; also, check physical condition.
4. Open circuited loop antenna—Check continuity.

Distorted Sound:

1. Bad tube—Check all.
2. Bad filter capacitor—(The filter capacitor is the largest one and usually has more than two leads.) Check for shorts. *Warning:* Be sure to discharge the capacitor before touching it.
3. Bad audio capacitor—Check all capacitors in the audio amplifier section..

Static Sound:

1. Bad tube—Check all.
2. Bad speaker connections—Check wiring to speaker and speaker transformer.
3. Loose ground connection—There should be 100% continuity.
4. Bad audio components—Check audio bypass capacitor.
5. Dusty tuner—Clean dust from tuning capacitor plates.

Buzzing Noise:

1. Poor dressing—Check shielded wires and wires with long leads.
2. Loose ground connection.
3. Shorted capacitor—Check filter and bypass capacitors.
4. Bad resistor—Check for shorts and opens in grid circuits.

Hum:

1. Bad audio amplifier or power supply tube.
2. Shorted filter capacitor.
3. Poor ground connection.
4. Tube leakage—Check oscillator, mixer, and RF amplifier tubes.

Signal Only Over Part of Dial:

1. Bad oscillator tube.
2. Shorted tuning capacitor.

If the Fuse Blows:

1. Bad tube—Usually shorted power supply tube; check all filaments.
2. Shorted filter capacitor.
3. Shorted rectifier.
4. Shorted transformer winding. (This list does not include alignment problems because, (1), they are rare in a factory-built radio, and (2), they require rather expensive testing equipment.)

INFORMATION: If you are not sure where to begin working on your radio, you ought to obtain some information about your set. The simplest way to get this data is to write direct to the manufacturer. If your set is of recent date, he can probably supply you with the information you need—either free or at a very low charge.

However, if he cannot, there are other ways of securing this information. Supreme Publications (1760 Balsam Rd., Highland Park, Ill.), puts out data books containing specific service instructions, diagrams, etc., covering most popular radio sets since 1926. The books cost from $2 to $2.50, and each book deals with a separate year of manufacture.

Another company, Howard W. Sams (1720 E. 38th St., Indianapolis 6, Ind.), publishes the famous "Photofact" folder sets. Each folder contains service data concerning one receiver make and model, including schematics and photos of the chassis, troubleshooting hints, replacement parts, etc. The folders are available singly at $1.95, in small sets, or in large filed groups. A complete index of all the folders since April, 1946, is available free on request.

Another problem you may encounter, especially when servicing very old radios, is the unavailability of certain parts. Many of the old four, five, and six prong tubes used in the "antique" sets are now obsolete and no longer available from regular tube outlets. There are, however, a number still around, and they are not hard to obtain. Many of the companies that deal in rebuilt, used tubes have the rare ones in stock, and at very low prices. Your local radio shop might also be able to dig up a few old ones for you if you ask. Some of the companies that sell the old tubes are:

Micro Electron Tube Co., Box 55, Park Station, Paterson 3, N.J.

Tru-Vac Electric Co., Harrison Ave., Box 107, Harrison, N. J.

Electronic Market, 3750 E. 10th Court, Hialeah, Fla.

Teltron Electric Co., 428 Harrison Ave., Harrison, N. J.

Video Electric Co., 9-15 6th St., Harrison, N. J.

We sent this report to the Heath Company, where It was reviewed by Al Robertson, amateur radio products manager for Heath. His comments are in italics...

The Kit Parade

(Heathkit "Marauder" HX-10 Transmitter)

By ROSS R. OLNEY

ELECTRONICS engineer or average hobbyist, almost anyone can build the Heathkit Marauder, but it would help to be an electronics engineer (which I'm not). In fact, in the preliminary instructions it is noted that this is no kit to begin with, no "first attempt" as it were. The manufacturers suggest you warm up on simpler kits first (Heathkits, of course), then swing into the beautiful HX-10.

We had a letter from one delighted HX-10 owner who stated this was the first kit of any type that he had built. However, he was an old-timer and "home-brew" fan so this opening statement still is to be seriously considered.

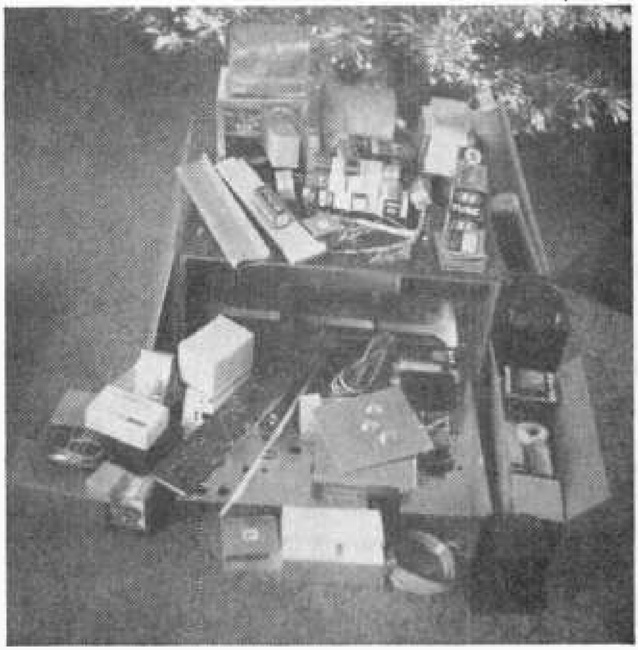


FIG. 1: Resistors, capacitors, tubes, coils, crystals and other things the builder probably won't even recognize until construction begins.

But first, what is it we're building. The HX-10 Marauder is the transmitter that appears in the dreams of every amateur radio operator. It's a complete, desk top unit with CW, AM, FSK, LSB and USB modes of operation, and with every mode (except AM) operating on a full 180 watts input on all bands. Covering 80, 40, 20, 15, and 10 meter amateur bands, the HX-10 employs heterodyne conversion circuitry and a temperature-compensated VFO for maximum frequency stability.

Heterodyne circuit allows use of single range, low frequency VFO, thus adding to stability.

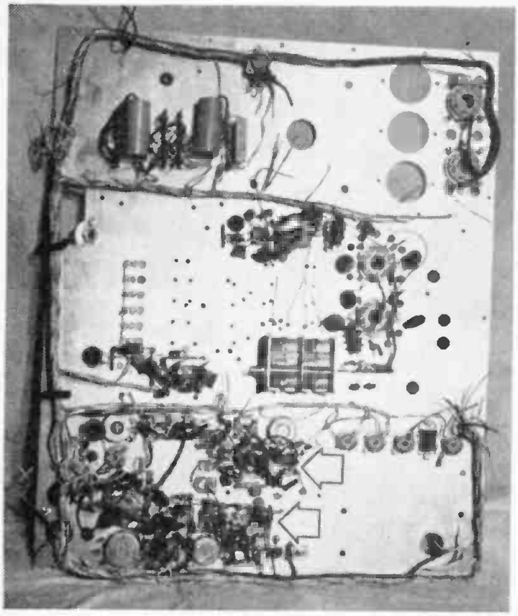
All modes are front panel switch selected with the function switch, which provides Off (which draws 4 watts due to the ever-burning VFO tubes), Standby, Push-to-talk and VOX, Spot and Manual positions. A spinner type tuning knob and a 10-in. slide rule scale are used for VFO tuning, with a gear ratio of 165-to-1 for excellent reset ability, tuning ease and minimum backlash (with HX-10's spring loaded dial).

Constant operation of VFO filaments does not significantly affect life (mine has been on a year now) and does wonders for warm-up stability.

All VOX controls in the Marauder are front panel mounted for easily adjustable operation to suit conditions. Twenty-one tubes are used, included rectifiers and voltage regulators. Silicon diodes are used in the bias supply for long life and trouble free operation.

All our HX-10 owners seem to prefer the "all-out-front" location of the controls.

If you don't understand some of these things, don't feel bad. Neither did I when I started the HX-10. Anyway, the idea was to see if I could build it cold, without extensive



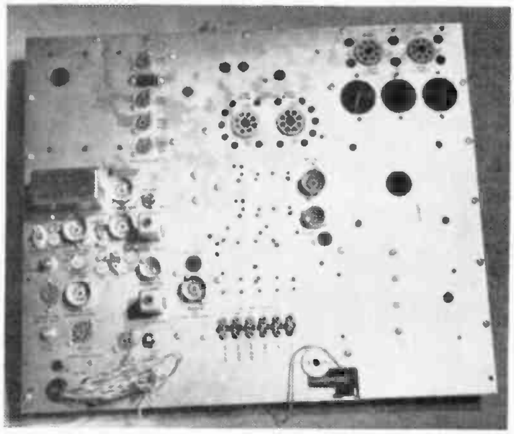


FIG. 3: Above, This is the wired chassis base assembly. The arrow shows the two backward mounted diodes, the only confusion resulting in error in construction.

FIG. 2: Left, Underside of the chassis top plate. The wiring at the arrow was the most complicated encountered, especially after mounting this plate on the base.

electronics experience. Actually, I had built a volt-ohm-meter in the past, but I didn't mention that to the editors of RADIO-TV-EXPERIMENTER and it did, in a way qualify me in the "warm-up" clause of the instructions.

If you know what a resistor looks like, have a vague idea what a power transformer does, are able to solder without splashing (and you'll see how important that is later) and know what "heat-sink" means, unpack the carton. Tear off the tape and witness the gee-whiz mess of parts you have (Fig. 2). Hundreds of them . . . thousands of them. Resistors that would put the electronics store to shame, tubes, capacitors, nuts and bolts, and all packed neatly in the 19x11x16-in. cabinet of soft green.

We like to think most customers are impressed by our kit packs and the array of quality parts and that "mess" is an unfair comment.

As with most kits, once you unpack the carton the damage is done. Even if you decided to chicken out, you couldn't get everything back in to return it. Wonder what they pay the genius who packs these things . . . ?

A result of careful planning by a group we call our "kit packing committee" which includes the fellow who sells us the boxes.

But let's take it step by step and see what happened to me, a real neophyte in the complicated electronics game. First thing was to complete the "dog" work, installing the terminal strips and grommets in the chassis base assembly. Duck soup (Fig. 3). Who says I can't qualify for my general ticket?

We stress in a kit of this size, that the builder work at a leisurely pace in a well-lighted, comfortable area with plenty of table space. By working a few available hours at a time, the construction is the pleasure it's intended to be and there is minimum reason for error.

One thing did bother me at this point and that was finding the parts . . . and this early in the game, too. Perhaps they could be better identified in future kits, or at least better separated according to sack number, box number or something.

We are still working on this area of kit packing, but any solution will involve increased costs and kits are designed to save money by "doing-it-yourself."

Also at this point, I made my first (and only major) mistake, due to a parts substitution. Two 500 ma tubular silicon diodes were called for in the instructions and the part numbers did not match with the two in the kit. In the confusion, I managed to mount them backwards, later causing two surge resistors to burn out. No real harm done, other than to my pride before my wife, who was happily helping.

Always possible despite our best efforts, particularly where so many parts are involved. Defective parts from the supplier becomes somewhat of a problem since you can't 100% inspect resistors, capacitors, etc.

So on to the chassis top plate, where the real wiring began. Clear cut, concise instructions made the job easy. If each wire on each component had been 3 in. long . . . ? But then the transmitter would be 6x6 ft., so I skillfully managed the many solder connections successfully. And it was fun.

But, it is time consuming, which is the only difference between the HX-10 and any other *kit. Each step in any kit assembly project is simple in itself.*

Note the pre-formed cable harness, a real help both time and nerve-wise.

Most customers have to strip hookup wire and a lot of long wire runs get messy unless they are laced.

My major mechanical problem, probably no news to experienced kit builders, came when I attached the chassis top plate to the base assembly. I suddenly found myself with a maze of wires and components right where rows of screws were to go. In fairness to Heath, I must admit that they previously specified dotted lines on the top plate as areas to be left free, but in many places I went over the lines because I just couldn't find any other available room. In any case I bent and pried and unsoldered and re-soldered and managed to line up the two parts, after which I re-checked all wiring for shorts. I figured I had it made until the next instruction called for the mounting of a long mode switch right down through the middle of my maze.

This is a little tricky but, with the harness running under the chassis top lip, the use of sheet metal screws (done in some cases) runs the risk of shorting the harness.

The job was really getting challenging. And at this point I wouldn't have quit for the price of the outfit. Others had done it without blowing every fuse in the neighborhood and so could I. I would suggest, however, that Heath either underline or italicize the "dotted line" instructions for clods like me.

With the mode switch, which calls for easy pre-wiring, construction became easier. Regarding all this wiring of the top plate, Heath has simplified the builder's job by not only calling out the value of the parts on the instructions, but also giving the individual colorcode of each part as it is used. It doubtless prevents many simple mistakes and also saves time until the builder has committed the various codes to memory.

They have also specified coffee breaks and resting periods during construction and with this I heartily concur. This is no job that jumps together just because you wave a soldering iron over it. It is a challenging job with a fine piece of equipment as the result, and it deserves your complete concentration (which you cannot give it by working too long at a stretch).

My earlier comment on this subject was premature.

The first of two missing parts panicked me in the wiring of the phone jack. A .01 mfd ceramic disc capacitor from jack to ground. And this does shake you. Either they made a mistake (and they hadn't so far), or you've connected a wrong part to a wrong part. You'll never know, friend, until you plug it in. At this point, to re-trace all steps

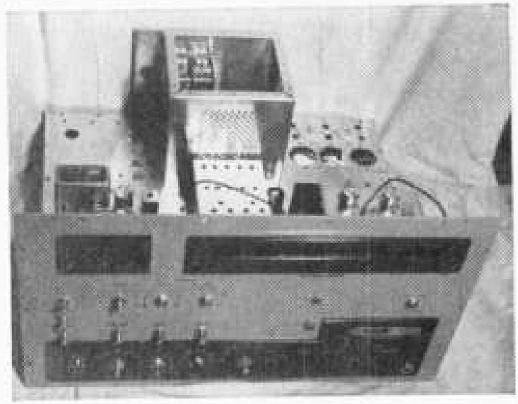


FIG. 4: Beginning to look like a completed unit, the front panel is mounted and switches installed. Meter and dial installed, along with final amp shield.

would take hours. The fact that the part is only worth a few cents doesn't seem to count with all the mental anguish you go through. But circle the instructions at that point and proceed. It's only a bleeder capacitor anyhow and can't affect the coming construction, just so you wire it in later.

This is a wise decision. It is possible that the part is missing, but after a kit has been on the market more than six months, it is most likely an error in construction.

Mechanical work on the top of the chassis was very interesting and a credit to the manufacturer. Each part fit exactly as it was supposed to, and each was easily identified through part numbers and pictures. The front panel went on equally easy, and the whole works began to look like a transmitter (Fig. 4). The VFO (Fig. 5) is built as a separate unit and is a welcome break from horsing around a chassis that is beginning to get heavy. (Total finished weight—85 lbs.) It is attached to the chassis later.

The other missing part, though in this case it could possibly be due to careless unpacking, was the dial cord spring. I found however, in a brilliant burst of inventiveness and at the sacrifice of my new ball point pen, that the little spring around the cartridge works just as well.

This is an example of customer ingenuity of which we take some pride. However, we regret the problem that made it necessary. Maybe the spring will turn up in the vacuum cleaner.

The final amplifier, as well as the intermediate stages, is completely shielded in the HX-10. On top of this cage the blower fan motor is mounted for heat control. I found myself wondering if such a fan would actually keep the solder from melting when I finally worked up the nerve to plug the whole works into the wall, but that was only lack of confidence on my part. Actually Heath thought of that and cautions the builder that

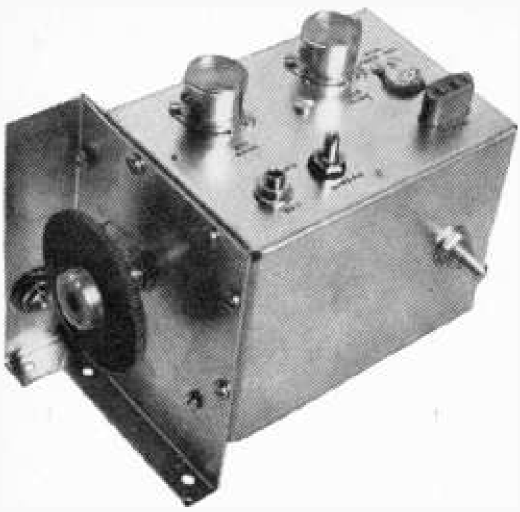


FIG. 5: The VFO is built as a separate unit and then mounted on chassis top plate. It is temperature compensated and always stays "on" regardless of position of function switch. VFO draws only 4 watts.

just because he has installed the line cord does not mean he can sock it in the wall. Besides, it isn't supposed to keep solder from melting . . . it doesn't get that hot.

The gearing was interesting and providing instructions are carefully followed, fit perfectly. No problems. I'll never forget the feeling of superiority that flooded over me as I turned the main VFO tuning knob and witnessed the little dial pointer moving surely back and forth across the dial. This is one of those eagerly awaited moments when you call in the family to witness your triumph.

Kit dial drives that feel "factory-built" are difficult to achieve. The HX-10 is an example of a good solution to the problem but we keep striving for even simpler, velvet drives.

With the end in sight, I plunged happily on almost wishing I could swing into a Heath Linear Amplifier before I cooled off. The final step—installation of shiny chrome knobs —and the instructions casually informed . . . "This completes the assembly of your HEATHKIT HX-10 Transmitter."

But that couldn't be . . . I still had many pages to go! Then it dawned on me as I browsed forward through the manual that the Heath Company didn't have near the confidence in me that I had in myself. That's right . . . the "In Case of Difficulty" section, and before that, the inspection and checking sections.

"Inspection, checking, and alignment sections."

I breathed a sight of relief. Not only did they tell me how to build it, but now they were going to tell me how to make sure I had done it right. An excellent piece of strategy that I am sure corrects many mistakes before they can be harmful. I was grateful knowing that, for the moment at least, I could put off the dreadful, throat-clutching moment when she had to be plugged in.

This is the exact intent of the inspection and resistance checks.

So I checked . . . and checked . . . and checked. After all, this is a piece of high-voltage equipment and with guys like me building it, anything can happen.

But I could delay no longer. The instructions insisted it was time. With my family safely in the far end of the house, and with my insurance premiums paid to date, I grasped the plug. With a deep breath, the kind you probably take when they sit you in the chair, I socked it home.

Nothing happened.

Already I knew I was ahead of the game. Particularly since this set has a temperature-compensated VFO and draws four watts with the switch in the OFF position due to the heaters in the VFO tubes being on all the time. I looked and sure enough, they were glowing!

More testing followed with a VTVM recommended, though initially I used a VOM. Then came the real moment of truth. Switching on the set.

At this point, in a rolling cloud of smoke, I discovered my mistake of the first day. You remember, installing the diodes backwards. A silent moment followed in memory of the two surge resistors that had passed on, and my troubles ended.

We are sorry the author did not enjoy the kit building thrill of success on the first try. However, when smoke appears it is not difficult to locate and correct the trouble.

Replacing the resistors was easy, and should not have been necessary at all. (I blamed Heath, though, when my wife asked about the pall in the house.)

All in all, this was one pleasant kit to build, though attention should be paid to Heath's suggestion that you don't go into it absolutely cold. I wouldn't recommend it to the next door auto mechanic, but to anyone interested in hamming, it should be a "challenging cinch." The instructions say 50 to 90 hours and it took me 63 for the initial construction and several more for the checking procedures. And I have a transmitter that I'm really proud of . . . all band and plenty of power.

Too bad there is no comment on alignment and "on-the-air" performance. The HX-10 has the advantage of easy alignment with simple test equipment even though it produces an SSB signal equivalent or superior to any other gear on the market (our humble opinion!).

As soon as my novice ticket comes in, watch for me on the air.

Auto Radio Booster

There have been many gadgets, hookups, and devices made so that a transistor radio can be played in an automobile. This booster has the "push" to make that small transistor radio really talk in a car

By HOMER L. DAVIDSON

Fig. 1: With the booster installed, you can expect better quality from your transistor radio in the car.

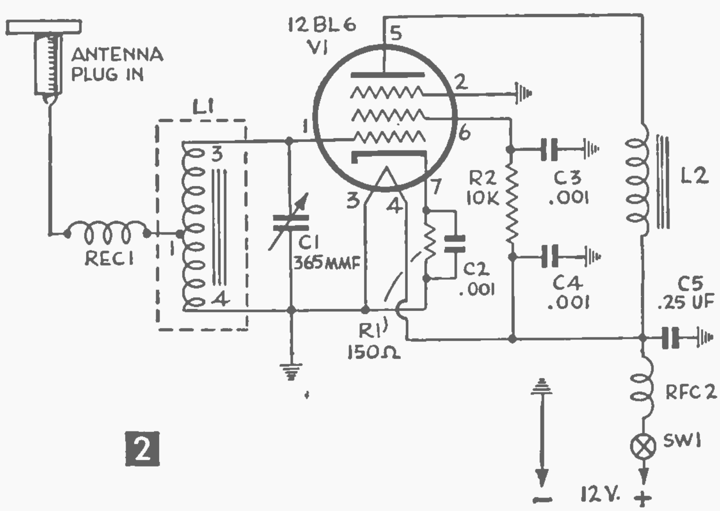
GENERALLY the reception in a car is only good on three or four local stations with the transistor radio placed near the windshield. The metal body deadens any distant reception. This auto booster was designed to raise the outside reception from an outside car radio antenna.

Circuit description: The circuit consists of a one tube RF amplifier operating from the auto's own battery. A female antenna jack is used so the outside auto antenna can be unplugged. L1 is a shielded antenna coil tuned with a midget variable capacitor. V1 is a 12 volt filament tube that will operate with a 12 volt plate voltage as the RF amplifier. The battery polarity must be observed when the unit is connected. The auto booster is wired for negative ground operation. A 10k-ohm resistor is placed in the leg of pin 6 for dropping the screen grid voltage.

Since the RF booster is a high gain amplifier all precautions must be taken to eliminate car radio ignition interference. The amplifier is constructed inside a metal chassis for shielding and a choke and capacitor bypasses the interference to ground. The tube socket is mounted on a printed board with printed

MATERIALS LIST—
AUTO RADIO BOOSTER

Desig.	Size and Description
C1	365 mfd variable capacitor
C2, C3, C4	.001 mfd capacitor
C5	.25 mfd 200-v paper capacitor
R1	150 ohm, ½-w resistor
R2	10k ½-w resistor
L1	shielded antenna coil, Miller A121A
L2	ferrite antenna coil
RFC1	100 microhenry choke, Miller 4612
RFC2	10 turns hookup wire, ½ in. diameter
V1	12BL6 tube
SW1	SPST toggle switch
Misc.	female antenna jack, tube socket, printed circuit board, 3-ft. ac cord.



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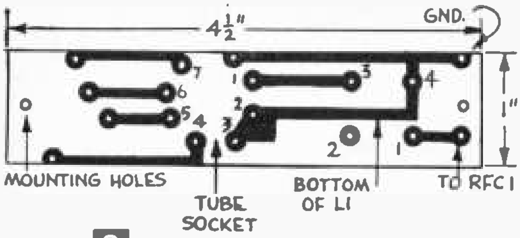


3 PRINTED BOARD

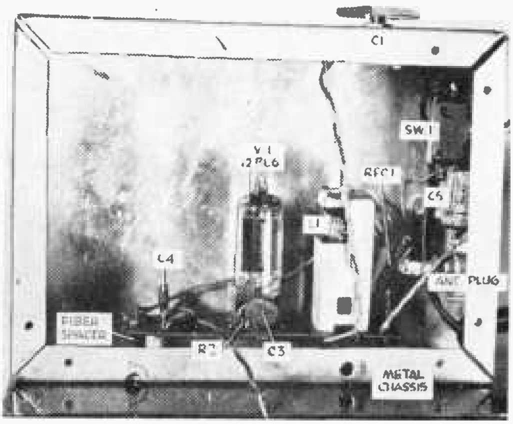


Fig. 4: With the cover removed, we see the location of the major components. Note capacitor C1 protruding.

wiring. Although the unit was constructed on this principle, a perforated board will do as well. In the latter case use ordinary hookup wire to connect the circuit. The printed board is mounted on two small fiber spacers for insulation.

The A lead wire, female antenna jack and toggle switch are mounted on the right side of the aluminum chassis. Mount C5 and RFC2 as close to the toggle switch as possible. The variable tuning capacitor is mounted on top of the chassis for easy operation. All of the small parts, shielded RF coil, and tube socket are placed on the printed circuit board. A perforated board was used for the front of the metal chassis and L2 is wired or secured to this board. The flat ferrite coil can be wired to the board by wrapping a couple of turns of plastic tape over the coil so the wire will not bite into it.

The cabinet is complete providing a lip, or shelf to hold the small transistor to the radio booster. This metal shelf sticks out about two inches with rounded edges. The edges are rounded to prevent scratches or torn clothes. There are several ways of mounting the booster to the car. Extend the bottom metal plate three inches and bolt to the metal under-dash with metal screws. Rubber feet can be secured to the bottom and the unit left sitting atop the car dashboard. Another method is to bolt the unit through the back into the car dummy radio plate.

Testing the unit: Check the wiring of the unit several times before placing the booster in the car. Leave the front perforated board loose while checking the unit. Use regular flat ac line cord for the A lead to the radio fuse and hook it to the car ignition switch. Be sure the negative or ground lead goes to a good chassis ground.

The booster unit should be secured permanently in place. Switch the unit on and the heaters of V1 will light. Plug the outside antenna into the female jack. Hold the perforated board in place and set a small transistor radio in front of it. Tune the variable capacitor and the stations will pour in. If nothing happens, check the polarity of the A lead. Use an ohmmeter to check if the switch is operating. Check the plate and screen for positive voltages.

The transistor radio is operated in the usual manner and is held to the perforated board with an elastic band. Tune in a station around 1000 *kc* and tune the variable capacitor for maximum volume. Note that the variable capacitor will tune at maximum volume close to the same frequency as the transistor radio. The transistor radio may be moved to the right or left of L2 and supply the gain received from this small booster. Next check for car radio noise. In most new automobiles, ignition noise is very low. It is best to place a capacitor on the generator post. Do not mount it to the red tagged lead. Place a distributor suppressor in the center lead of the distributor cap. Mount as close to the distributor as possible. If noise still persists add a capacitor to the hot or A lead going into the side of the distributor. Sometimes noise is picked up by a bad ground on the antenna itself. Loosen up the antenna and scrape off any residue so the metal lip will bite into the fender of the car.

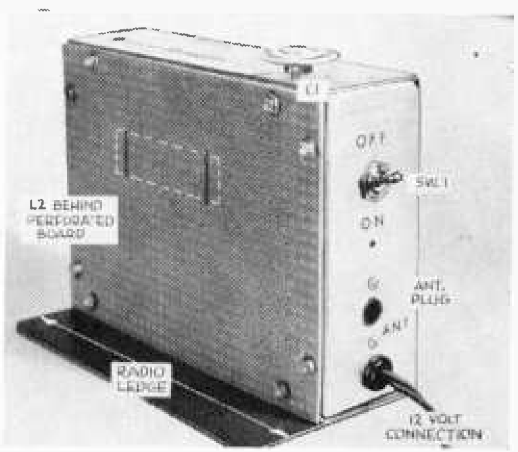


Fig. 5: The side view shows the on-off switch and the antenna jack. The line cord connects to the battery.

Sound Control Your Recorder

Why let tape go to waste? Add this device to your recorder and it will only move the tape when there is a sound to record . . .

By JAMES A. McROBERTS

TAPE recording of intermittent sound presents several problems, which have different solutions. For example, the tape may be run continuously. This solution gobbles up a large volume of tape which requires playback and editing with waste of the unused portions, and splicing.

The incoming sound may be monitored by an operator. This is a tedious, monotonous task for a nature lover seeking recordings of young birds hatching or a detective listening to sounds from "bugged" premises. He is apt to become drowsy—half asleep—in the course of time. His reaction time to pull the tape transport lever to forward in order to start the tape may be several seconds if he is fatigued by a long wait. The reaction time will be at least a second, under the most favorable conditions. Much of the valuable sound may be lost, which the detective overlooked, or didn't hear too well in his excitement to start the tape moving to record. If he always remembered correctly, there would be little need for recording. Any commotion in a bird's nest may precede sound valuable to the naturalist, and he too will miss some of his sound if unduly delayed.

An automatic relay actuated by the sound to be recorded is a preferable solution to the problem. Such a tape transport relay may also be very valuable in recording conferences or any activities where there are long quiet periods. A tape recorded in this way will be much less fatiguing to listen to on playback. Great tape savings may also be effected.

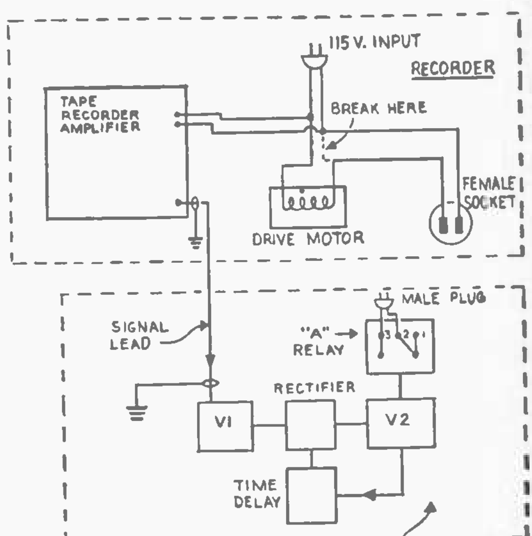
This relay takes the place of the human monitor and acts far faster than even he can when fully alert. Less than a second of reaction time is lost so very little of the desired sound is missed. Furthermore, the operator is not chained to the machine; he merely supplies it with tape occasionally.

Circuit Description: The block diagram (Fig. 1) is an overall picture of how the device works and is supplemented by the actual circuit schematic diagrams Fig. 2 and is pictured in Figs. 3, 4, and 5.

Most tape recorders have provision for monitoring while recording with earphones. Even though these may be described as auxiliary outputs for listening during playback, almost all are connected across the output transformer while recording. The high impedance input of the first tube (V1) of the relay does not load the output circuit of the recorder appreciably—it is better than 1 megohm (the impedance of P1 and C7 in series). Even when connected to a low impedance output, the device will function well since this type of impedance mismatch is of little consequence. (There is usually ample signal for this sort of duty.)

Potentiometer P1 serves to vary the input to V1 thereby acting as a threshold control. Sound below a certain level (intensity) will not actuate the following relay tube section V2, which is the other half of the single 6SN7GT.

Amplified sound is fed to the grid of V2 through coupling capacitor C6 and is an ac signal. Shunt connected crystal diode D1 rectifies this signal forming a positive going voltage. Whenever the positive bias developed across R3 and P2 (the grid resistors of V2)

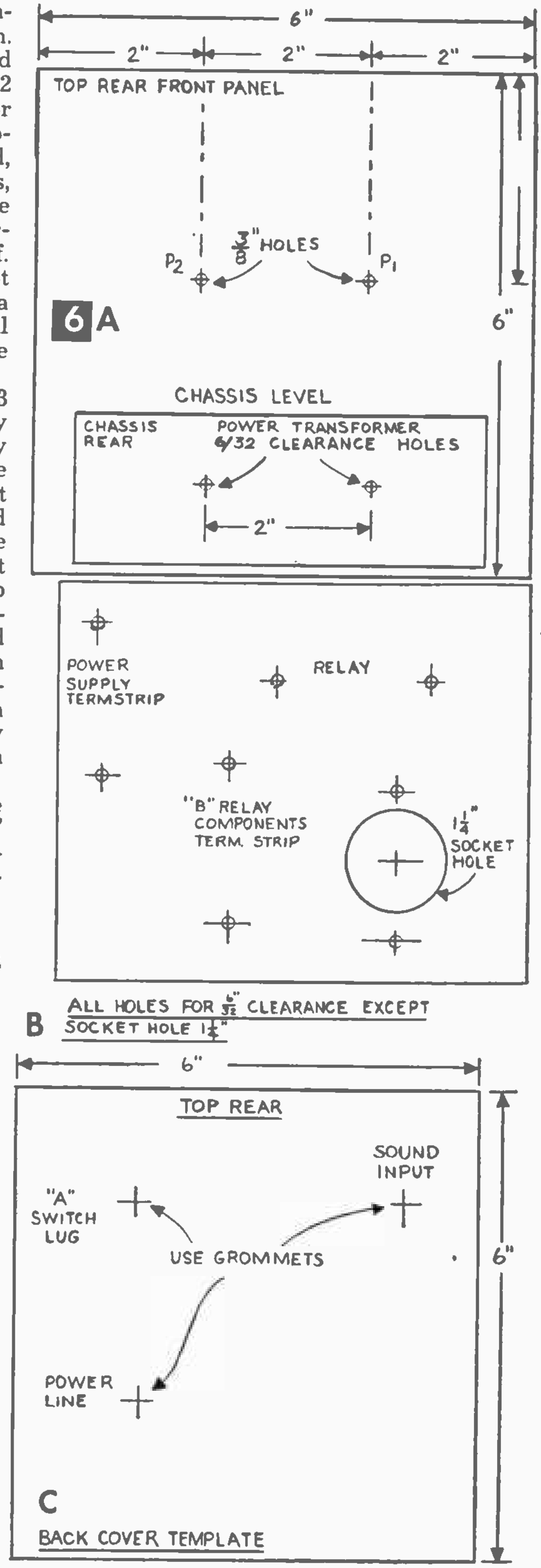


1 BLOCK DIAGRAM

is sufficiently positive, the plate current increase of V2 will cause the relay to pull in. The mechanical relay snaps to the energized position closing the "A" circuit contacts 2 and 3. These act as a switch in the motor circuit of the tape recorder to start the motor. With the tape transport lever on forward, the tape will move when the motor starts, making a recording. The amplifier of the tape recorder is arranged to function normally whether the motor relay is on or off. The device is actually recording in one spot until the tape is set in motion. Less than a half second is required to get up to normal speed and some recording starts even before this speed is reached.

The time constants of the grid resistor R3 and the shunt capacitor C5 are short. They have been made deliberately so. The relay must close quickly on sound at a level above that determined by the setting of P1. Without some alteration of the circuit, the relay would open very quickly—as soon as the positive charge on C5 had leaked off to the drop-out point of the tube and relay. Sound may drop to a very low level during lulls in the conversation, between bird calls, or other sound of interest. An auxiliary time delay has been incorporated into this circuit which is adjustable by potentiometer P2 from less than a second to about 35 seconds. A longer delay can be had by increasing P2 from its given value of 1 megohm, to 2.5 megohms.

The delay is due to the insertion of a time constant capacitor C3 by means of the "B" contacts of the relay. This capacitor is connected to the cathode of the second tube sec-



MATERIALS LIST—SOUND CONTROL YOUR RECORDER

Amt. Req.	Size and Description
1	6x6x6" utility cabinet with built in chassis, ICA #3823
1	octal socket, Amphenol 77MIP8
1	6SN7 GT tube
1	50 ma selenium rectifier
1	pri 117 v; sec. 6.3 v, 0.6 amp. 125 v, 15 ma power transformer, Stancor PS 8415
1	1N34 crystal diode
1	fused attachment plug El Menco type EI-32
2	1-ampere fuse 3AG-1A
2	1 lug terminal strip
1	2 lug terminal strip
2	1 megohm potentiometer, linear taper
2	20/20 mfd 150-v capacitors, dual section electrolytic
3	0.01 mfd 400-v capacitors, fixed paper
1	5000 ohm coil DPDT contact relay, Potter & Brumfield LM 11
1	plug, phono (or to match tape recorder monitor jack)
1	0.001 mfd capacitor ceramic disc
2	plugs, male attachment with rubber body
1	100k ohms ½-w resistor
1	4.7k ohm 1-w resistor
1	270k ½-w resistor
1	100 ohm 1-w resistor
1	1k ohm 1-w resistor
9 ft.	line cord use 5 ft. for relay line cord and remainder for "A" relay connections
3 ft.	shielded cable for sound input
2	dial knobs (one with scale)
3	rubber grommets

tion V2 during the off time of the relay and is charged to cathode potential. When the relay is energized, this capacitor's positive terminal is effectively connected to the grid of the tube. The charge on this capacitor (C3) leaks down to the positive grid potential through grid resistor R3 and the potentiometer P2. (P2 varies the time constant or rate of leak of this charge.) Since P2 is variable, it can be adjusted manually to fix the delay time.

With some sound coming in the charge on C3 and the remaining shunt capacity in the grid circuit will remain positive. When the sound stops, the charge on C3 will leak off and the relay will eventually open. Any sound sufficient to trigger the relay repeats the cycle. In practice, no interruption in the recording will occur if the sound is reasonably constant in volume.

Construction: Figures 3, 4 and 5 show location of the principal parts. The entire unit is assembled on a built-in chassis welded to the front panel of a metal utility box. Figure 6 has been provided for location of holes. Spacings are not critical and components may be used as templates in laying out the holes to be drilled.

Holes for all parts on the chassis and the two potentiometers on the panel should be drilled prior to attempting to mount parts. Drill the 1¼ in. hole for the socket opening last, or the chassis may be bent by drill pressure. Do not mount the relay until all other work has been accomplished—a slip of the soldering iron or other tool may ruin a new relay. Mount the selenium rectifier as one of the last jobs. Solder splashes between its plates will spoil it. Mask the tube socket with a piece of Scotch tape to prevent solder and wires from falling into its openings.

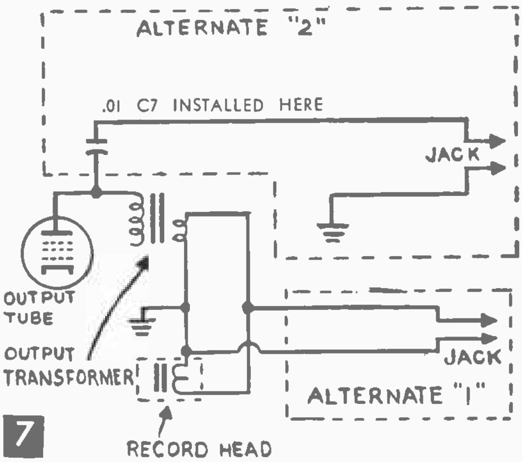
Soldering to the leads of the diode detector D1 and the relay coil lugs should be performed quickly with a hot iron. These parts can be damaged by overheating. Preferably, grasp the lead with a pair of pliers to act as a heat sink.

The two leads from the "A" contacts of the relay terminate in a male plug, with a foot or so of electric line cord between. A shielded cable runs from the potentiometer P1 and the blocking capacitor C7 to a plug suitable for connection to the monitor jack or external speaker on the tape recorder sound output. Get the right plug to fit the jack on your machine. If your recorder does not have such an output, connect shielded wire from the secondary of the output transformer to coaxial jack and hook a mating plug on the shielded wire from the sound input to the relay. Figure 7 shows two such circuits.

To match the attachment plug from the relay "A" contacts, unsolder one side of the power line running to the tape transport motor and hook a length of power line cord to the disconnected terminal and the terminal remaining connected to act as a switch leg. Outside the tape recorder, terminate this line in a female plug. By these two plugs and their mates, the tape recorder and the automatic relay can be separated from each other. A male plug with a shorting wire connected between its two contacts can close the tape recorder's motor circuit by insertion into the switch leg female receptacle. This plug restores the tape recorder to normal condition for use without the automatic relay described. For convenience, a 3-way cube tap is a handy accessory. Very often there is a scarcity of outlets and inability to find one for the relay power line and the tape recorder power line is a problem.

A switch has not been provided to turn the relay unit on or off. Pull out the power plug. If a switch is desired, the user can install one on the front panel or on the rear of potentiometer P1. Wire into the circuit between either transformer lead and the matching conductor of the ac power cord.

Operation and Testing: After careful wiring and inspection, the device should be ready



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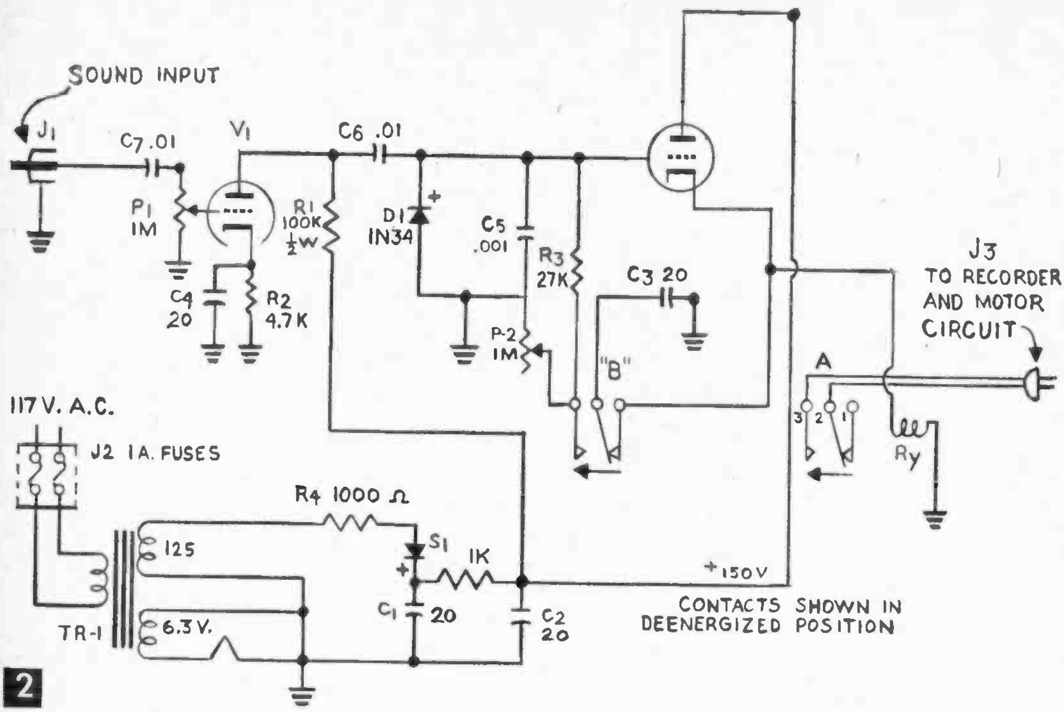
to operate. Plug in the power cord. Attach the relay switch leg to the lead from the opened motor circuit. Insert the signal cable into the output monitor jack. Allow about 30 seconds for warm up. Plug a microphone into tape recorder if not already inserted. Turn on tape recorder and allow it to warm up—do this simultaneously with the relay. Switch to record and put the tape transport control on forward as for normal recording. Advance the recording level control (volume control) on the recorder while speaking into the microphone as for normal recording. Adjust for proper output with level indicator.

As the level control is advanced the automatic relay unit will start the motor if the



potentiometer P1 is fully clockwise. The motor will run continuously as long as loud enough sound is fed continuously into the microphone as in normal operation. This will happen under the conditions mentioned regardless of the setting of delay control, P2.

With intermittent sound, delay control P2 makes a big difference. With the sound over the level required by the tape recorder for proper recording and the gain of P1 set high enough, the running time after the relay starts the motor is controlled by the P2 setting. At an extreme clockwise setting for P2 the tape will run continuously due to the long delay time before the drop out if the sound is fairly continuous. Otherwise, the automatic relay awaits another signal to trigger it to the on position, and the tape runs for another delay period continuously.

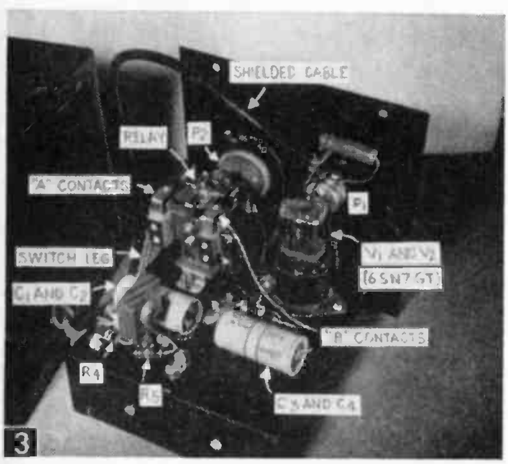


Fig. 3: Parts location on top of the chassis of the completed unit. All controls mount on front panel.

At the extreme counterclockwise position of P2, the delay time is very short and choppy motion will result. Sound may tend to be choppy with shorter delays though. For this reason, the P2 position is chosen for five seconds or longer delays in practice.

In operation, P1 is set so that the average sound made near the microphone or other pickup unit will easily trigger the automatic tape transport relay. It is usually set high enough to be triggered readily but P1 should be set low enough so that low extraneous sounds do not set off the device. Care in placing the pickup or microphone will help to discriminate between desired and unwanted sound being recorded.

Electromagnet Actuation: The "A" contacts can close the circuit to an electromagnet solenoid instead of the motor of the recorder. Such a solenoid may be mounted on an appropriate bracket to pull in the tape transport lever. A spring is arranged to return the lever whenever the relay is deenergized, and consequently the solenoid. The usual power supply for the solenoid is 110 volts ac which will require a plug to fit into another outlet or a cube tap. The use of a solenoid will help to avoid the wearing of a flat on the recorders rubber drive wheels.

Relay Adjustment: The relay in the automatic tape transport ought not to require adjustment. It should be left alone until other remedies and troubleshooting definitely indicate the need for such attention. Then give ministration to this relatively delicate component sparingly and gently.

Correct armature tension is important. Correct tension may be ascertained by gently moving the armature by hand (power off to the relay unit as a whole). The armature spring should just move. The spring may have moved in shipment and in mounting—it may be coiled or uncoiled slightly. Try twisting—gently—to see if the movement of the armature produces movement of the spring. Otherwise, loosen the sealing wax and adjust the spring tension by the adjusting screw, and—important!—reseal. (Use a dab of Duco or rubber cement to reseal if sealing wax is not at hand.)

Do not tamper with the screw adjustment on top of the armature.

Do not bend the contacts to the "A" and "B" fixed arms unless they are definitely out of shape due to abuse such as might occur in shipment. If such work is required, see that both up and down contacts touch the movable contacts simultaneously as the armature is moved by hand. Some light should be visible between the armature and the coil pole-piece as the relay is viewed from the side. (The armature is open, and its contacts are resting against the normally open fixed contacts during this inspection.)

Two cases require an adjustment of the armature spring tension.

1. If the armature pulls in and remains pulled in without any signal input, too little tension is present as the cause. Try loosening the spring by turning it gently in the support lug—it may have shifted slightly in shipment. Otherwise unseal and adjust as previously mentioned, increasing the tension by small amounts. Be careful not to shift the position of the armature in its pivots, or the spring's relative position.

2. If the armature buzzes but will not latch closed with normal sound (be sure there is enough delay on P2 and that P1 is turned a sufficient amount clockwise.) The tension in the spring is too great. Reverse the procedure under (1) preceding to lessen the tension.

Testing P2 Action: The relay armature can be pushed gently closed by hand. The relay will remain latched if the delay setting of P2 is enough and in proportion to that setting. This also checks the connection of C3 into the circuit.

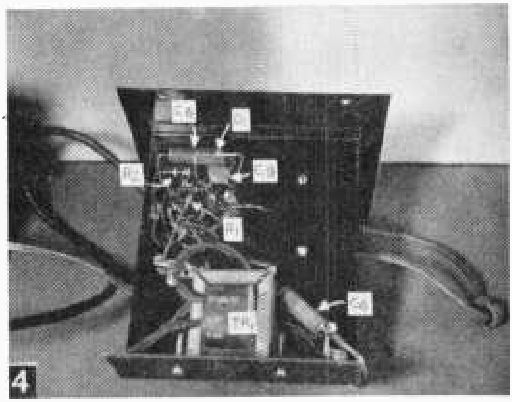


Fig. 4: Underneath the chassis inside the finished sound relay. Dress diode D1 to avoid short circuits.

Overall Quick Check: Remove the sound input plug from the monitor jack. Touch its inner conductor. The relay should start the motor. (P1 and P2 must be fully clockwise.)

Conclusion: The unit may be triggered from another sound source by connecting the sound input of the automatic relay to the output of an audio amplifier whose input is the sound to be used as a trigger. This is done just as with a tape recorder output.

Do not leave the tape between the rollers of the drive assembly (capstan and roller) any more than necessary or flats will be worn. Of course, the machine must be left in this condition for operation with the relay. The tape recorder is set up exactly as for recording with amplifier on, and tape transport on forward. The relay merely starts its motor to move the tape.

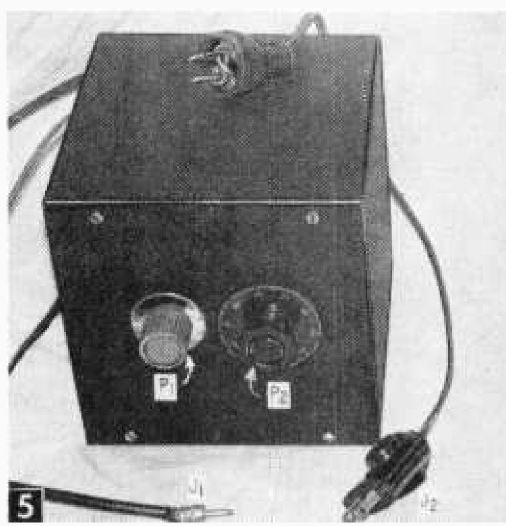
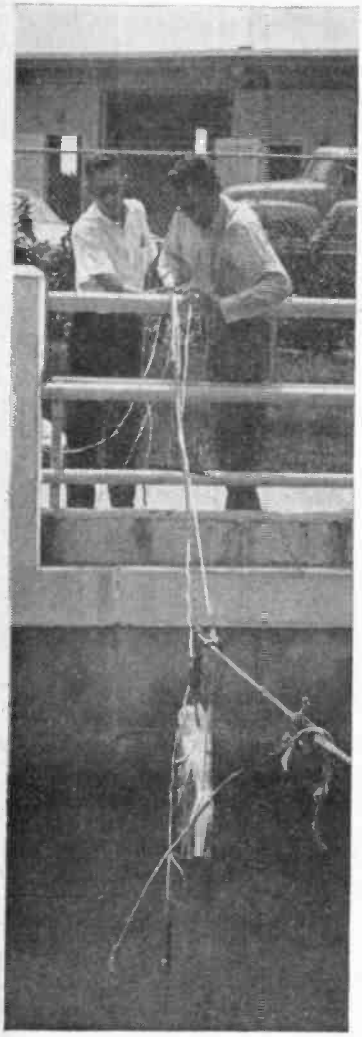
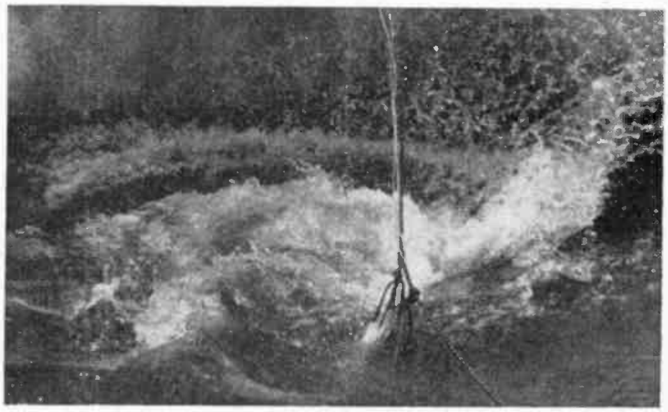


Fig. 5: Front view of the completed unit. Only two wires are used, one for signal and one for power. P1 controls the sensitivity of the unit, P2 the time delay.





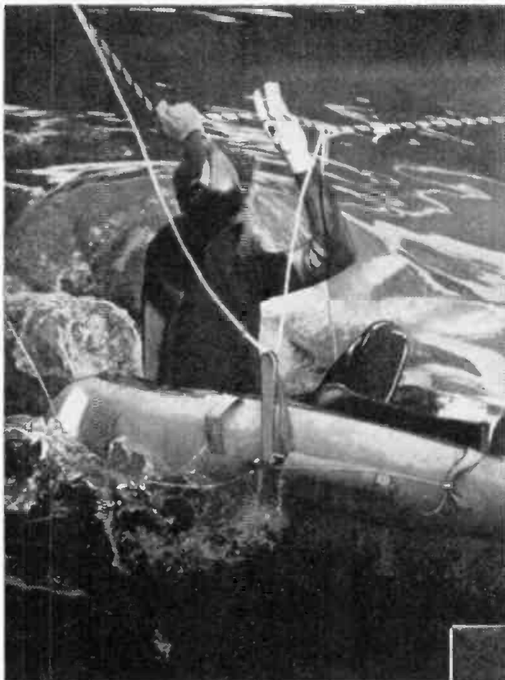
These are pictures taken in a shark channel test at the Miami Seaquarium. A fish is hung out over the channel, lowered, and the sharks collect. The second shot shows a shark circling in for the kill. In the final picture, just as Hicks pushes the button, one shark leaves—fast. Even though he was ready to chomp, he left without taking a single bite. Sharks, the Hicks have found, when hit with the repeller's electronic waves, open their jaws and release what they're about to devour.

Electronic SHARK SHOCKER

SHOCKED sharks skitter away or die if they're attacked by the low frequency impulses of a transistorized shark repeller, now being tested for the U. S. Armed Forces. Working on the principle of the electric eel, the device upsets the shark's hunting mechanism. When it's turned on, the sharks make an immediate left turn (no one knows why the turn must be to the left) and take off. If the shark doesn't flee, prolonged exposure to the signal kills him. Inventors John and Robert Hicks, 6240 Coral Lake Drive, Miami, have already annihilated seven tiger sharks this way.

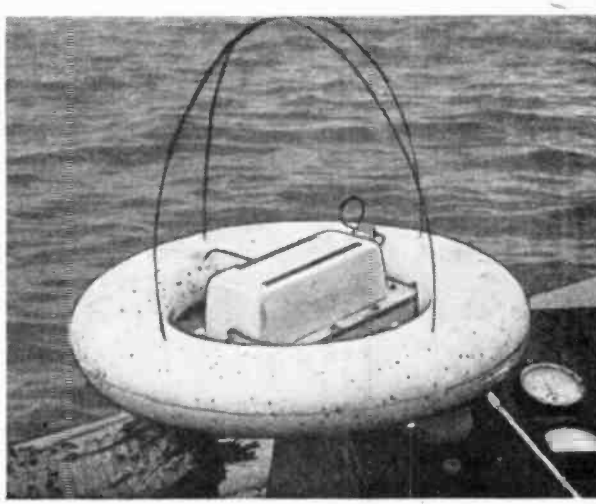
The artificial electric eel is a waterproof three-pound box which straps to a raft, space capsule, scuba diver's air tank or to a downed airman's leg. Its flexible antenna can be built into the wearer's clothing or, as in the scuba unit, the antenna folds flush with the diver's tank. Operating on special batteries, the transmitter will work for eight hours in continuous operation. Used judiciously, however, the power can last a day or more. There is only one control—an on-off switch; a deadman mechanism automatically activates the repeller on contact with water, in case the wearer has lost consciousness. In open water tests, the repeller is effective at ranges up to 50 feet in diameter.

Seven years and $145,000 in the developing, the repeller has several models, one weighing eight ounces. The scuba outfit is the only one currently in production.—D. J. CIPNIC.



Sitting safely in his little raft at the Seaquarium, John Hicks watches smugly while 50 sharks try to get at him. Whenever one approaches, Hicks pushes the repeller button, and the shark flees in a foamy fury. Without the repeller sharks would have destroyed raft and Hicks in a few minutes.

The product on model in position on a scuba tank. The on-off switch is at the bottom. Future models will have even more compact antennae. Units also carry lights which indicate if batteries have full charge.



This life ring has a repeller attached to it for rescues in shark-infested waters.

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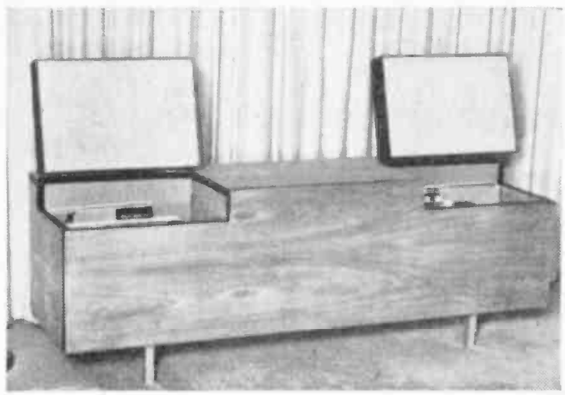
This five-foot console houses a complete stereo hi-fi system. It is small enough to fit in any living room. Cost, including speakers, is about $50.



Stereo Console

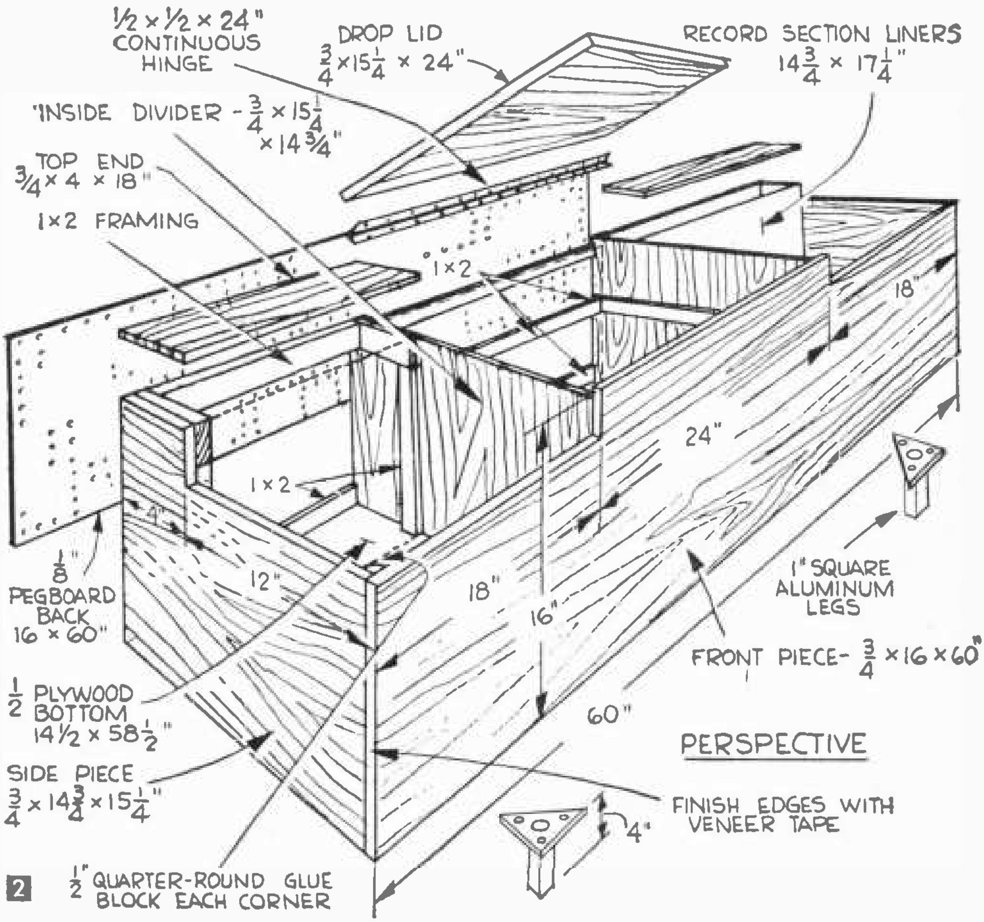
New picture-thin speaker enclosures cut cost, simplify construction

By BOB SRODON

LIMITED space in the living room of an apartment or ranch house need no longer keep you from enjoying fine stereo sound. This hi-fi cabinet takes less than 10 cu. ft. of room, yet it includes two speaker systems, an amplifier, FM tuner and full size turntable. And there is enough storage space for 100 record albums.

A circular saw is just about the only power tool needed to build this project. You could get along without that if you bought the wood pre-cut from a dealer that stocks cabinet wood. (Editor's Note: Author Srodon built the unit shown in the photos though he lives in an apartment and has no workshop space. He had the panels cut and checked for fit at a cabinet shop. Assembly was finished in the living room only with glue, clamps, hammer, a hand drill, and hand saw.)

The console is a bargain when you compare cost with most designs. You can build the complete unit including both speakers for less than $50, a fraction of the cost of manufactured cabinets. One important money saving



2

feature is the use of two unusual new hi-fi speaker systems which swing upward on hinges as in Fig. 1A.

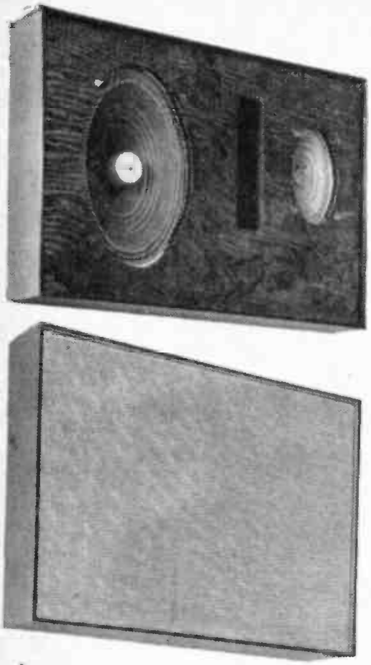
The speakers ($15.85 each, see Materials List) are supplied assembled in fine cabinet wood housings. Manufactured by Utah Electronics Corp., these speaker enclosures are intended for wall mounting, but they operate perfectly mounted in this cabinet design. The speaker enclosures (Fig. 3) measure 12 in. high, 18 in. long, and only 3 in. deep. Yet they produce a full tonal response from 70-80 cycles up to 16,500 *cps*, at the rated 8 watt output.

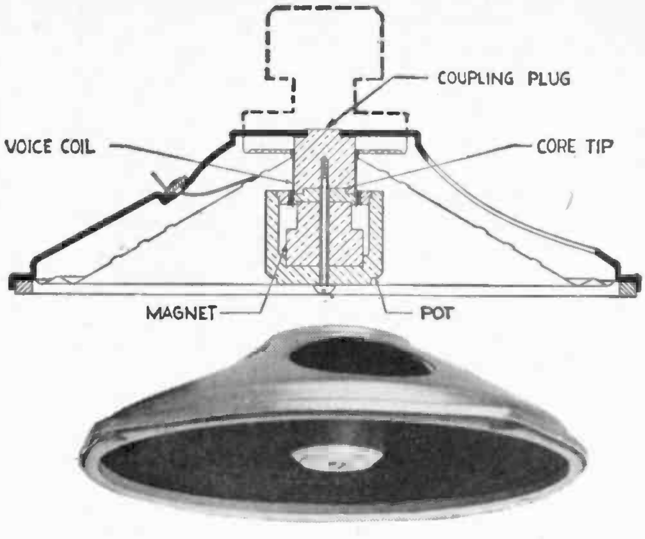
Each speaker enclosure houses a 6x9-in. woofer mid-range speaker, a 3x5-in. cone tweeter with 2,000 *cps* electrical crossover, as well as a tuned bass reflex port (Fig. 3). Using these speakers, or their equal, means that the toughest part of a home hi-fi project, the speaker mounting, can take advantage of factory engineering and assembly.

Begin Construction by cutting the walnut-veneer core stock to size. You must have a fine-toothed table saw blade, 10 to 15 teeth per inch, to avoid splitting the veneer. Protect the finished surfaces with cardboard or paper while the project is in process.

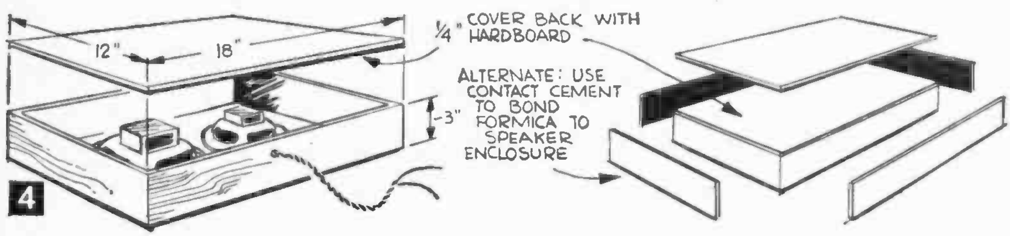
Butt joints throughout simplify construction. Though this may be your first furniture project, you should be able to get perfect corners with no difficulty. Glue the side pieces to the cabinet front, with *Elmer's* (or equal) woodworkers glue. Use ½-in. quarter-round glue blocks on each inside corner. Also glue and block the inside divider pieces in the same way. Then clamp the back corners of the unit and cut 1x2-in. framing lumber to fit the back. These 1x2-in. pieces give the cabinet additional strength and also help to keep it lined up square while the glue sets.

Install the divider section tops next. Use 1x2-in. wood strips inside the divider sections (Fig. 2) glued and screwed in place. Fit additional vertical 1x2-in. strips vertically to form a fastening surface for the ⅛-in. tempered hardboard used to line the rear of the record compartment.





3 Dotted line indicates structure of standard speaker. New thin-speaker design uses magnet inverted within cone. Sound quality is equivalent. Enclosures can be ordered in mahogany, blonde, or walnut finish. Impedance is 8 ohms.



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Now Plan the Equipment compartment. The unit shown in the photos was equipped with new models of *Knight-Kit* transistor components. A 40-watt amplifier, FM multiplex tuner, and a full size turntable fit neatly into the space. The tuner and amplifier backs rest on the cabinet bottom. Draw outlines of your equipment full size on a sheet of tracing paper, and transfer to the 3/4-in. walnut wood core equipment mounting board.

Use a keyhole or sabre saw to cut the equipment wells. Fas-

MATERIALS LIST—COMPACT STEREO CONSOLE

Amt. Req.	Size and Description	Use
1 pc	3/4 x 16 x 60" walnut veneer wood core	front
2 pcs	3/4 x 15 1/4 x 15 1/4" walnut veneer wood core	side pieces
1 pc	3/4 x 15 1/4 x 24" walnut veneer wood core	drop lid
2 pcs	3/4 x 4 x 18" walnut veneer wood core	top ends
2 pcs	3/4 x 15 1/4 x 15 1/2" walnut veneer wood core	inside dividers
2 pcs	1 x 2" x 8' lumber	framing members
1 pc	1/2" x 10' quarter round	corner strengtheners
1 pc	1/8 x 16 x 58 1/2" pegboard	back
1	1/2 x 16 x 60" plywood	bottom
1	1/8 x 14 3/4 x 22 1/2" tempered Hardboard	center liner
2	1/8 x 14 3/4" x 17 1/4" tempered Hardboard	record section liner
1	3/4 x 15" x 24" walnut veneer wood core	equipment mounting board
1	24 x 36" plastic laminate	speaker covering
2 ea.	"Utah" Picture Thin two-way speaker systems. Available Allied Radio, 100 N. Western, Chicago 80, Ill. Cat. No. 57DX503, $15.85. Size 12 x 18 x 3".	stereo speakers
1	1/2 x 1/2 x 24" brass-plated continuous hinge with screws	drop lid hinge
2	1/2 x 1/2 x 18" brass-plated continuous hinges with screws	speaker hinges
4	1 x 1 x 4" steel or aluminum legs	cabinet legs
2	1 x 6" drop lid supports	drop lid
2	1/4 x 12 x 18" tempered Hardboard	speaker backs
48	#7 x 3/4" wood screws	inside liner and back fasteners
48	#7 x 2" wood screws	cabinet fasteners
1	3/4" x 8' roll walnut veneer tape	finishing edges
1	Knight model KN-1000 turntable and pickup arm	
1	Knight model KN-400-B transistor 40 watt amplifier	
1	Knight model KN-250-M transistor FM-Multiplex Tuner (Knight equipment available at Allied Radio, 100 N. Western Ave., Chicago 80, Ill.)	

ten 1x2-in. strips to the inside of the equipment section to form supports for the equipment mounting board. Be sure there is enough clearance for the maximum height of the components, as well as for proper seating of the drop lid top. Cut and trim the ½-in. plywood bottom panel, to fit, and fasten to the bottom framing members with 1½-in. finishing nails and glue.

The Speaker Cabinets will require back covers made of ¼-in. tempered hardboard cut to fit the 12x18-in. dimensions. Before you glue the backs in place, wire the speaker leads and extend through the cabinet. The speaker backs may be painted, or you can cover with a plastic laminate as in Fig. 3. For good edges, plastic laminate must be cut to size with a sharp razor knife and the edges finished with a fine file. To fasten the laminate to the cabinets, use contact bond adhesive, such as *Weldwood*.

Fasten the ½ x ½ x 18-in. brass plated continuous hinges to the backs of the speaker cabinets and position each unit carefully on the cabinet. A proper fit of the speakers depends on the accuracy of the hinge position. After the speakers are hinged in position, trim the center drop lid to fit, attach the 24-in. hinge to it, and fit to the cabinet.

Mount your hi-fi equipment on the ¾-in. board, position, and fasten the completed assembly. Wire in the ground, antenna, and speaker connections. Then fasten the ⅛-in. tempered hardboard cabinet liners into place with ¾-in. x #7 *fh* wood screws. Fasten the ⅛-in. pegboard back in the same way.

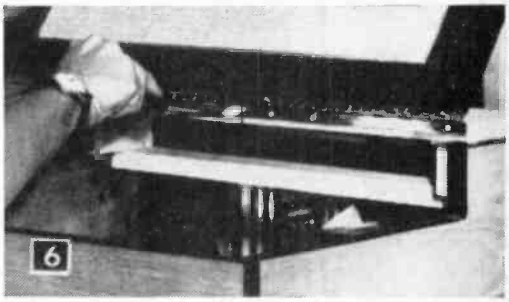
You can treat the exposed edges of the walnut veneer core wood either by finishing with matching ¾-in. wood veneer tape, or by sanding the edges and painting with black lacquer.

Final finishing is the last step, and the most important for a professional looking job. Sand all exposed wood areas with a 4/0 finishing paper until smooth. Fill nicks or scratches with appropriately colored plastic wood.

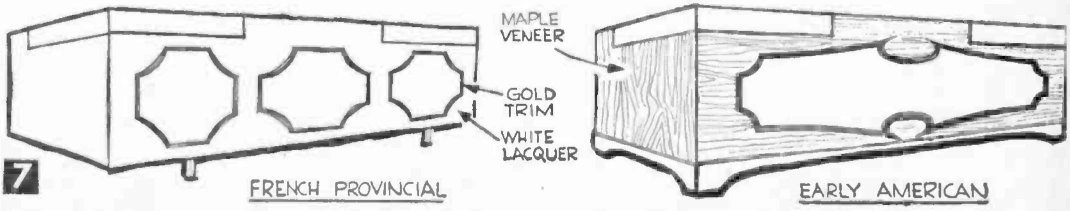
A natural linseed oil finish was applied to our walnut cabinet (Fig. 1). There are many linseed oil finishes on the market that will do the job. But be sure to follow the manufacturer's recommendations exactly. If a tougher surface is wanted, use several coats of clear lacquer instead, sanding with No. 00 sandpaper and steel wool between coats.

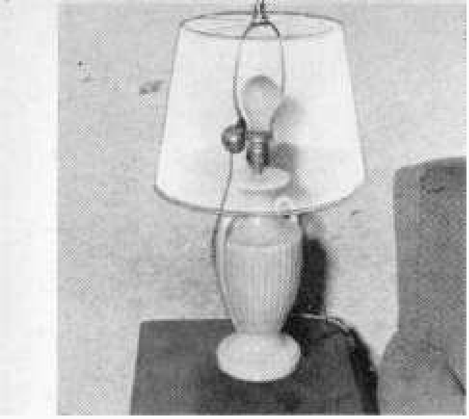
Customize the cabinet by adding appropriate moldings and trim as in Fig. 7.

Turntable, transistorized Knight-Kit stereo FM tuner, and 40-watt amplifier fit in center section. Chassis rest on cabinet bottom; are framed with quarter round.



The hinges must be set in just the right spot so the speakers will fit. Trim and fit center drop lid last.





Transistorized Amplifier

By HAROLD P. STRAND

FIG. 1: Conceal the microphone under a lampshade and run the wire behind the lamp. Connect the wire to your amplifier and you can "listen in."

THIS one-evening project is easy to assemble and can provide many hours of fun and relaxation. It can, as you will see, serve a very practical purpose in the home and shop as well.

The Amplifier Is Assembled on a perforated phenolic board. Flea clips are used to facilitate connections. Follow the pictorial diagrams (Figs. 4 and 5) for approximate parts locations and mount the major components, such as transistor sockets, transformer and solder lug. Proceed with the wiring, following the schematic diagram (Fig. 3) and the pictorial diagrams (Figs. 4 and 5). Be sure to allow ample slack for the wires to the components that will mount on the chassis box.

Figure 6 shows the hole-cutting pattern to be followed for the box itself. All components mount on one side, for ease of access.

Use thin fiber washers or shoulder washers to insulate the magnetic phone jack from the box. Cement the washers to the box with ordinary household cement.

Mount the two brackets to the circuit board and carefully install the board into the box, first guiding the extended lead switches and jacks to their proper locations. When they have been made fast, attach the board to the sides of the box by means of the mounting brackets. The battery holder is then fastened to the bottom inside of the box, and the battery is installed.

Using the Unit. The amplifier provides for either high or low impedance inputs. Plug a phonograph into the appropriate input jack, and connect a magnetic earphone to the output. Start the phonograph and turn the switch of the amplifier on, with the volume turned down. Slowly rotate the volume control, and you will hear the music, though nobody else will! You can check the amplifier circuits of various types of radios, simply by connecting the input of this little helper to the center tap of the radio volume control! (If you hear the radio on the earphone, but not through the radio's speaker, you have amplifier troubles in the radio!) Other uses will surely suggest themselves to you, but here are a few applications that you can play with. Connect a musical instrument pickup to the low-level input, and you can practice your electric guitar to your heart's content without disturbing any of the family or neighbors.

In the electronic lab, the unit finds additional uses. If you are checking any audio signal source, such as a tape player, FM or AM tuner, or phonograph, all you need is the suspect instrument and this amplifier. No need to lug the entire hi-fi system into the lab!

You'll have fun building this project, for it is a simple one. It will reward you with many more hours of fun and practical use at home.

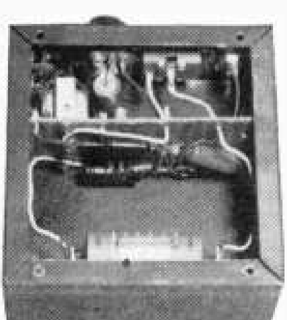
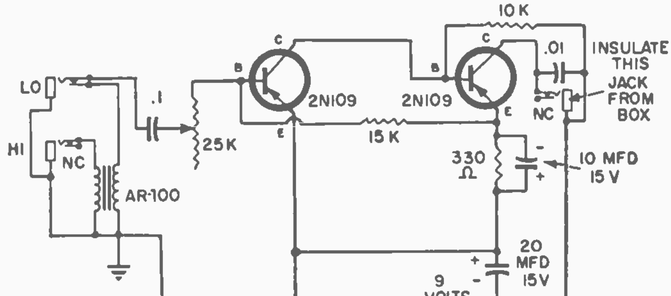
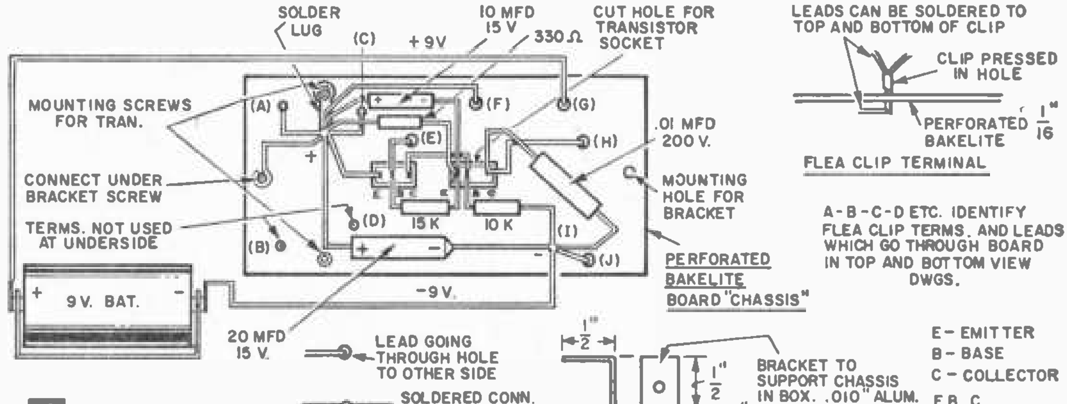


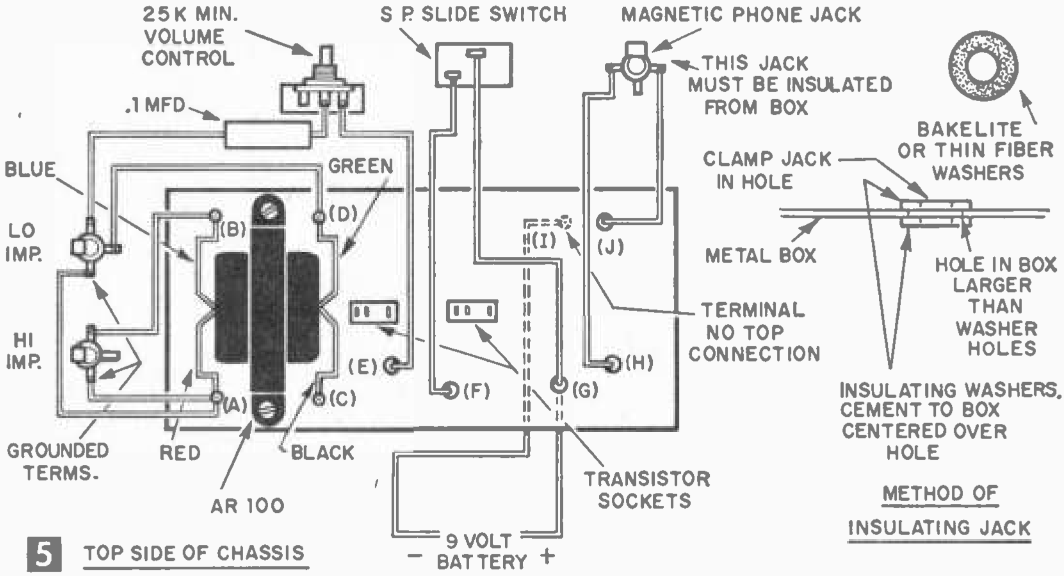
FIG. 2: With cover removed, you can see the placement of component parts. While placement is not critical, avoid short circuits.



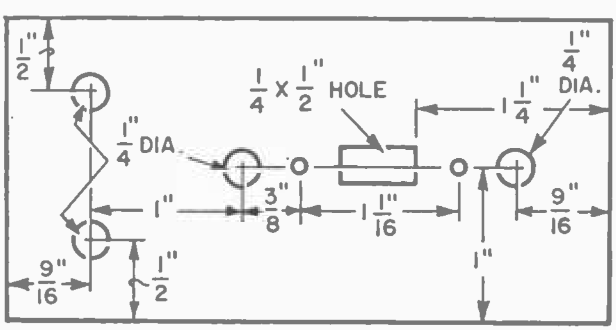
3 SCHEMATIC



4 UNDERSIDE OF CHASSIS



5 TOP SIDE OF CHASSIS



6 HOLE LAYOUT IN TOP OF BOX

Materials List—Transistorized Amplifier

Amt. Req.	Size and Description
1	4x4x2" metal utility cabinet
2	2N109 transistors R.C.A.
1	Argonne transistor transformer, #AR-100
2	transistor sockets #MS-275
1	20 mfd, 15 v CF-123 miniature electrolytic capacitor
1	10 mfd, 15 v CF-122 miniature electrolytic capacitor
1	.01 mfd, 200 volt paper capacitor
1	.1 mfd, 200 volt disc ceramic capacitor
1	330 ohm, 1/2-w carbon resistor
1	15,000 ohm 1/2-w carbon resistor
1	10,000 ohm 1/2-w carbon resistor
1	slide switch, single pole, single throw
3	miniature jacks and plugs MS-370
1	25,000 ohm volume control, VC-24
1	miniature knob MS-185
1	9-v battery, Eveready #226
1	battery holder to suit
1	perforated phenolic board MS-305
1	pkg flea clips MS-263
1	lapel microphone PA-9
1	earphone MS-260

* All parts available from Lafayette Radio Electronics Co., 111 Jericho Turnpike, Syossett, N. Y.

Junior Op-Orater

Whoever said "Many Hands Make Light Work" did not mean to include youngsters in your electronics lab...

By WILLIAM J. RYAN

ASK any ham what a junior op is, and he'll tell you, depending on his own family relations that it's either a small child, or a pesky younger brother. Take a look around your ham shack, or workshop. Actually, the very same dials, meters, lights, switches and buzzers that so fascinate you, also fascinate your own Junior Op. It seems that none of the "Hands off" signs, or the verbal warnings will help. Even an occasional warming of the bottom is sometimes weighed by the Junior Op as a modest price to pay for play.

This device is a compromise. You give him this to play with, and he leaves your toys alone! It has many distinct advantages. It is inexpensive, it is easy to build, and in addition to being decidedly interesting to any tyro technician, it is educational.

The unit contains a telephone dial to spin, a knob to twirl, a public (?) address system, switches to press, lights to flash, and a buzzer to buzz. Operating from an ordinary lantern battery, it is also quite safe.

House the unit in an old record player box, or construct one from plywood. The dimensions are not critical. Cut a plywood panel to fit the top of the box, and mount the components on this. Drill the necessary holes for the speaker, and mount the speaker beneath these holes. The public address system is simply a carbon microphone modulated PM speaker. Rewire the switch circuit to open the circuit when the switch is not depressed. This will save a good deal of battery replacement.

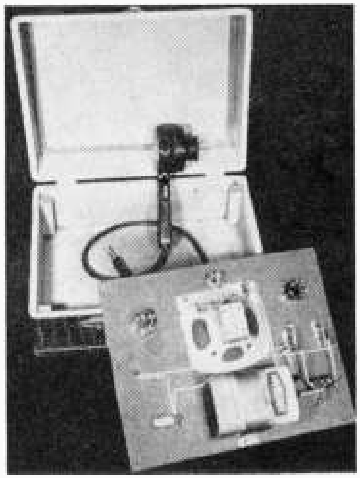
Mount an octal tube socket on the face of the unit, and plug in an old metal tube. Metal tubes can withstand far more abuse from little hands than glass. Be sure too, that the switches used to activate light and buzzer circuits are of the momentary contact type to avoid useless battery drain. If you also wire the bulb in series with the dial contacts, the light will flash when the dial is turned.

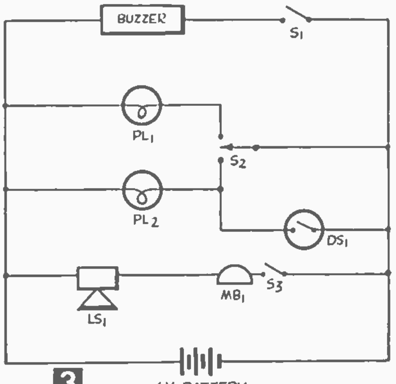
Finish the job by attaching the panel tightly to the case with wood screws. Make sure that a handle is provided for easy portability. Kids love to lug these things around!

Give a kid his own electronic equipment to play with and the chances are he'll leave yours alone. There's enough action here to keep any youngster happy.

MATERIALS LIST—JUNIOR OP-ORATOR

Desig.	Size and Description
S1	SPST switch, momentary contact, push button (Allied Radio #34B161)
S2	SPDT switch, momentary contact, center off (Allied Radio #34B388)
MB1, S3	modified surplus T-17 carbon microphone
LS1	3.2 ohm PM speaker
PL1, PL2	#46 or #47 pilot lamps and holders
DS1	surplus telephone dial (Olson Electronics)
	6-v lantern battery, record player case, plywood panel to fit.





3

There's no complexity to the wiring. Make sure that all components are tightly attached to the panel for safety!

Chairside Hearing Aid

Many people who are hard of hearing spend lots of time indoors in fixed positions . . . At desks, work tables, or just sitting: AC operation eliminates the problem of battery drain and replacement

By HAROLD P. STRAND

FIG. 1: Plugged into an ac receptacle, this hearing aid drains no batteries while being used. Ideal for the hard-of hearing while in fixed positions in chairs, at desks, or confined to bed.

THOSE who are hard of hearing and wear a hearing aid will find this of great value. It is to be used when in a fixed location such as the living room, joining in conversation or listening to the TV or radio. It can also be used effectively while listening to the programs in bed. It saves batteries used in portable hearing aids which run down quickly.

We use a built-in battery much larger than a hearing aid type which should last for two or three months. It can be plugged into the 115-volt line and use no battery power at all. This is done by a miniature dc supply which converts the 115-volt ac power to a low dc current for operating the circuit. Since the circuit requires only about 2 ma, either system needs very little current. The power supply is well filtered so there is no hum or other objectionable noise. Two transistors are used in a very stable and effective circuit with a crystal microphone. A small ear phone, simi-

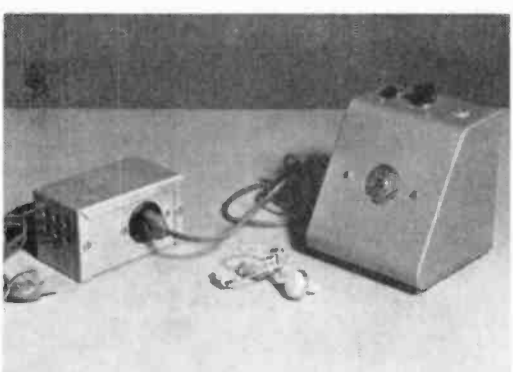


FIG. 2: The complete equipment. The small power pack can be placed on the floor near an outlet. A built-in battery pack permits the user to disconnect from the supply. While not miniature, it is portable on batteries.

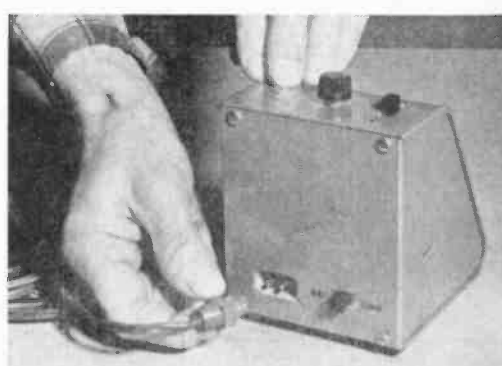
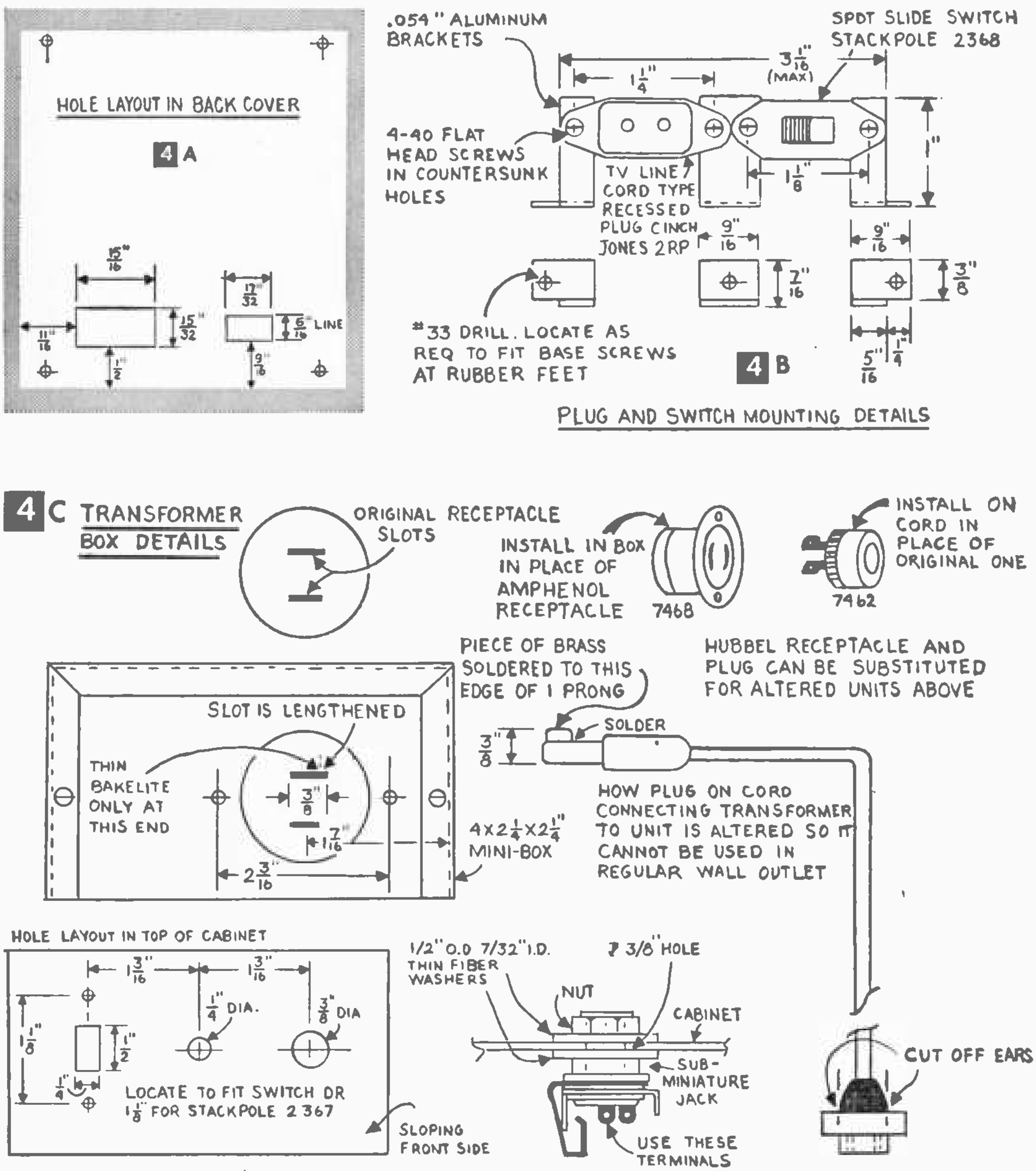


FIG. 3: A recessed TV plug connects the unit to the power supply. The slide switch permits the user to select modes. You can choose ac line operation by sliding the switch right, or battery (built-in) by sliding switch left.

lar to a hearing aid type, transmits the sound to the ear. If the use is not too extensive or continuous, battery power will be found the most convenient, as you can pick up the unit and carry it around the house with you. When you want to listen to long TV programs or you plan to stay in one place (as in the case of an invalid) use the 115-volt power and there will be no battery drain at all. A small step-down transformer together with a 2-ampere fuse is placed in a 2¼ x 4 x 2¼-in. metal box with a line cord. The box is placed on the floor near the outlet and since it is small, can be left there ready for use. To employ the



4 D METHOD OF INSULATING JACK FROM CABINET. PLIOBOND-CEMENT FIBRE OR BAKELITE WASHERS CENTERED OVER 3/8" HOLE IN CABINET

line power, plug in the separable cord which connects the transformer to the unit, push the slide switch to LINE and push the top switch to ON and it is ready for use. Power can be transferred to either line or battery at any time by sliding the control switch to the position desired.

The transformer is mounted in a box away from the unit as it was found that when contained in the main box the 60-cycle hum would be picked up by the sensitive microphone.

A volume control and a jack for plugging in the ear piece are provided on the top of the box. If for no other reason, this piece of equipment is handy in an emergency when the regular hearing aid is out for repairs or you run out of batteries. We do not mean to imply that our device will replace your professionally fitted hearing aid. That is indispensable for normal use, but ours can be of great aid in saving your regular batteries when used under the conditions stated.

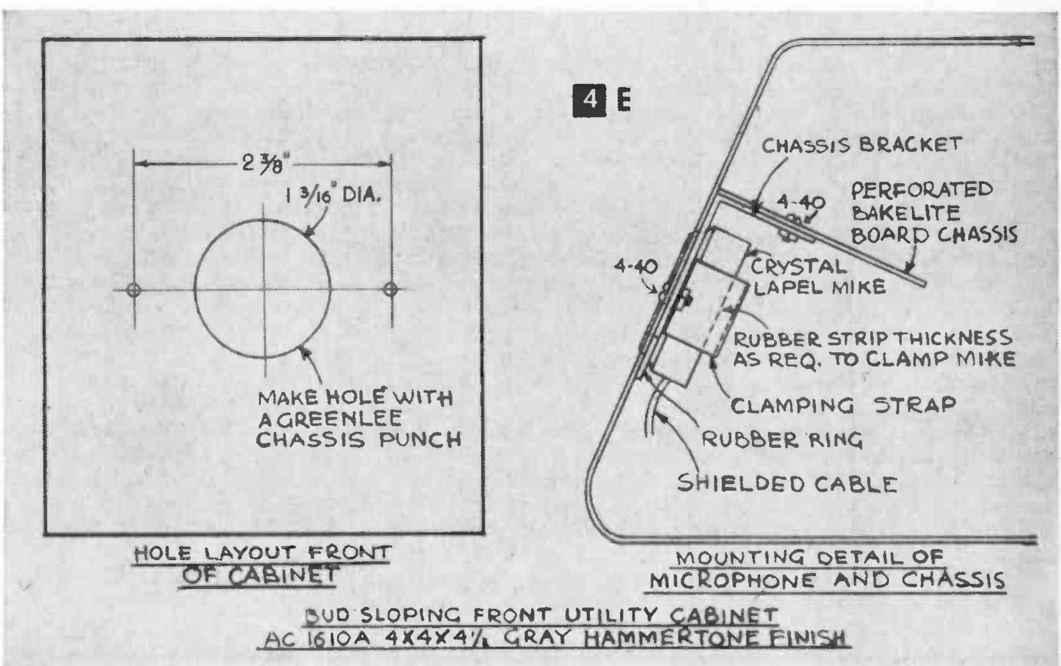
Figure 1 shows the unit in use. Tests made with several persons having a hearing deficiency indicated that it has a quality of tone acceptable to most people. One test was made on a woman who had zero hearing in one ear and only 20% in the other. She reported that it allowed her to carry on a normal conversation with other persons and she could listen to TV programs with the set at an average volume, locating her chair about 6 ft. from the set.

The complete equipment is illustrated in Fig. 2. The main unit and transformer enclosure are shown. The cord connnecting the two units is plugged in and the small ear piece is shown on the table. You can obtain a plastic piece which fits in the ear more securely than the soft rubber supplied, and will fit on the receiver in place of the rubber piece. The microphone is an inexpensive lapel type with a chrome front grille which can be seen in the opening of the cabinet. It is mounted in rubber to reduce unwanted noise.

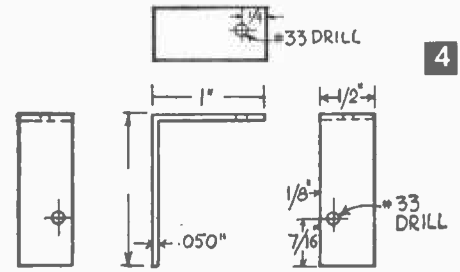
When using battery power only, the small metal box and ear phone are all that will be required. Figure 3 shows how the connecting cord is plugged into the TV type line receptacle. An SPDT slide switch is located at the right and switches from line to battery power. The top controls consist of a phone jack at the left, the volume control in the center and the on-off switch at the right. All components are attached to the main body of the cabinet so that the back cover with its sides can be easily removed without any connecting wires.

Construction: The aluminum box is drilled and the required rectangular holes cut out to accommodate the slide switches and the line receptacle at the back (Fig. 4). Mark these holes carefully, then use a drill to make a series of holes within the marked lines. Small diagonal pliers can then be used to break out the material between the holes. Use a small flat file to dress them to shape and size. It would be well to check the locations of the rectangular holes given in the drawings with the spacing of the slide switch and line re-

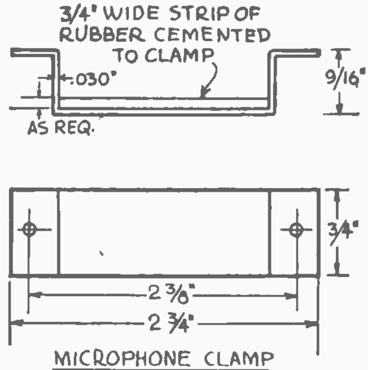
4 E



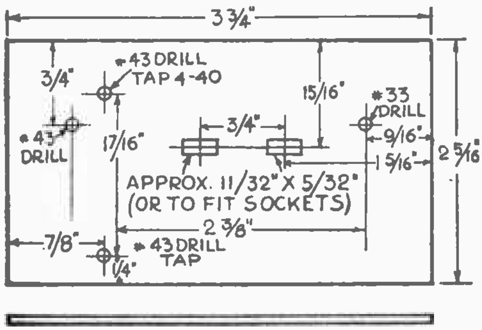
4 F



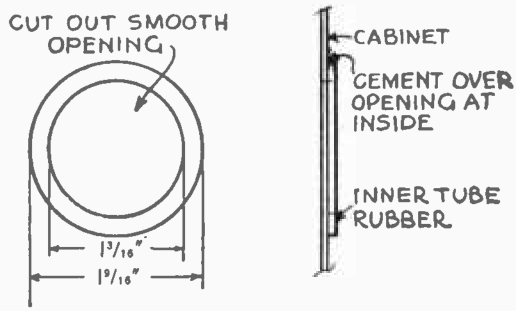
CHASSIS BRACKETS 2 REQ.
1/2-HARD ALUMINUM



MICROPHONE CLAMP
1/2-HARD ALUMINUM



PERFORATED BAKELITE CHASSIS
FLEA CLIPS PRESSED IN HOLES AS REQUIRED

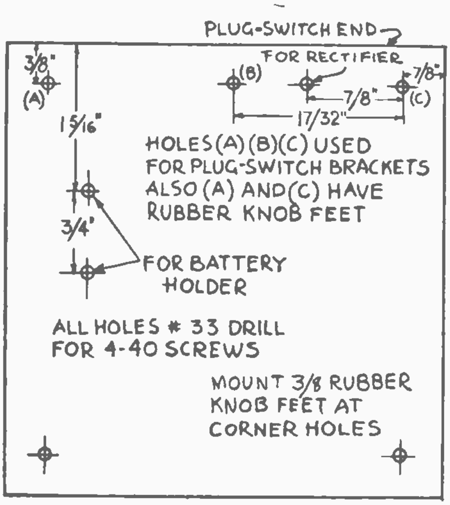


RUBBER MOUNTING RING
FOR MICROPHONE

ceptacle which are mounted on brackets, to make sure they will match.

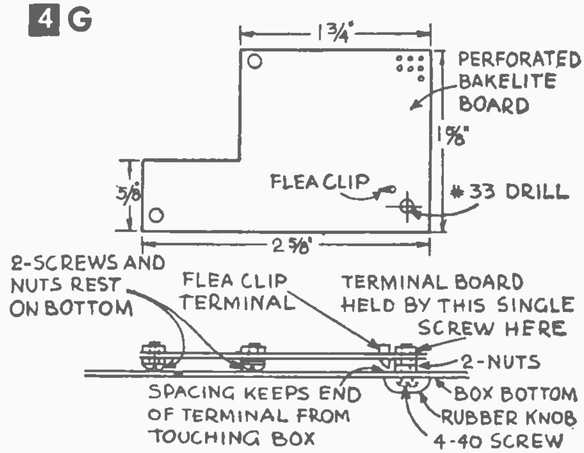
The transistor chassis consists of a piece of perforated Bakelite board which is supported on two aluminum angle brackets to the front of the box. The same screws and nuts are used for the microphone clamp. An input transformer matches the high impedance of the crystal microphone to the low impedance of the transistor circuit. Miniature sockets are used for the transistors which are secured in rectangular holes cut in the Bakelite board. Flea clips provide suitable terminals for wires and leads which join in soldered connections. Use subminiature #28 high temperature wire (Alpha #407-A) for all the chassis wiring. The 0.1 capacitor, connecting one side of the transformer secondary to the arm of the volume control, is located at the top of the chassis. All the other capacitors and resistors are located at the under side, making connections with solder to the projecting ends of the clips and socket terminals. Leads going to the top switch, the rectifier section and battery terminals are #24 plastic covered stranded wire.

The unusual circuit (Fig. 12) provides surprising gain without distortion and uses two RCA 2N109 transistors. Make all connections correctly and avoid unnecessary solder which might run down between some of the closely spaced terminals to cause a short. Watch the polarity of the electrolytic capacitors carefully to make sure they are correctly installed with respect to their plus and minus ends. Also, take care to see that the transistors are properly connected. The socket pin that is widest spaced from the others is the collector. The one in the center is the base and the other is the emitter. Be sure to get the polarity of the voltage from the battery and that from the power supply correct. Reversed polarity will not allow the circuit to operate at all and the transistors may be ruined. To mount the mike, cement a disk of rubber inner tube, with a 1 1/16 in. inside diameter with Pliobond cement at the back of the cabinet opening. Cement a piece of soft rubber 1/8 in. thick 3/4 in. wide to the back of the supporting strap. Remove the swivel found at the back of the microphone. Apply cement to the facing side of the rubber ring. The chassis, which was prewired, is placed against the cabinet and then the strap is mounted. This holds the microphone in and the screws and nuts used to hold the assembly in place. The dimensions of the supporting strap may have to be adjusted to get a secure fastening of both the chassis brackets and the microphone. The mike should be centered in the opening. After the



HOLE LAYOUT IN BOTTOM OF BOX

4 G



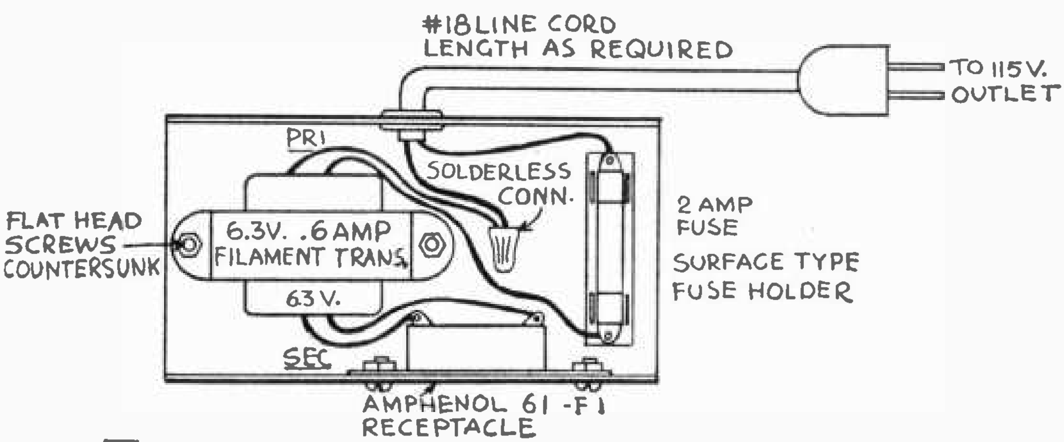
TERMINAL BOARD FOR FILTER CAPACITORS

chassis is in place, make the connections to the jack, volume control and the switch at the top of the cabinet.

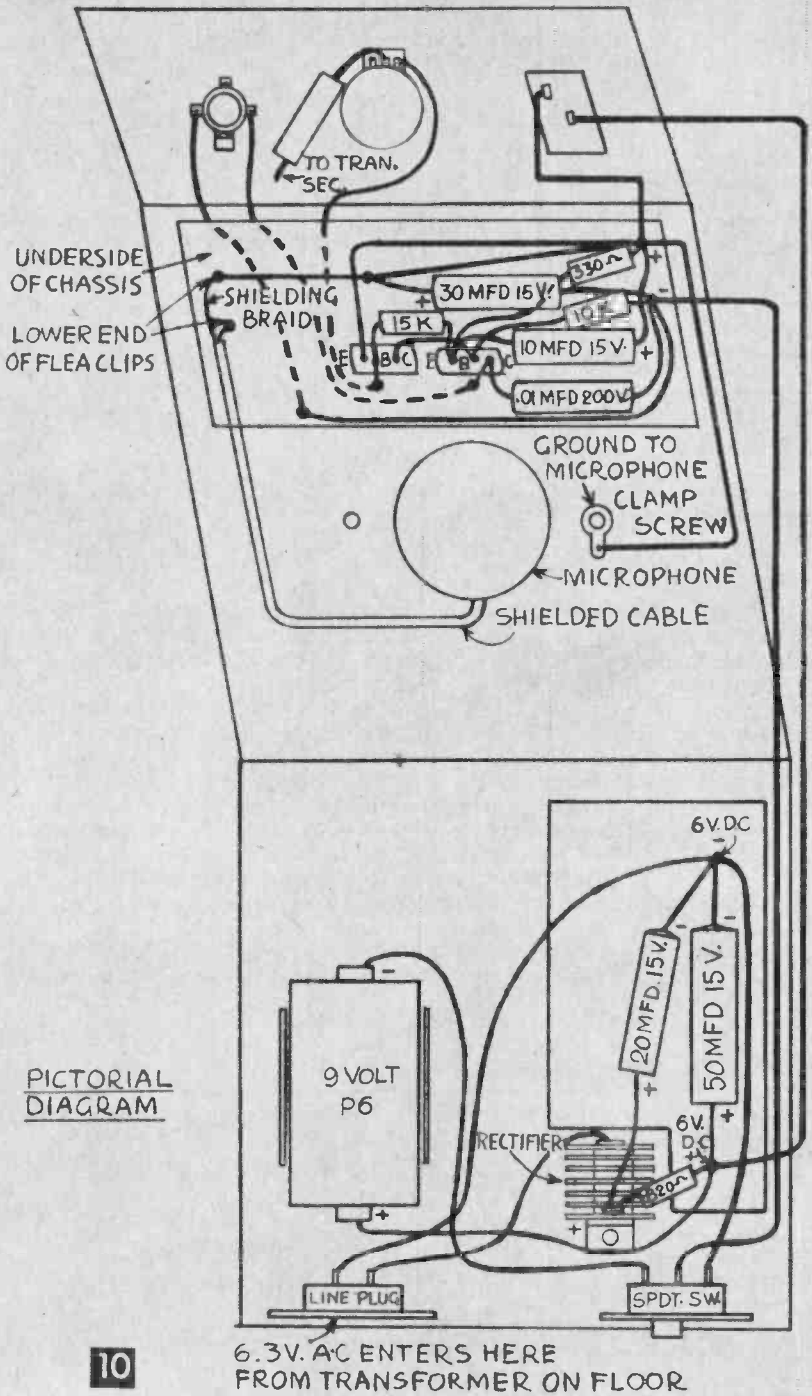
Leads are carried down to the power supply and the battery for connections at the bottom of the box. Use a piece of the Bakelite perforated board with flea clips for mounting the filter capacitors. Drill a hole in this piece to secure one corner with a nut to one of the screws used for the rubber feet. Use two extra nuts on the screw to give about 3/16 in. spacing from the metal box bottom. Support the other end of the piece away from the box the same distance by using screws and nuts as detailed in the drawings. This prevents the lower ends of the flea clips from shorting to the box.

Use a half-wave rectifier of about 65 ma as the first stage in rectification from ac to dc. The filtering consists of an 820 ohm resistor with a 20 and 50 mfd. capacitor connected as shown in the wiring diagram. Mount the rectifier to the cabinet bottom with a small bracket, screw and nut. Support the battery in a spring clip formed from a piece of thin, hard brass and attach it to the cabinet. Provide supports for the recessed line receptacle and the SPDT slide switch with three bracket pieces. Secure the cabinet bottom to these with screws and nuts. The ears of these two parts have their holes countersunk so that flat head screws can be used, which clamp them with nuts to the brackets.

Figure 5 shows a view from the power supply end. The wires which run alongside of the capacitor are neatly bundled together and held with two narrow bands of adhesive tape. The terminals of the back slide switch and the recessed receptacle are easily accessible for connections. The polarity of the rectifier is important. The plus end is marked and this should connect to the plus end of the 20 mfd.



9 WIRING INSIDE BOX



PICTORIAL DIAGRAM

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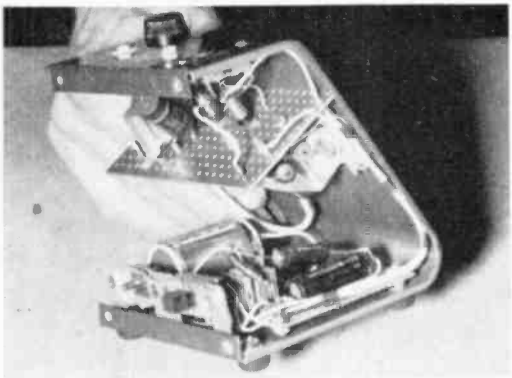


FIG. 5: Inside the unit from the rear. Note the mounting of the dry rectifier and the capacitors in the filter system.

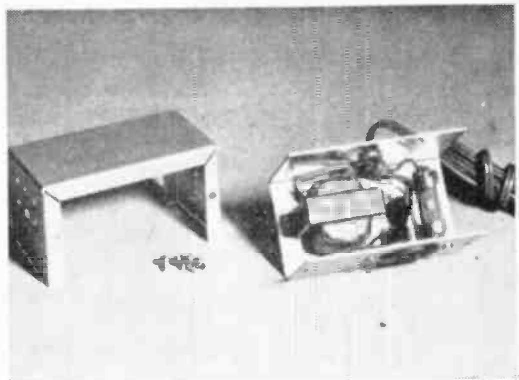


FIG. 6: Looking into the power supply box we see the transformer, line fuse and the modified receptacle.

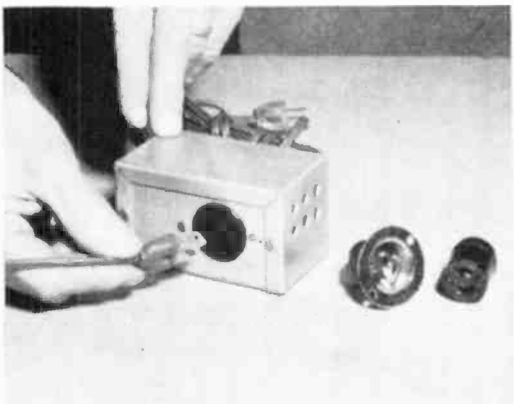


FIG: 7. The plug on the cord from the hearing aid to the supply is widened by soldering a piece of brass to one leg. This prevents you from connecting to a live outlet.

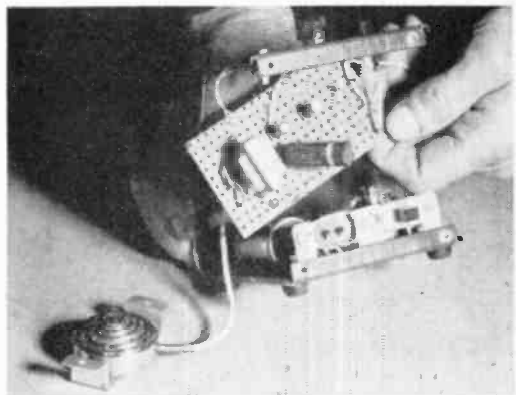
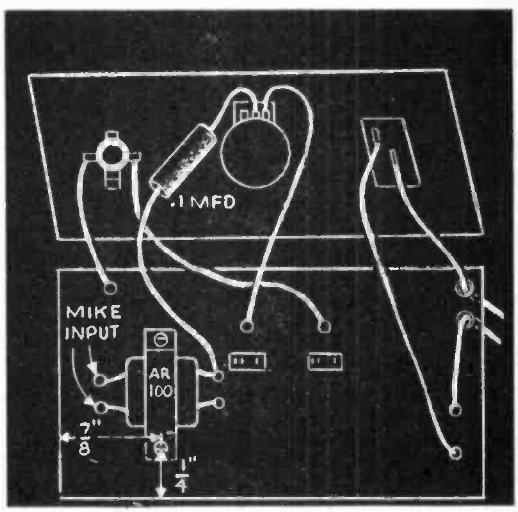


FIG. 8: With the case opened and the chassis removed, we see parts on the perforated Bakelite board. Note that all parts mount on case to facilitate opening.

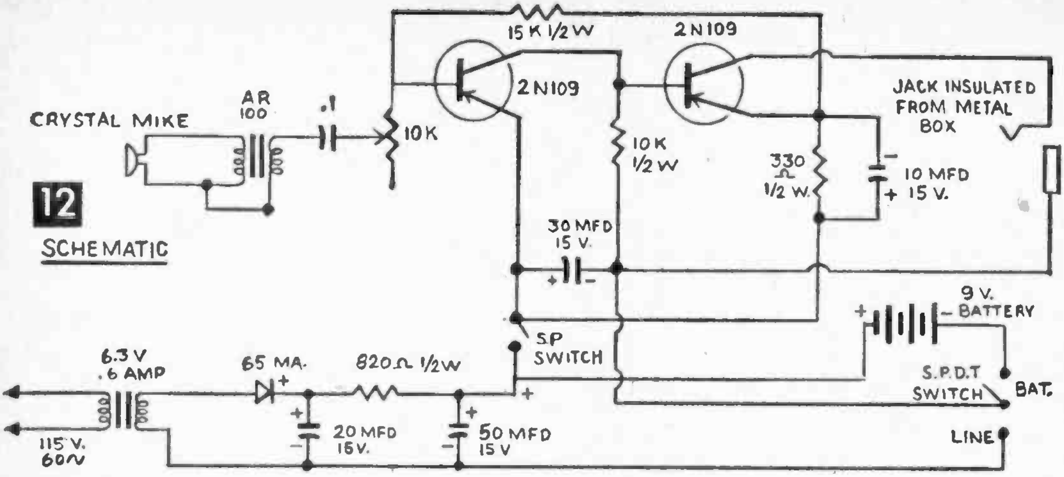
capacitor and to one end of the 820 ohm resistor, as shown in the diagram.

Figure 6 is a view of the open transformer box to show the placement of the parts. If there is a wall receptacle near the chair where the unit will be mostly used, you can use a short line cord and leave the box plugged in, placed on the floor near the receptacle. Otherwise, use a standard length of 6 ft. to reach the wall receptacle, as shown. Drill holes in the box for ventilation though in normal use there should be little temperature rise at the transformer.

In Fig. 7, the altered plug on the connecting cord is shown which will prevent its use in a standard wall receptacle. Solder a small strip of brass to the side of one of the prongs. Lengthen the wider of the two slots in the Amphenol receptacle with a small, thin file so the extra width prong will fit. Installing the receptacle with the wider slot at the top, you can file the slot at the right side with only about 1/16 in. of Bakelite to encounter.



11 TOP SIDE OF CHASSIS



Another method is to use one of the special receptacles and matching plugs, such as a Hubbell 2-wire, miniature twist-lock type #7468 receptacle with mounting flange and #7462 plug cap to fit. To use this method it is necessary to cut off the original molded-on plug which comes with the line cord and attach the new one. Mount the receptacle in the box in the approximate location shown for the Amphenol receptacle, making a hole to suit the receptacle body and drilling holes for the mounting screws to suit.

Construction of the equipment described will present no difficulties to the experienced electronic technician. The electrical experimenter who is used to working with small parts and electronic wiring will be able to complete the job satisfactorily if care is taken to follow the plans carefully. The total cost for parts and materials for building this unit operating from a battery only will be around $15. To operate it on either battery or line power, the additional parts will cost about $5. These parts include the filament transformer, receptacle, fuse and fuse holder and metal box with two line cords, as well as the rectifier and filtering components which will not be required for battery operation only.

MATERIALS LIST—CHAIRSIDE HEARING AID

Amt. Req.	Size and Description
1	crystal microphone Argonne AR-53
1	subminiature jack, MS-282
1	subminiature plug, MS-281 (optional, plug may come on ear phone)
1	10k miniature potentiometer less switch VC-34
1	1/8" shaft miniature Bakelite knob MS-185
1	TV type recessed line socket TS-106
1	TV type line cord TS-105
1	input transformer AR-100
2	transistor sockets MS-275
2	2N109 transistors, RCA
1 pkg.	flea clips MS-263
1	perforated Bakelite board MS-305
1	30 mfd 15-v miniature electrolytic capacitor CF-124
1	20 mfd 15-v miniature electrolytic capacitor CF-123
1	50 mfd 15-v miniature electrolytic capacitor CF-125
1	10 mfd 15-v miniature electrolytic capacitor CF-122
1	0.1 mfd 200-v paper capacitor, Sprague 2EP-P10 or equiv.
1	330 ohm 1/2-w resistor
1	15k ohm 1/2-w resistor
1	10k ohm 1/2-w resistor
1	820 ohm 1/2-w resistor
1	65 ma 1/2 wave rectifier RE-50 or equiv. with plates about 11/16 x 11/16"
1	9-v transistor battery Burgess P6
1	male battery clip-on connector
1	female battery clip-on connector
1	dynamic ear phone MS-260
1	6.3-v at .6 amp sec. filament transformer Thordarson 21F21
1	2 1/4 x 4 x 2 1/4" aluminum mini-box, Bud or Premier MC-361
1	61-F1 receptacle with mounting plate, Amphenol
1	line cord with attached plug
1	3/8" hole rubber grommet
1	3AG fuse, surface fuse mount, lug terminals, Littlefuse 357001
1	2A 3AG glass fuse
4	3/8" rubber feet

The above materials can be supplied by Lafayette Radio, 111 Jericho Turnpike, Syosset, N. Y.

Also required

1	aluminum sloping front utility box, gray hammertone finish Bud AC1610A
1	SPST slide switch 1 1/8" mounting centers
1	SPDT slide switch 1 1/8" mounting centers

Misc. aluminum for brackets, rubber from an old inner tube, 2 thin Bakelite or fiber washers for phone jack, #28 subminiature Alpha hook-up wire, #24 plastic covered stranded hook-up wire, screws, and nuts.

Electronic Photo Timer

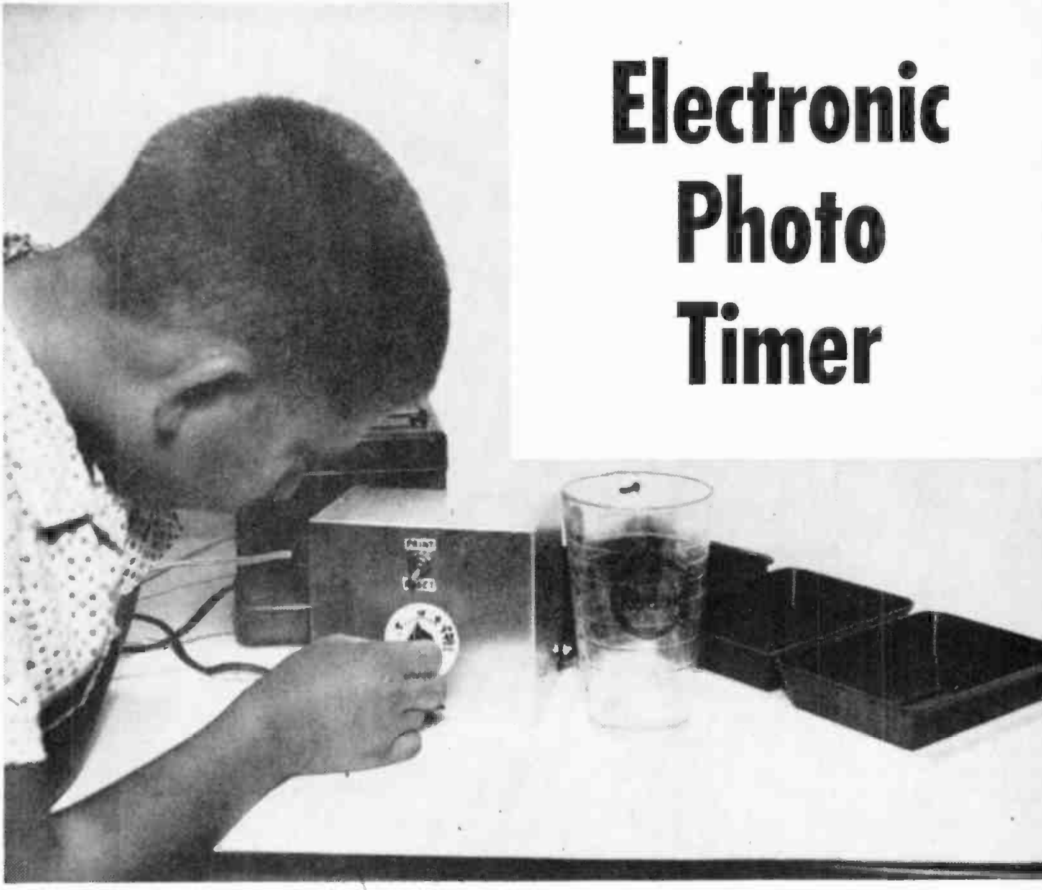


Fig. 1: The completed electronic photo timer can be operated with a contact printer in the photography lab.

By CHARLES GREEN W3IKH

ARE you one of the many photo enthusiasts who develop and print their own pictures by rule of thumb? Here is an easily constructed photo timer that will enable you to accurately control exposures on enlargers and contact printers. Once you have found the right setting for a particular print, the electronic photo timer will enable you to repeat the timed intervals as often as you wish.

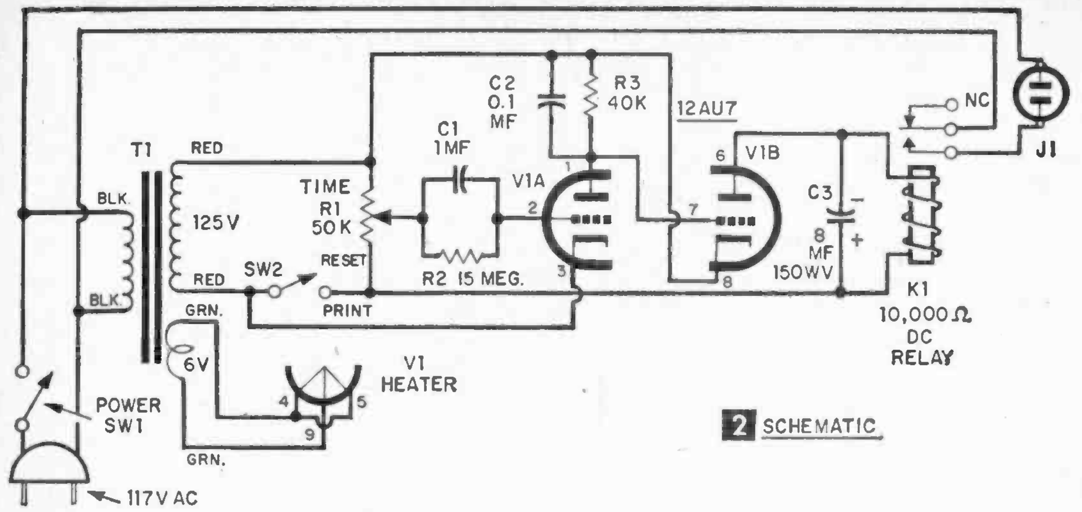
The electronic photo timer is built on a perforated chassis board mounted in a metal cabinet. All controls are on the front panel. The timed power outlet for a contact printer or enlarger is mounted on the side panel.

The timer is calibrated from 1 second to 15 seconds in 1 second graduations and from 15 seconds to 40 seconds in 5 second graduations. The desired time interval is easily adjusted by rotating the control mounted in the center of the front panel. The toggle switch on the top center of the front panel, is used to start the timing action. The slide switch on the lower center of the front panel is the ac power off-on control.

How It Works: The schematic diagram (Fig. 2) shows that the timing switch (SW2) is normally in the RESET position. This allows C1 to charge negatively by means of the rectifying action between the grid and cathode of VIA. The capacitor's negative charge has no effect on the tube's current flow, as it is connected (through R1) to the plate circuit.

When the timing switch is thrown to the PRINT position, it connects R1 to the cathode of VIA. This places the capacitor's (C) negative charge between grid and cathode of VIA. This cuts off the plate current flowing through R3.

The grid and cathode of VIB are connected across R3. The lack of plate current flow of VIA through R3 therefore causes the plate current of VIB to operate at maximum current, as there is now no bias voltage for VIB. (The bias voltage for VIB is furnished by the plate current flow of VIA through R3). This causes the relay K1 to close and ac power is then connected to J1 (The timed power



2 SCHEMATIC

outlet for the contact printer or enlarger.)

After a definite time period (depending on the setting of R1) C1 is discharged through R2, removing the negative voltage on the grid of VIA and causing it's plate current to flow again through R3. The bias voltage across R3 now causes the plate current of VIB to be reduced and relay K1 opens. The ac power to J1 is disconnected, ending the timing cycle.

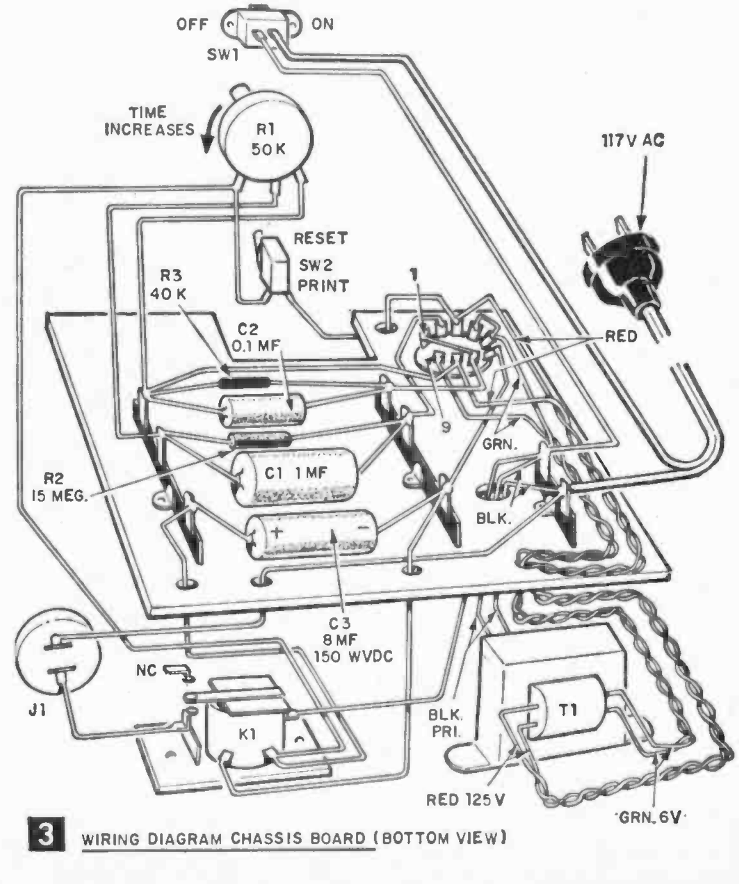
The switch SW-2 is then thrown to the RESET position allowing C1 to recharge for the next timing cycle.

Construction: The chassis board (1/8 in. perforated hardboard) is cut as shown in the assembly drawing, (Fig. 5) the mounting brackets (1/16 in. aluminum) are made and used to fasten the chassis board in the metal cabinet.

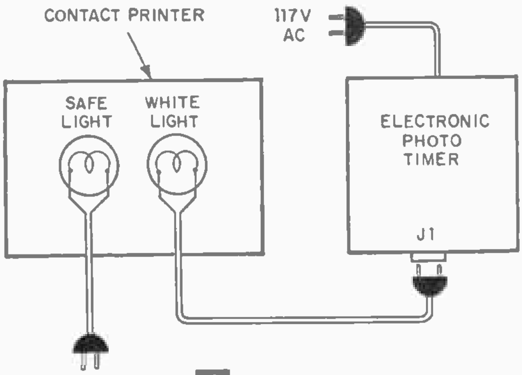
Install the tube socket, relay and power transformer on the chassis board. Then make a 2-in. dial of white plastic or cardboard and mount it on the front panel by using a flat metal washer between the panel and the timing control hex nut. Insert a shakeproof washer between the timing control and the inside front panel. This will prevent movement of the potentiometer and alteration of the timing calibration.

Mount the toggle switch (SW2) and the power switch (SW1) on the front panel. The ac outlet socket for the photo printer or enlarger is then installed on the top of the cabinet.

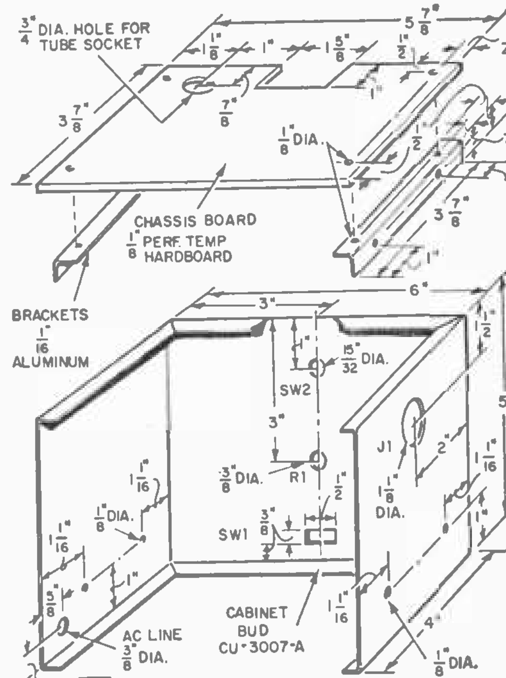
Install the terminal lug strips and the capacitors and resistors. Wire the circuit as shown in the wiring diagram (Fig. 3). Install a rubber grommet where the ac line enters the cabinet, and tie a knot in the line to pre-



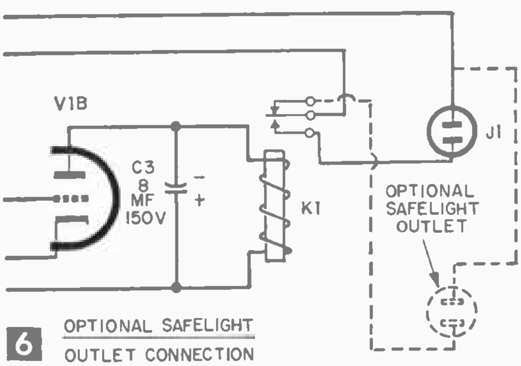
3 WIRING DIAGRAM CHASSIS BOARD (BOTTOM VIEW)



4 CONTACT PRINTER CONNECTION



5 ASSEMBLY



6 OPTIONAL SAFELIGHT OUTLET CONNECTION

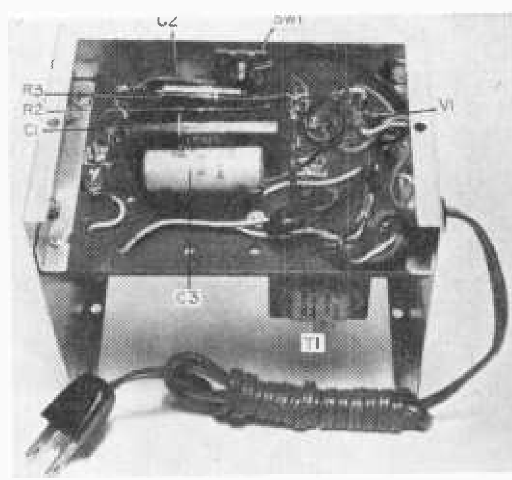


Fig. 7: In this under-chassis view, we see the location of the principle parts. Parts placement is not critical.

vent accidental pulling from the cabinet.

Testing and Calibration: Connect a contact photo printer or small lamp to J1. Set the toggle switch to RESET and the slide switch to ON. Allow several minutes for the 12AU7A to warm up, then set the time control to approximately half scale. Throw the toggle switch to PRINT position. The table lamp or printer should light and stay lit for a definite period of time. After the lamp goes out, return the toggle switch to RESET. This test shows that the timing circuit is working.

To calibrate the time dial, a watch or clock with a sweep second hand is needed.

Set the time control counter-clockwise to the end of its rotation. By using the second hand on your watch, find the position on the time dial that corresponds to a one-second time interval. This is done by moving the time control to an arbitrary point on the dial, throwing the toggle switch to PRINT and noting the time the lamp is lit. Throw the switch to RESET and readjust the control as necessary. Note: There will be a small time delay between throwing the toggle switch to PRINT and the actual lighting of the lamp. This is normal and is caused by the time constant (charging time) of capacitor C3.

Mark the dial directly below the pointer knob with black ink or ball point pen to indicate the one second time interval. Now find the other time intervals the same way. Calibrate the dial in one second points up to 15 seconds and 5-second points to 40 seconds.

If you want a longer time calibration than 40 seconds, increase the capacity of C1 by paralleling it with another paper capacitor. The exact value will be determined by experiment.

Operation: The photo contact printer or enlarger is connected to the timed ac outlet (J1) on the side of the cabinet. Set the time control to the desired exposure. Throw the toggle

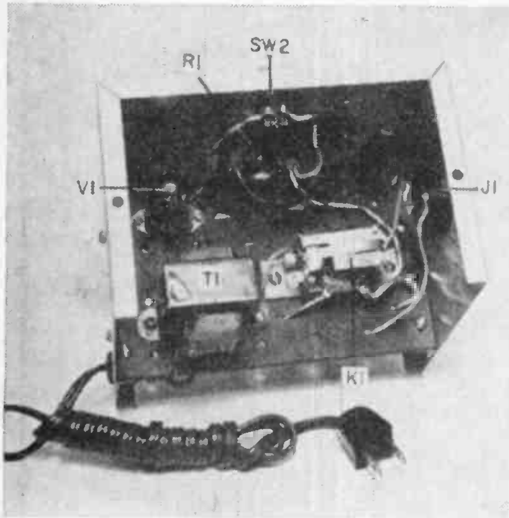


Fig. 8: On top of the chassis, we see the positions of the tube, relay, transformer and locations of the controls.

MATERIALS LIST—ELECTRONIC PHOTO TIMER

Desig.	Size and Description
R1	50,000 ohms 3-w wirewound potentiometer Clarostat A58 or equiv.
R2	15 megohm ½-w carbon resistor
R3	40,000-ohm w carbon resistor
C1	1 mfd 200-v paper capacitor
C2	0.1 mfd 200-v paper capacitor
C3	8 mfd 150-v electrolytic capacitor
T1	125-v 15 ma, 6-v 0.6 amp sec. Thordarson 26R37 or equiv.
SW1	SPST slide switch
SW2	SPST toggle switch
K1	SPDT 10,000 ohm dc relay, Potter & Brumfield LB-5
V1	12AU7A tube
Cabinet	4x5x6" aluminum minibox, BUD Cu-3007-A
Tube socket	9-pin, top mounting. Amphenol 59-406 or equiv.
2 ea.	3-terminal tie strips
1 ea.	2-terminal tie strips
Misc.	perforated hardboard (chassis board), ac line cord, pointer knob, wire, etc.

switch to PRINT. After the time cycle, move the toggle switch back to RESET.

Normally, contact printers come with two lamps. One is a small red or yellow safelight, which is used to position the negative for printing. The other lamp is a white light, which is used to expose the print.

Rewire your contact printer as shown in the contact printer connection drawing (Fig. 4). The white light is connected to the electronic photo timer, while the safelight is connected directly to the ac line. This makes easier operation of the contact printer.

If you are using an enlarger and desire to turn off the darkroom safelight while exposing the print, an additional ac outlet can be added to the electronic photo timer. This outlet can be connected as shown in the optional safelight connection drawing (Fig. 6) and mounted on the side of the cabinet. The darkroom safelight is connected to this outlet and will be automatically turned off during the print exposure time interval.

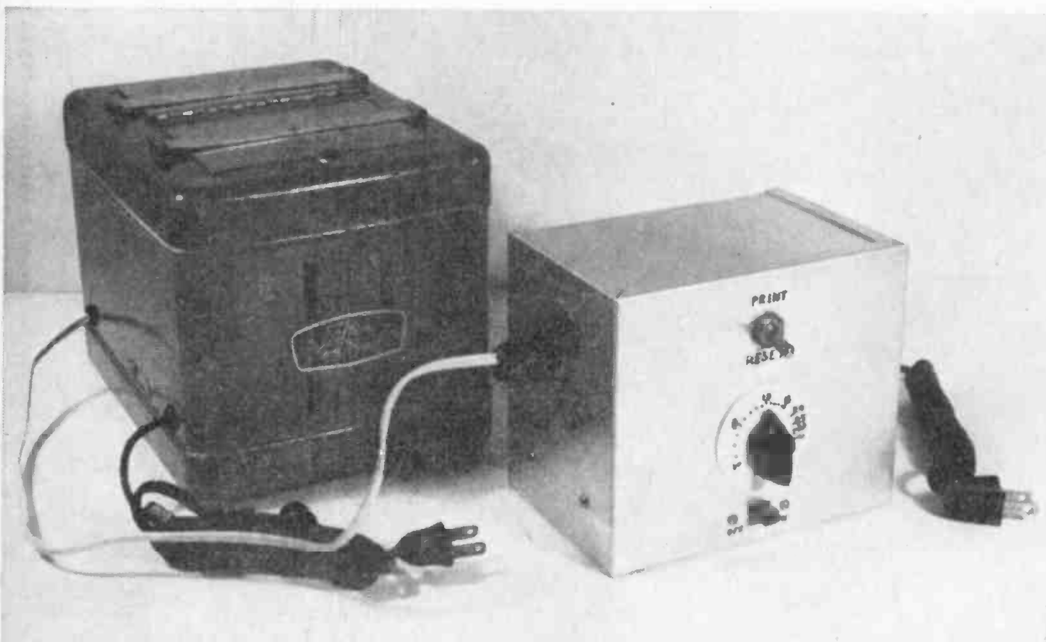
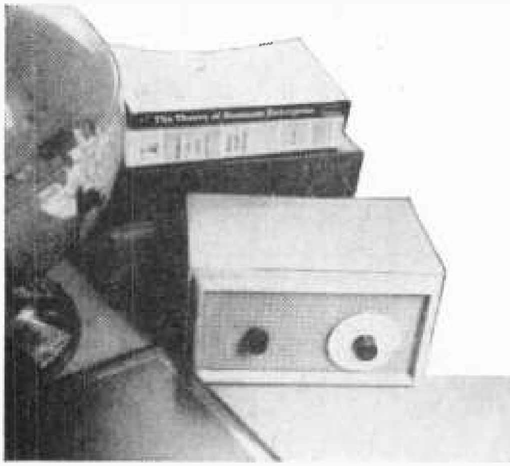


Fig. 9: The completed unit with a contact printer plugged in. Notice the white plastic dial scale that you calibrate.

A 6-Transistor BC Radio

The Sweet Tone



This 6-transistor radio has unusually good tone and can drive a hi-fi speaker. It contains two ready-made circuit modules which minimize construction time and costs less than $15

By FORREST H. FRANTZ SR.

THIS compact 6-transistor radio was designed to provide better fidelity than that available from ordinary small broadcast radios with limited frequency response and small speakers. The radio was built into a 3¾x4½x6¾ in. package which also contains the battery power supply. Terminals on the rear of the radio permit connection to a large high quality loudspeaker that can be located remotely from the radio. The radio can be placed on a coffee table, on a bedside table, a desk, or elsewhere convenient to the person who'll be doing the tuning. The loudspeaker can be positioned for best room coverage and at a point where the size of a quality speaker is not objectionable. The author built the Sweet Tone for his study. The radio is on a low table in front of a couch, and the speaker is located on a side chest on the other side of the room.

The Sweet Tone employs a ready-made 3-transistor tuner (the Lafayette PK-633) and a ready-made 3-transistor amplifier (the Lafayette PK-522.)

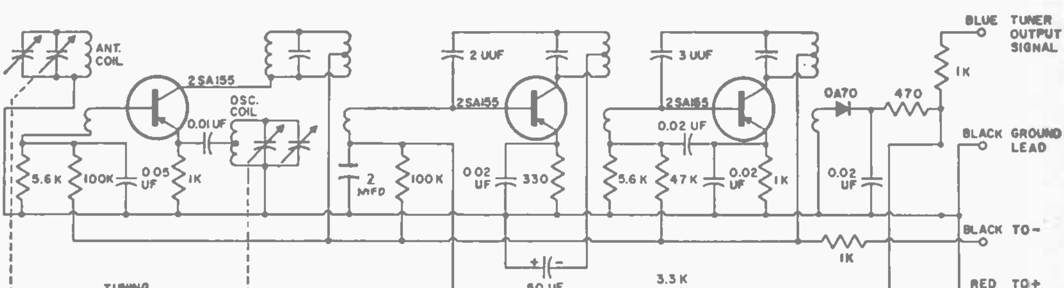
Construction: Modify the tuner as follows:

(1) Remove the .02 mfd. capacitor as indicated in Fig. 1.

(2) Remove the 30 mfd. capacitor as shown in Fig. 1 and replace with a 2-mfd, 6-volt capacitor mounted under the board as shown

MATERIALS LIST—SWEET-TONE RECEIVER

Amt. Req.	Size and Description
1	3-transistor subminiature AM broadcast tuner (Lafayette PK-633)
1	2mfd, 6-v ultraminiature capacitor (Lafayette CF-100)
2	miniature knob (Lafayette MS-185)
2	3²¹⁄₃₂ x 6¾" perforated Bakelite board (Lafayette MS-305)
2	5 way binding posts (Lafayette MS-566)
	See Fig. 3 before you cut:
2	⁷⁄₁₆ x 4½ x 6¾" wood cabinet sides
2	⁷⁄₁₆ x 4½ x 3¹¹⁄₁₆" wood cabinet sides
	Miniature parallel cable for connection to speaker (Lafayette WR-157 is 25 ft. roll)
	Parts for this project were obtained from: Lafayette Radio, 111 Jericho Turnpike, Syosset, L. I., N. Y.



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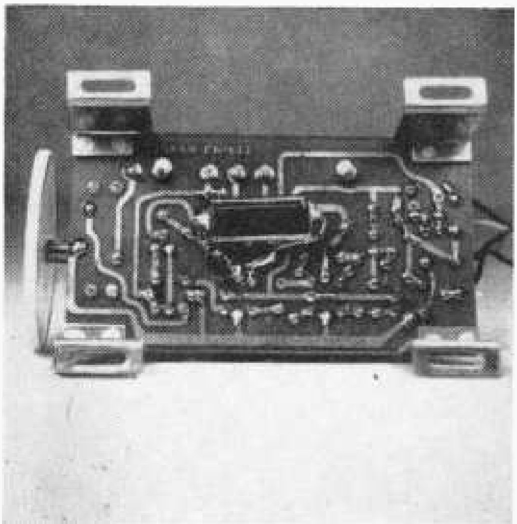
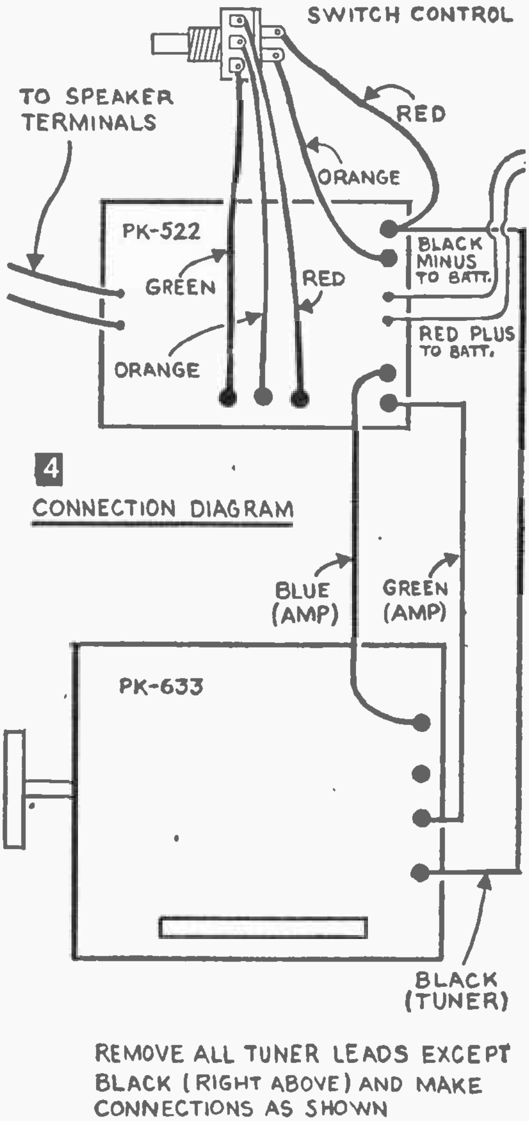


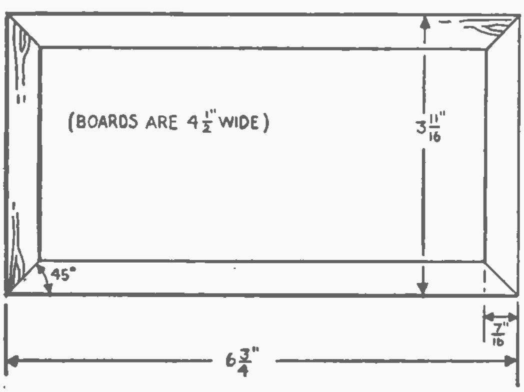
FIG. 2: Remove the 30 mfd. AVC bypass capacitor shown here and replace with a 2 mfd. capacitor for better fidelity.



in Fig. 2. These changes to the tuner flatten its frequency response and improve overall fidelity.

Cut the wooden sides for the cabinet as shown in Fig. 3. The wood available for this was a trim board with a contoured edge, but a board with a square edge would be equally attractive.

Connect six No. 1, size C flashlight cells in series and fasten together in the general relative positions shown in Fig. 5. The cells are connected wtih bare hook-up wire soldered directly to the cells. The soldering iron should be up to soldering heat before being applied to the cells to minimize cell deterioration. The Burgess cells used have tinned ends and solder easily. The No. 1 cells were chosen because they will have a long life and are considerably more compact than the more common No. 2 cell. Fasten the cells together with rubber bands.



FRONT VIEW WITH DIMENSIONS 3

Lay the battery, amplifier, and tuner on the cabinet base as shown in Fig. 5 and interconnect them as shown in Fig. 4. The volume control shaft should be cut to a length of ¼ in. prior to being connected in the circuit. The output transformer leads should be extended about 3 in. When wiring is completed, fasten the tuner to the cabinet base with short wood screws. Place a piece of sponge rubber under the amplifier and fasten the amplifier on the cabinet base with short nails or screws. Glue a retainer block on the cabinet base to hold the battery so that the rear cell is in line with the back of the base. Place the block so that the front corner is in line with the front edge of the tuner. Use Fig. 5

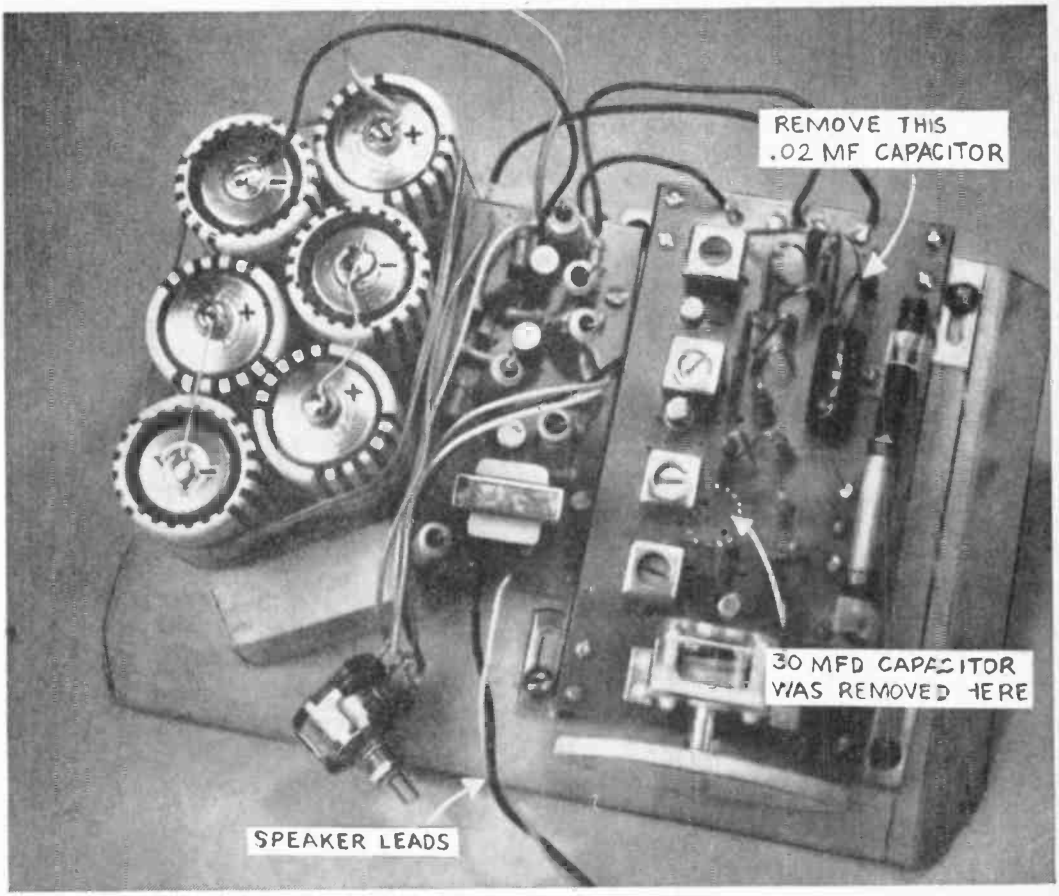


FIG. 5: Batteries, amplifier, and tuner are mounted on base. Wiring is complete except for speaker terminal connections.

for guidance in positioning the components.

Now check for operation by temporarily connecting a loudspeaker to the output leads. If the set doesn't operate, recheck the wiring. When all is well, disconnect the speaker, and assemble the cabinet. Tack a piece of perforated board to the back of the cabinet base. Use this to get the cabinet square during assembly.

Glue and nail (use short brads) the sides to the cabinet base. Glue a 5/8x5/8x2¼ in. block, and fasten to the top of the cabinet. The block retains the battery in the vertical direction but permits the battery to be pulled out of the back when the rear perforated board is removed.

When the glue on the cabinet has set, remove the perforated back. Fill the edges and brad holes with plastic wood, sand, and stain or paint as desired. Figures 6 and 7 show the project at this stage of completion.

Cut the front panel from a piece of perforated board to the opening dimensions on your cabinet. In the process of cabinet construction, individual cabinet dimensions may

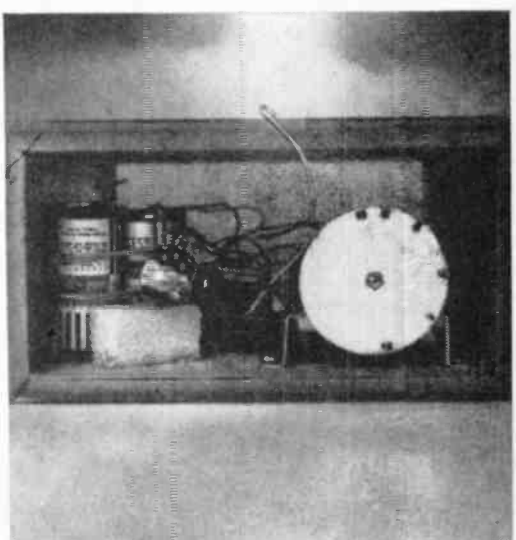


FIG. 6: Assemble cabinet on base. Note block which holds batteries.

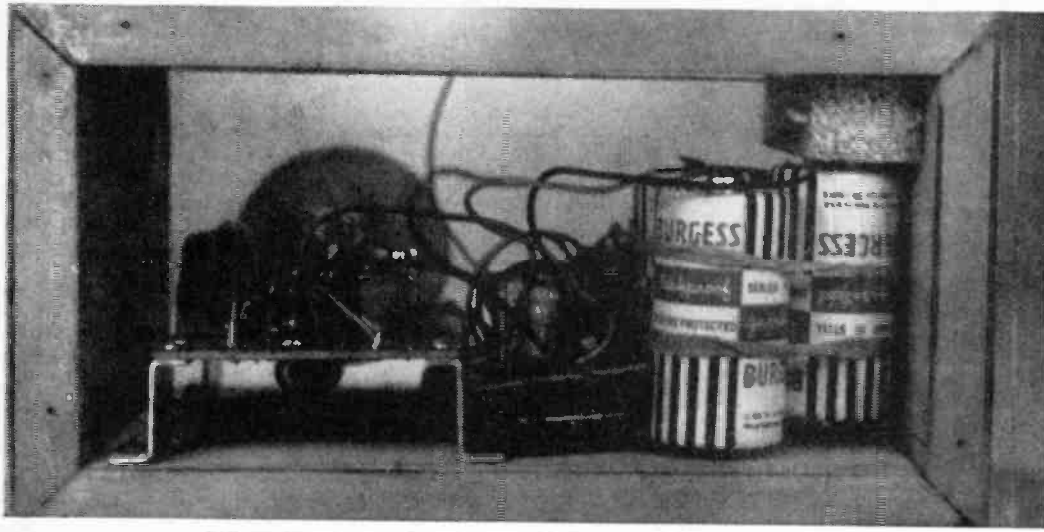


FIG. 7: Rear view. Cabinet is assembled to base, Panel not installed.

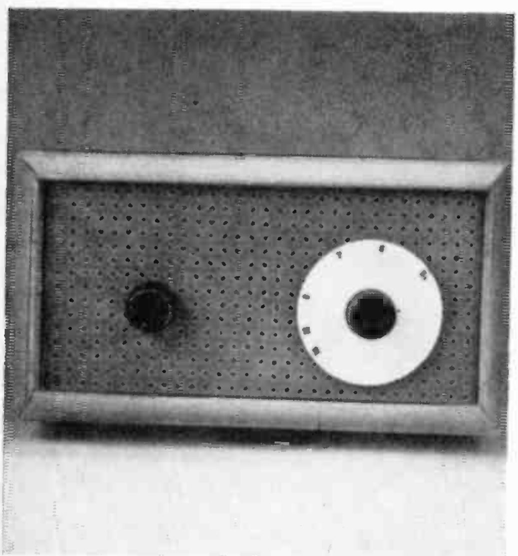


FIG. 8: Front view of completed receiver. Left knob controls power on-off and volume. Right knob controls station selector.

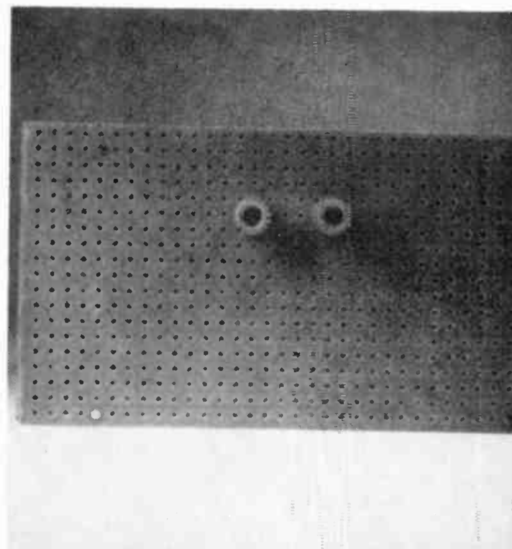


FIG. 9: Rear view of the completed unit. Output terminals are for connection of the remote loudspeaker of high fidelity type.

differ slightly from those cited here. Strive for a tight fit. Place the board in the front of the cabinet and locate the center for the tuning capacitor hole. Locate the volume control switch hole on the same horizontal line and at an equal distance from the opposite side of the board. Drill a ¼ in. hole for the volume control and a ⅜ in. hole for the variable capacitor. Remove the front screw which holds the tuning dial on the tuning capacitor shaft, and remove the tuning dial. Fasten the volume control on the front panel, and push the panel into place in the cabinet. If the fit isn't tight enough to hold the panel in place, apply a small amount of glue to the top edge of the panel. Push the panel against the front edge of the tuner and the battery retainer block.

Fasten the tuner dial and the volume control knob. Glue a small knob on the front of the tuner dial. The front of the receiver will look like Fig. 8 at this point.

Drill two ⅛ in. holes in the back piece of perforated board for the output terminals (Fig. 9), fasten the terminals, and connect the output leads to the soldering lugs.

Experimenter's Chassis

Versatile, reusable chassis for experiments and circuit development

By W. F. GEPHART

WHEN working with experimental circuits the need for an experimenter's chassis becomes obvious. After experience with two home made and one commercial experimental chassis, the author decided to summarize his experience and design a chassis to meet these needs.

The following seemed to be important factors in considering design aspects:

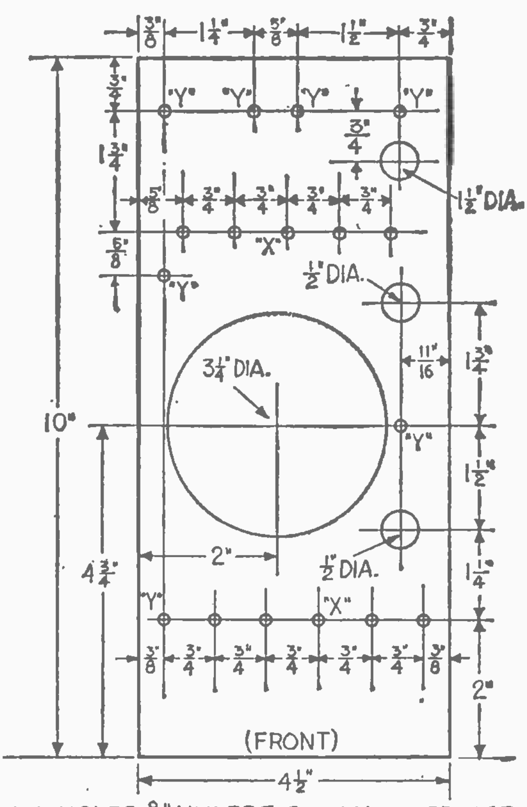
The unit should be able to handle any type of tube or transistor available now or in the future. It should be compact, without being crowded, yet be able to handle several stages if necessary. Connections should be quick and easy to make and be secure. In multiple stage work, there should be an option of making certain leads (ground, filaments, etc.) common if desired. The chassis should be able to handle panel parts and mounted parts (transformers, relays, etc.). The unit should be durable and long-lasting and low in cost.

The unit shown here meets these conditions. The basic chassis takes various inserts to handle different tubes or transistors, and permits adaptation to future designs. Connections are made by Fahnestock clips, both as connection points and to tube socket pins. To be compact, yet permit multiple stage work, each basic unit only handles one tube or power transistor (or two low-powered transistors), yet any number of basic units can be plugged together for multiple stage work. When units are plugged together, switches give the option of making ground, B plus and/or filament leads common between units.

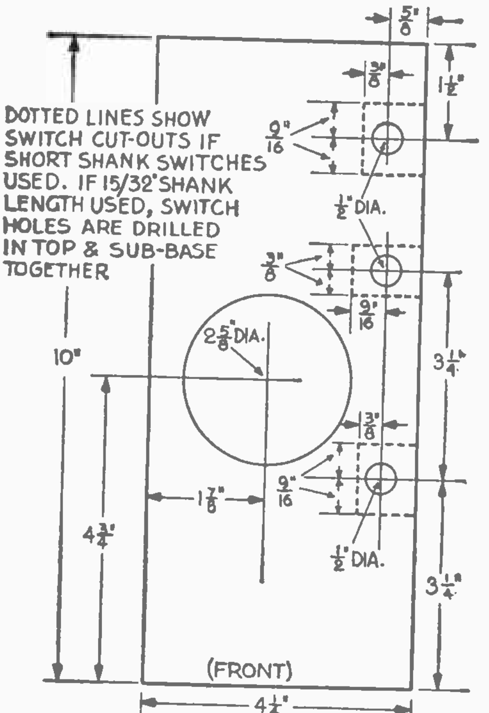
While each basic unit has a panel for mounting switches and potentiometers, space is not allocated for chassis-mounted parts. Instead, a special mounting adapter was made that fits above the basic unit to take transformers or relays when required. This saves having waste chassis space when not needed.

By using high quality clips, connections do not load with solder, can be made quickly, and will last indefinitely. Each basic unit costs about six dollars and each tube-transistor insert will run from about 60¢ to $1.20, depending on the socket and number of clips required. Basic units or inserts can be added in the future, in any reasonable number. Since each basic unit is only 4½ in. wide, a four-stage chassis would only be 18 in. wide, and a six-stage only 27 in. wide.

The parts list gives the material required for each basic unit. Since the drilling for the plugs and jacks in the side pieces is critical (so units will plug together properly),



ALL HOLES 8/64" UNLESS SHOWN OTHERWISE
FIGURE 1: HARDBOARD TOP



ALL OTHER HOLES IN TOP & SUB-BASE TOGETHER

FIGURE 2 : PLYWOOD SUB-BASE

it is best to cut and drill side pieces together for the ultimate number required, and save the extras. For example, if you plan to build two basic units now, but feel that you might want two more later, cut and drill side pieces for all four units. The cost of the extra side pieces is trivial.

The following steps assume that more than one basic unit is being made, and reference to clamping pieces together refers to similar pieces for the multiple units.

First cut the hardboard top (Fig. 1), side pieces (Fig. 3), plywood sub-base (Fig. 2), and white pine end pieces to the size shown. Next, cut the notches for the switches in the plywood (required if switches with shanks of less than 15/32 in. are used; switches shown in parts list have 15/32-in. shanks).

Clamp the plywood sub-bases together, with ends and sides aligned, and drill a 1/16-in. hole through all pieces at the center of the large insert hole. Separate the pieces, and cut the insert hole in each.

Next, nail the front and back pine supports to the ends of the plywood sub-base. Set the sub-bases and ends on a flat surface, and check the hardboard side pieces to be sure they are flush with the top of the plywood. Clamp all side pieces together, and drill four 9/64-in. holes at points indicated. Before removing the clamps, mark the top and front edges with nail polish, to help keep the pieces in proper alignment during assembly.

Remove the clamps, and enlarge the holes in half of the side pieces to 1/4 in. and fasten them to the plywood and end pieces, properly aligned, using brads and glue. Use a side piece with 9/64-in. holes on the right side (looking from the front), and a piece with 1/4 in. holes on the left side.

Clamp the hardboard tops together, and drill all holes except the switch holes. Remove the clamps, hold the top in place on the plywood, and drill the holes marked "X". Temporarily fasten the top to the plywood with 5/8x6-32 screws and nuts in these holes, and then drill 9/64-in. holes through the plywood at holes marked "Y". Drill 1/2-in. holes through both hardboard and plywood for the switches.

Remove the top and apply decals and lines for common-connected terminals (Ground and B plus) as shown. These lines can be painted on, or put on with 1/16-in. colored graph tape, such as *Chart-Pak* available at drafting supply houses. It is best to then spray the panel with lacquer or varnish to

MATERIALS LIST—EXPERIMENTER'S DEVELOPMENTAL CHASSIS

Amt. req.	Size and Description
	For Each Basic Unit
1	1/8 x 4 1/2 x 10" hardboard (top)
2	1/8 x 1 1/2 x 10" hardboard (sides)
1	1/8 x 4 x 4 1/2" hardboard (panel)
1	1/4 x 4 1/4 x 10" plywood (sub-base)
2	1/2 x 1 1/2 x 4 1/4" white pine (ends)
	(Use tempered hardboard, two sides smooth)
17	#10 Fahnestock clips (Cat. #41 H 705)
4	G-C 33-034 banana plugs (Cat. #41 H 400)
4	G-C 33-192 banana jacks (Cat. #41 H 470)
9	soldering lugs
2	SPST toggle switch C-H 8280-K16 (Cat. #34 B 500)
1	DPST toggle C-H 8360-K7 (Cat. #34 B 502)
8	1/2" x #6 *rh* woodscrews
2	1/2" x #8 *rh* woodscrews
9	5/8" x 6-32 machine screws and nuts
	For Each Transformer-Relay Adapter
1	1/8 x 3 1/4" 4 1/2 hardboard
4	8-32 brass thread rod, 3 1/2" long
8	8-32 brass nuts
	For Each Low-Power Transistor Insert
1	1/8 x 3 1/4" diameter disk hardboard
2	transistor sockets, Elco 3304 (Cat. #41 H 093)
8	#10 Fahnestock clips (Cat. #41 H 705)
4	1/4" x 2-56 machines screws and nuts
8	1/4" x 6-32 machines screws and nuts
	For Each Octal-Transistor Adapter
1	1 1/4" dia. disk plastic, metal, etc.
2	transistor sockets, Elco 3304 (Cat. # 41 H 093)
4	1/4" x 2-56 machine screws and nuts
1	1 3/4" x 6-32 machine screw and nut
1	Octal tube base with all eight pins
	For Each Power Transistor Insert
1	2 1/2 x 3 1/4" piece 18-20 gauge aluminum with 1/2" flange on end
1	1/8 thick 3 1/4" dia. disc hardboard
3	#10 Fahnestock clips (Cat. #41 H 705)
3	soldering lugs
3	miniature alligator clips, Miller #30 (Cat. #41 H 142)
3	1/4" x 6-32 machine screws and nuts
	For Each Tube Insert
1	1/8 thick 3 1/4" dia. disk hardboard
1	tube socket as desired, with mounting screws and nuts
1	#10 Fahnestock clip, 1—1/4 x 6-32 screw and nut for each tube pin

Catalog numbers refer to Allied Radio, 100 N. Western Ave., Chicago 80, Ill.

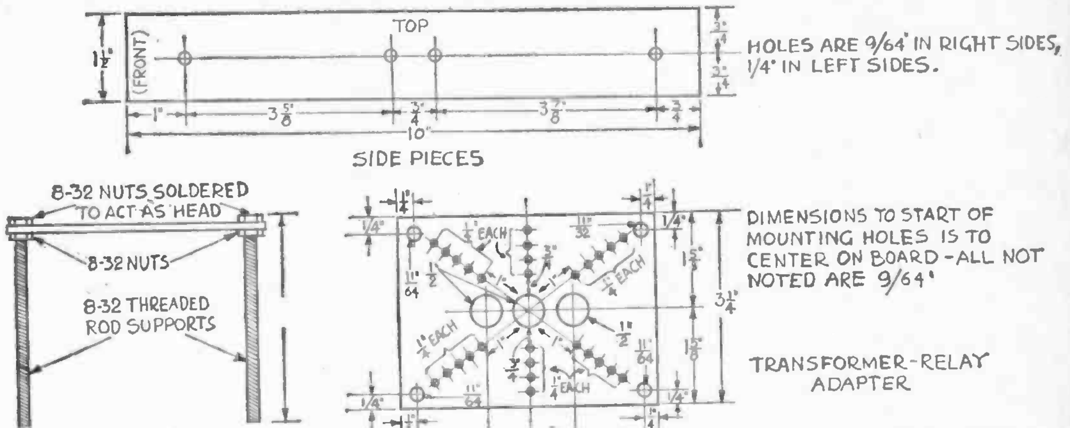
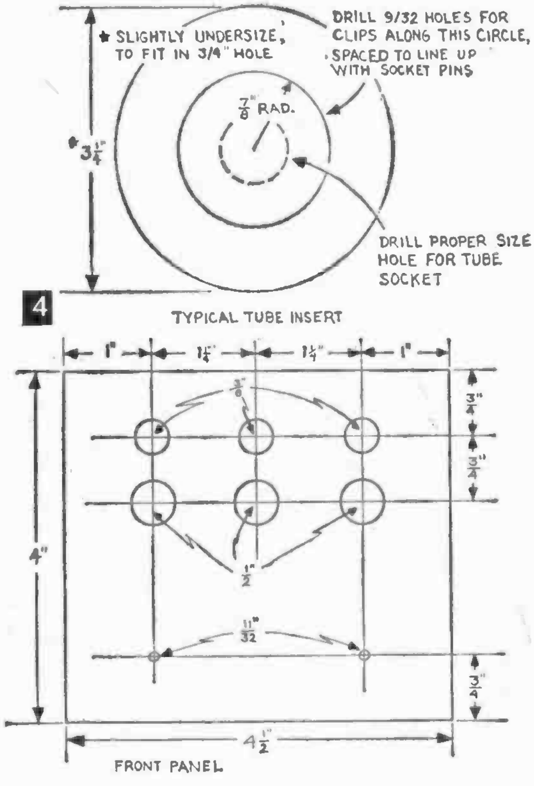


FIGURE 3: SIDE PIECES AND ADAPTER LAYOUT



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protect the decals and lines.

Next, cut and drill at least one transformer-relay adapter plate (Fig. 3). Lay it on the hardboard top, with one long side flush with the front, and mark the position of the four 11/16-in. corner holes on the hardboard top. Drill four 3/16-in. holes at these points to hold the adapter supports.

Place the hardboard top back on the sub-base, and fasten in place by mounting clips in the "X" and "Y" holes. Use 5/8x6-32 screws and nuts, and include a solder lug between the nut and underside of the plywood. Then, using an awl or nail, start screw holes in the plywood for the other clips, and attach them, using 1/2x #6 RH woodscrews. Mount the switches, with the double pole switch in the center hole.

Mount four banana plugs (with solder lugs on the inside) on the right-hand side piece, and four banana jacks (with lugs on the inside) on the left-hand side piece. Cut and drill the front panel (Fig. 4), and fasten to the front support with two 1/2x #8 RH woodscrews. The top three holes are for

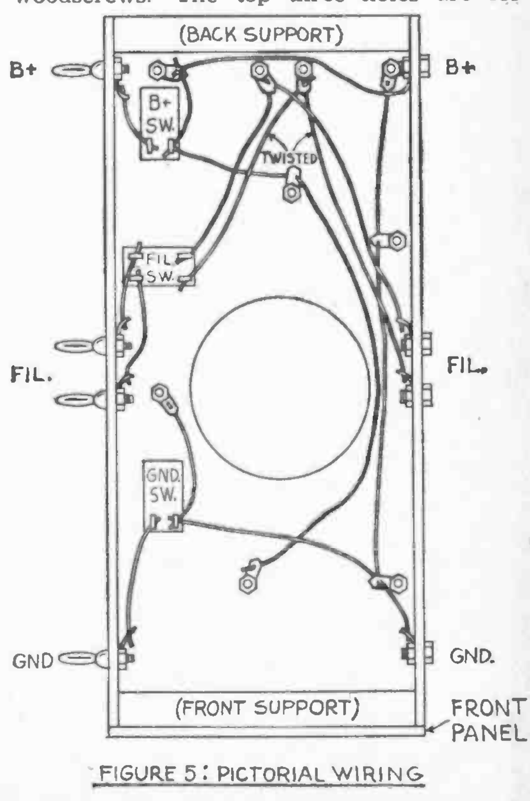


FIGURE 5: PICTORIAL WIRING

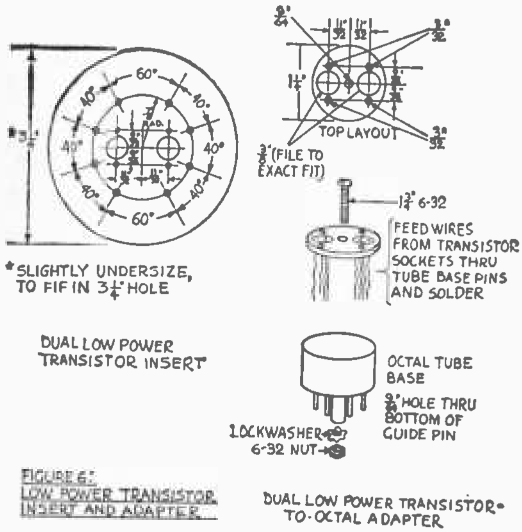


FIGURE 6: LOW POWER TRANSISTOR INSERT AND ADAPTER

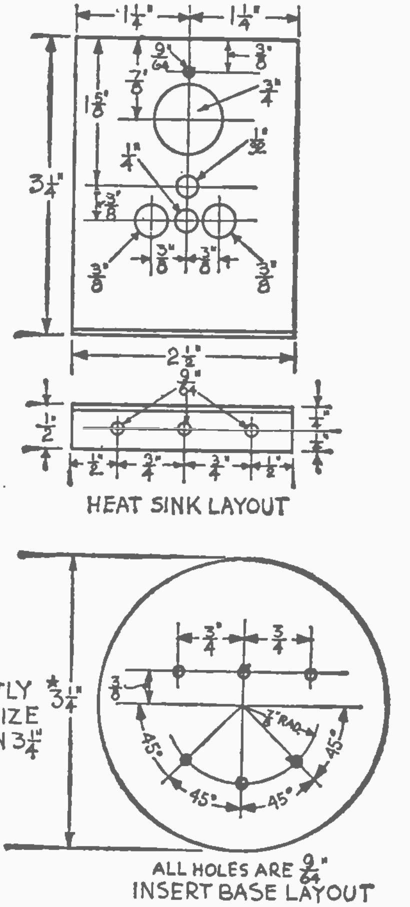


FIGURE 7: POWER TRANSISTOR INSERT

rotary switches and potentiometers, and the bottom three are for toggle switches, push buttons, and pilot lights.

The basic units should be wired underneath as shown in Fig. 5. Route all wiring around the insert hole, and be sure the filament wiring is consistent, the right hand clip always connected to the front jack and plug. This permits proper polarity on dc filaments when using several basic units with common heaters.

All inserts are slightly less than 3¼ in. diameter, to fit snugly in the insert holes in the top, and all have clip mounting holes on a ⅞-in. radius. They can be made of hardboard, Bakelite, plastic or any other insulating material that is not more than ⅛ in. thick. With the exception of the dual low-power transistor insert (Fig. 6), tube sockets are mounted in the center of the insert, with the clips arranged around the socket in line with the tube socket pins. For octal and other large sockets, it is best to use 1/16 in. stiff, hard plastic so retainer ring sockets can be used, to save the space required for mounting screws.

Since fewer parts are usually involved in transistor circuits, two sockets can be mounted on one insert (Fig. 6). For power transistors, where some sort of heat sink is usually desirable, a special insert (Fig. 7) is used. The holes in the aluminum plate will accommodate a number of different power transistors, and space is available for other configurations. In this case, leads and alligator clips are attached to the Fahnestock clips, and fastened to the transistor terminals after mounting.

Another means of using low-powered transistors is the adapter shown in Fig. 6. A base from an old octal tube has two transistor sockets mounted in it, and adapts the regular octal tube insert for transistor use. It saves making a special transistor insert, and saves a few Fahnestock clips. The four-pin transistor sockets will handle most low-powered transistors.

The transformer-relay adapter (Fig. 3) is supported by four 3½ in. sections of 8-32 threaded brass rod, and two 8-32 nuts, one being soldered to the top to form a head. Regular 8-32 screws are not available in this length, and at least 3½ in. is required to clear panel-mounted items.

In using the adapter, the component is fastened in at least one hole, and leads are run through one or more of the large holes. Panel-mounted items are wired to the chassis before the adapter is put in place. There is room under the adapter to connect the wires from the component to the proper clips when the adapter is in place.

In using the chassis, many items can be connected between clips (including tube socket clips), and short lengths of wires can be used to make connections between related clips. Soldering may be required for panel-

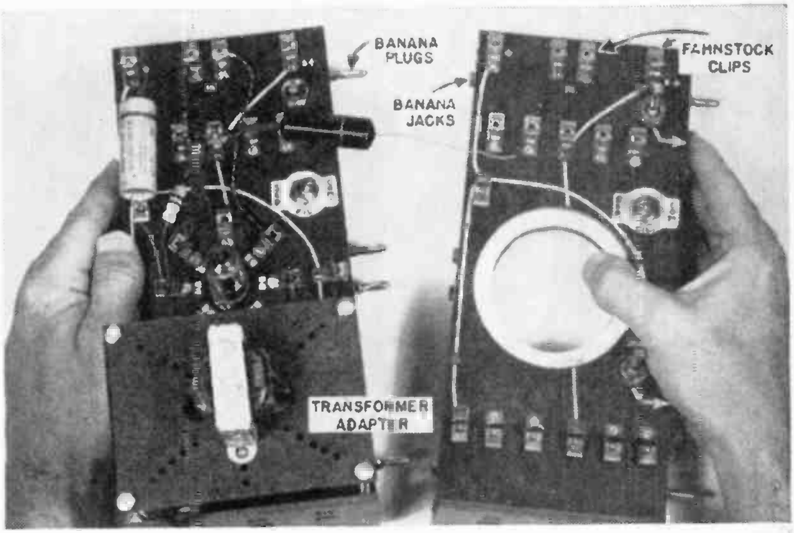


Fig. 8: With one stage complete on the left chassis, a second chassis is plugged in for development of next stage.

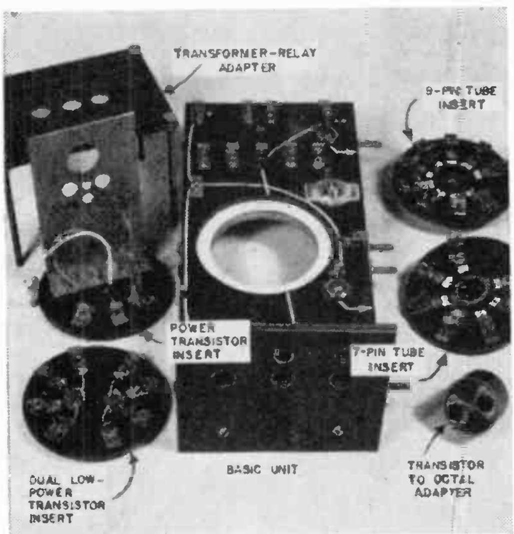


Fig. 9: The basic unit shown with some accessories. These fit the large center hole and permit breadboarding circuits.

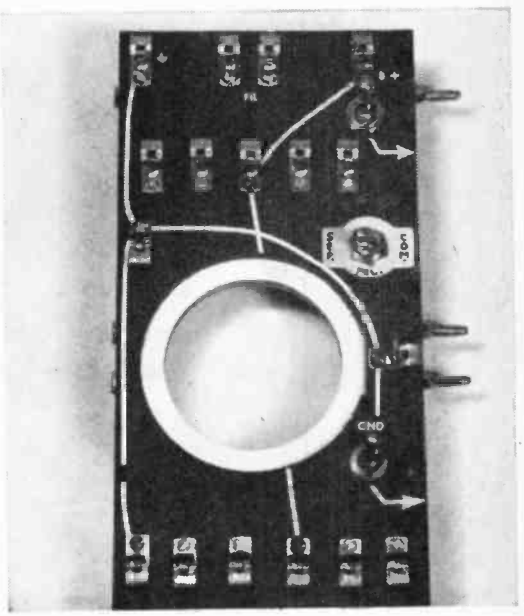


Fig. 10: Basic unit seen from the top with no insert. Lines indicate commonly-connected clips. Note plug and jack positions.

mounted items, but this can be avoided if a wire with an alligator clip on one end (to attach to potentiometer or switch lugs) is used.

When multiple chassis units are used, the switches permit interconnecting Ground, B plus, and filament leads if desired, so that only one set of leads and connections has to be made to the power supply. However, connections must be made between the tube insert filament clips and the regular filament clips on each basic unit.

Two cautions about using multiple units. First, when unplugging basic units, pry them apart *carefully* at the center (between the filament lead plugs), using a screw driver.

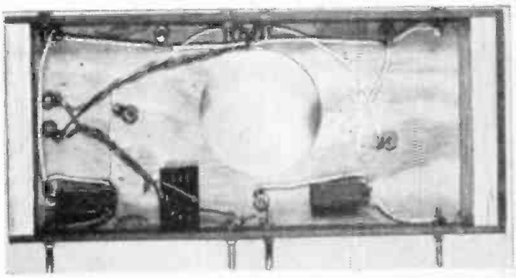


Fig. 11: Underside of basic chassis shows how wiring is dressed around center hole and filament leads are twisted for anti-hum.

A Mixer for Two RF Signals

By JAMES A. FRED

DURING the past few years many oscillator circuits have been published. The circuits have varied in complexity from the simple one-tube types to the multi-tube and transistorized versions. Very little has been said about how to use these circuits, how to check them to see if they are operating as intended or whether or not they are on the frequencies they were designed for. One of the best ways to check the frequency of an experimental oscillator is by beating its output against the output of a known frequency oscillator. As two frequencies are beat together many new frequencies are generated. The strongest of the new frequencies will be the sum of the two frequencies and the difference between the two frequencies. We are interested only in the difference frequencies. The difference frequency will decrease as the frequency of the unknown signal approaches the frequency of the known signal. When the two frequencies are the same we will have a null point or "zero beat."

Usually whenever it was necessary to determine the frequency of a new oscillator circuit the author would haywire together a diode, some resistors and capacitors and try to listen for a zero beat. This was inconvenient and unsatisfactory so a mixer was built for two RF signals. This mixer has proven to be so useful and convenient that every electronic experimenter, radio amateur, and school electronic shop should have a similar device. Basically, two twin triodes are connected so that the two signals are mixed in the first stage and then the difference frequency is amplified and terminated at the headphone jack. The user can listen to the beat note. As the unknown oscillator is tuned, the frequency will go lower and lower and lower until a point is reached where the tone disappears. At this point the two oscillators are on the same frequency. If a visual indication is desired an ac VTVM or an oscilloscope can be used. When the audible note falls below 30 cycles, the meter needle will swing back and forth violently. When the needle drops to zero you will have zero beat.

The mixer is housed in an aluminum box 4x5x6 in. in size. In order to give the appearance of a cabinet rather than a box, we have turned it up on its side to present the 5x6 surface to the viewer. The U shaped side has been cut into three pieces and two are used to form a top and bottom. This leaves the back open for removal of the tubes and ventilation. You can also plug in the cables from the known and unknown frequency oscillators. As you can see from the photograph (Fig. 1) this cabinet arrangement makes a very attractive looking instrument.

An L-shaped chassis can be bent up from a piece of aluminum or galvanized sheet metal. A lip is bent up at the long side of the L for fastening to the front of the aluminum box. Mount the gain control, pilot light, and

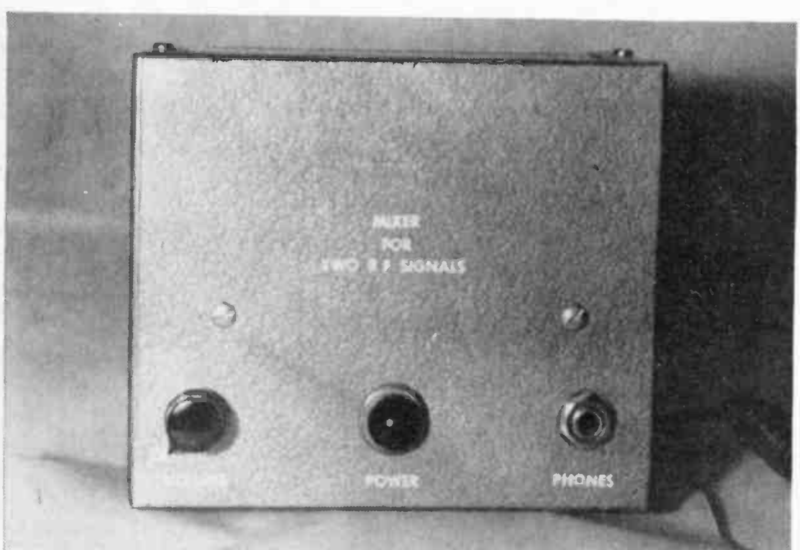
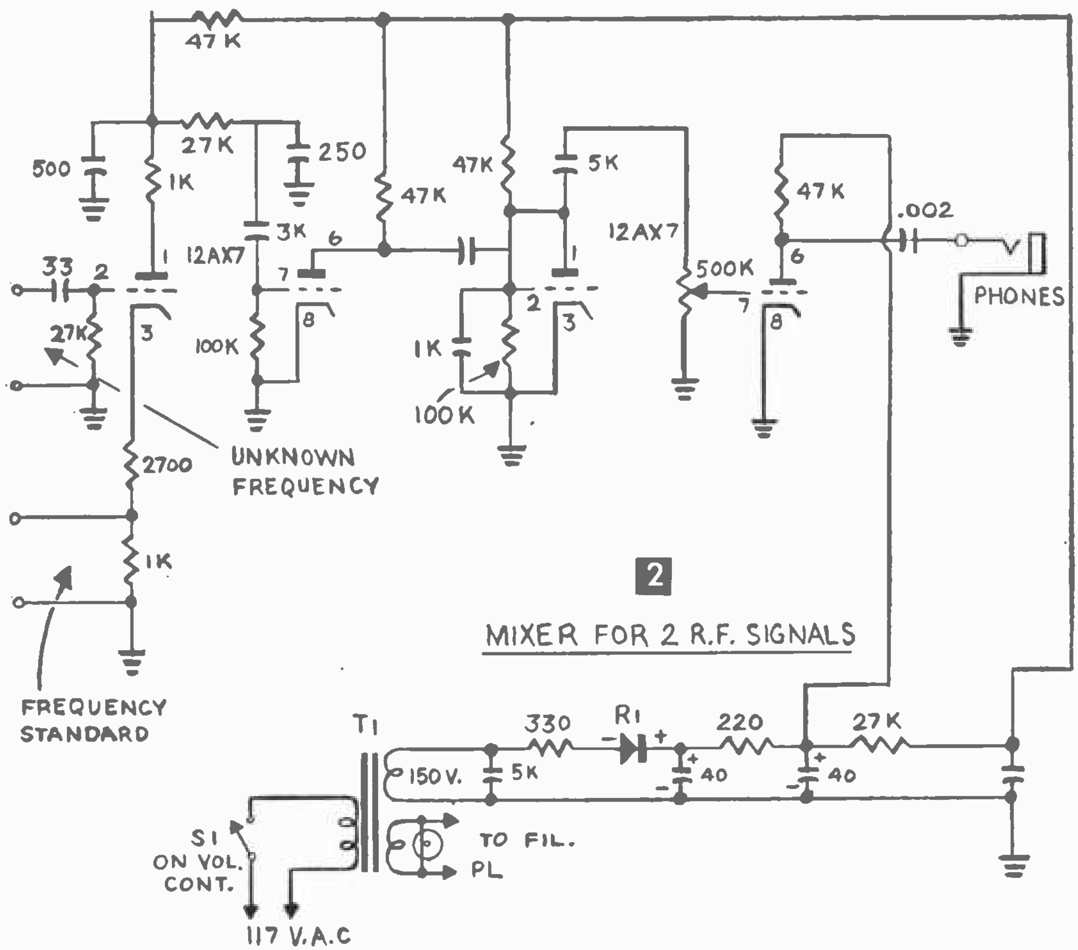


FIG. 1: The front panel for the mixer is finished with decals for a professional appearance. Use care during drilling, punching, to avoid scratches.



2 MIXER FOR 2 R.F. SIGNALS

headphone jack on the front of the box before mounting the chassis. Mount the input connectors and the line cord on the back apron of the chassis. Mount the tube sockets, transformer, capacitor and do the bulk of the wiring before mounting the chassis to the front panel. The wiring isn't too particular but you should remember to shield the leads to and from the volume control. Then do the interconnecting wiring between the chassis and front panel. After the wiring is completed plug in the line cord and check the pilot light and filament voltages. Then insert the tubes in the sockets. The transformer used was salvaged from a defunct TV booster, but the one specified in the parts list will provide very good results. If the voltages all check out, put the tubes in the sockets, plug in a pair of headphones, and you are in business. Turn up the volume and you should hear a slight rushing sound. Touch the center of each input connector and listen for a loud buzz. If you have wired everything correctly you will get the buzz. If you haven't then all will be silent.

MATERIALS LIST—MIXER FOR TWO RF SIGNALS

Amt. Req.	Size and Description
4	47k ½-w carbon resistor
2	27k ½-w carbon resistor
2	1k ½-w carbon resistor
1	2700 ohm ½-w carbon resistor
2	100k ½-w carbon resistor
1	330 ohm 2-w carbon resistor
1	220 ohm 2-w carbon resistor
1	27k 2-w carbon resistor
1	500k potentiometer with switch
1	33 mmf capacitor
1	500 mmf capacitor
1	3000 mmf capacitor
1	250 mmf capacitor
3	5000 mmf capacitor
1	100 mmf capacitor
1	.002 mfd capacitor
1	40x40 mfd 200-v electrolytic capacitor
1	30 mfd 200-v electrolytic capacitor
2	9-pin tube sockets
2	12AX7 tubes
1	90 ma selenium rectifier
1	pilot lamp and socket
1	115 v pri., 150 v, 6.3 v sec. Thordarson 22R12 or equal
1	4x5x6" aluminum box

The schematic diagram shows that the signal from the frequency standard is applied to the cathode of the input section of the 12AX7

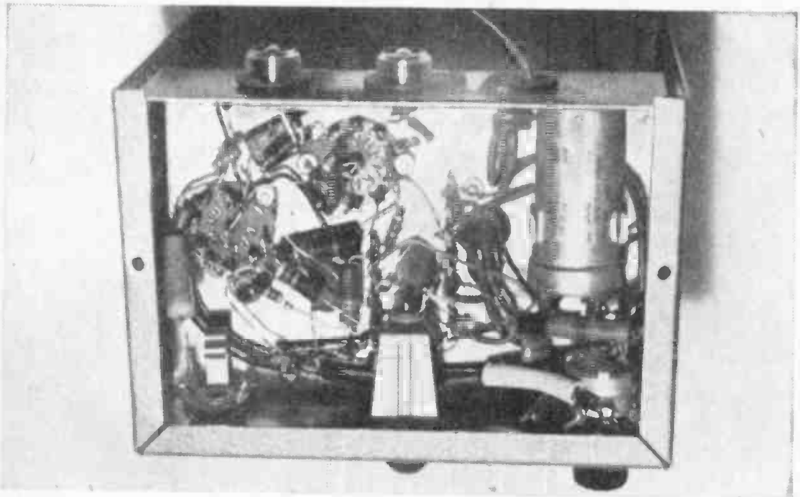


FIG. 3: Parts placement under the chassis is not critical, but leads to and from the volume control should all be kept short.

tube. This is done for two reasons: the first being that this signal is usually much stronger than the unknown signal. Secondly as this is a low impedance circuit it will load it to some degree. The unknown frequency signal will probably be a weaker signal and is therefore applied to the higher impedance grid circuit. The two signals are mixed and several new frequencies are generated. These frequencies are the sum of the two frequencies and the difference between the two frequencies. The sum frequency will usually be a high RF frequency which will not be accepted by the succeeding circuits, while the difference frequency will be a much lower frequency. If our two signals are nearly equal in frequency the difference frequency will be in the audible range and we will hear it in the headphones. For instance, if our standard frequency was 1 megacycle or (1,000,000 cycles) and our unknown frequency was 1,000,900 cycles, then the difference frequency would be 900 cycles which is easily heard. Now as we tune the unknown frequency oscillator until its frequency is 1 megacycle, the audible note will drop in frequency until it reaches zero beat and can no longer be heard. We would then know that the unknown frequency was identical to the standard frequency. We can likewise mix any two signals and if we had a cycle counter or audio frequency meter we could measure the frequency difference directly. For the average experimenter, listening to the audible tones will usually suffice. If you are used to working with RF oscillators you will find this signal mixer for two RF signals a valuable addition to your electronic workshop.

FIG. 4: Microphone connectors are shown for input and output terminals. Use any coaxial connector.

Getting Started in Radio Control

Controlling a free-flying airplane model from the ground is an unequalled thrill. You launch your plane, control it in flight, and when the engine stops, bring the plane to Earth safely at your feet

By JOHN T. MACKEN and K. KENNETH SMALLEY

Micro Miniature Controls Div. Otarion Electronics, Inc.

YOU do not have to have any technical knowledge of electronics to be successful in radio control modeling. The ability to follow simple instructions and the skills of the average do-it-yourself hobbyist are all that are necessary. New model airplane kits and miniature radio equipment are reasonably priced, and take the guesswork out of radio control today.

Everything can be obtained at your local hobby shop or from hobby mail order houses.

Note that each component you buy for this project—the receiver, the transmitter, the escapement, the switch, the engine and the model airplane kit—will have instructions for its use. Follow these instructions to the letter, unless exceptions are noted in this article.

Building the Airplane: Fig. 1 shows all the parts of the *Schoolboy* Kit. This kit is well engineered, with all wood parts die cut, requiring only that you carefully push out the pieces from the blanks. Follow the exact assembly sequence shown on the kit plans.

Complete your fuselage up to the point as shown in Fig. 4 on the airplane plan.

Install the Engine, Radio, Escapement, and Rudder Linkage: The engine is not used with its built-in gas tank. Install a *Perfect* #1 external tank in the fuselage behind the engine. Remove the engine tank by taking off back plate and install the special mounting plate included with the engine.

The tank filler and overflow tubes are extended to the outside of the fuselage through holes in the fuselage side with neoprene tubing (Fig. 3). Extend the tank engine feed tube through the firewall with neoprene tubing and connect it to the engine fuel intake nipple. Brace the tank with scrap balsa and cement it in position.

At this time it is advisable to coat the entire tank compartment with several coats of clear *Aerogloss* for fuel proofing.

Escapement: Drill holes through laminated plywood-balsa tail piece (F-6 and F-6A) 1/32 in. diameter at location marked on F-6A. Make rudder and elevator torque rods as shown on side view of fuselage plan to exact length. Bind 1/32 in. wire to ends of balsa torque rods with thread and cement well.

To obtain clearance for escapement, center section of bulkhead (F-4) escapement mount must be cut out. The torque rods can be inserted through bulkhead (F-4) and the wire ends extended through F-6A at the rear of the fuselage. The forward wire ends of the torque rods should be inserted in appropriate holes in the escapement and the escapement can be bolted to bulkhead (F-4) as shown in Fig. 4. Now the brass rudder yoke and elevator arm, which come with the escapement, can be soldered to the wire torque rod ends (Fig. 4). Clean all metal parts with emery paper before soldering. The top and bottom of the fuselage should now be covered as shown on the *Schoolboy* kit plans.

Check torque rods to make sure there is no binding—torque rods

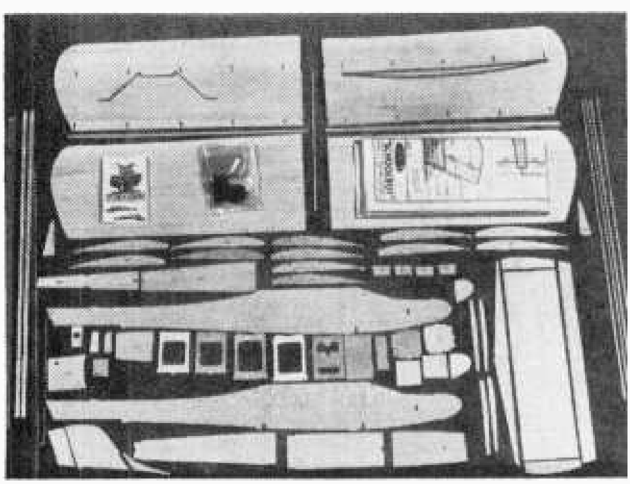
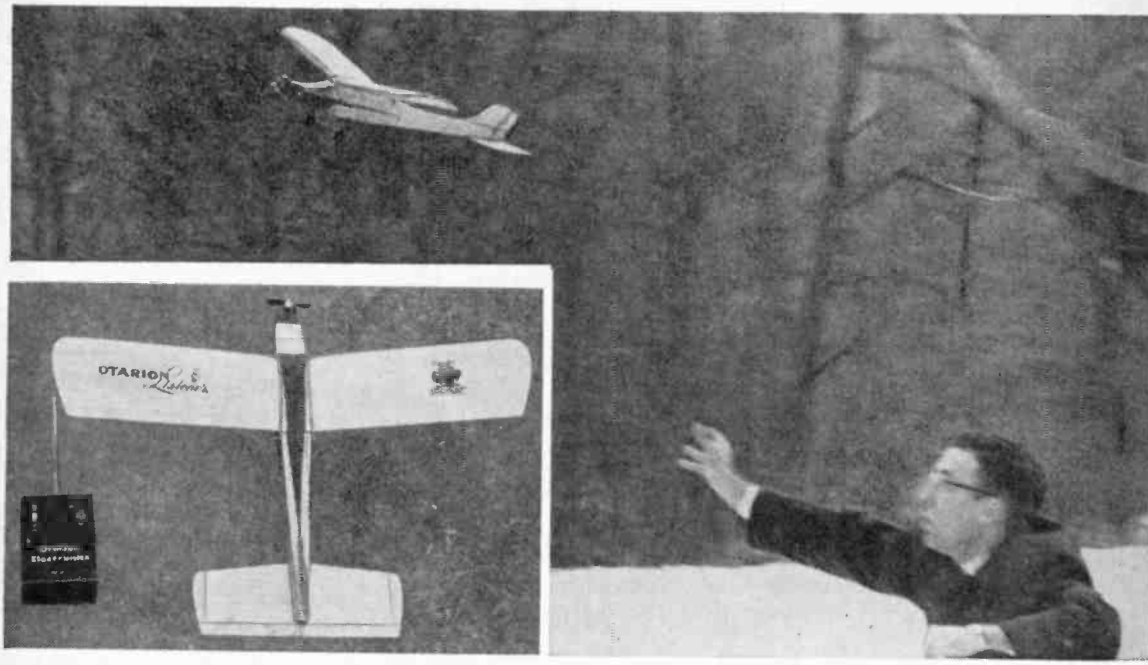


FIG. 1: The *Schoolboy* model kit, before assembly. The plane is complete except for dope, glue, radio, engine, tank and tubing.



must be completely free of friction.

Radio Installation: Cement foam rubber (included in kit) to radio mounting slide, using *Pliobond* or *Weldwood* contact cement. Cement radio to foam rubber, using same cement (do not use *Ambroid* or epoxy cement).

The *Otarion* #2705 toggle switch can be installed as shown on the *Schoolboy* plan in Fig. 6 at this time.

The radio control system is now ready to be wired.

Use a soldering iron of about 25 to 40 watts (and rosin core solder *only* should be used). Each connection should be wrapped around its terminal before soldering.

Tape the two E-91 batteries together with opposite polarity terminals side by side and clean the end contacts with sandpaper. Solder a short jumper wire between one pair of adjacent (+) and (−) terminals. Solder the red (+) lead from the receiver to the remaining (+) battery terminal. The receiver and batteries can temporarily be placed in the airplane to obtain the correct wire lead lengths. Solder the remaining (−) battery contact to a piece of black wire and the other end of this wire should be soldered to one of the pigtail terminals extending from the rear of the switch as shown in the wiring diagram. Cut off the other pigtail terminal as it is not used.

Solder the black wire from the receiver to the switch soldering terminal immediately adjacent to the mounting bolt. (A small hole is provided for this purpose.) Make sure that enough slack is left in the wiring so that the receiver and mounting slide can be removed from the airplane for battery replacement. Solder another piece of black wire to the same switch soldering terminal and run it to the top escapement terminal and solder. Solder the white wire from the receiver to the adjacent escapement terminal. The bottom escapement terminal is left bare and is not used. Run the brown antenna lead along the side of the fuselage and anchor it through a small hole in the top of the rudder. If necessary, a piece of scrap wire can be soldered to the antenna lead to make it reach the rudder. All wiring is now complete. Use a

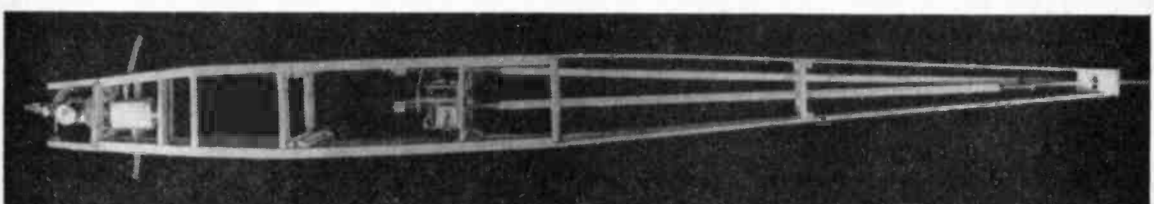


FIG. 2: The assembled fuselage with all formers, bulkheads, engine, tank, escapement and torque rods installed. Top and bottom removed for photo.

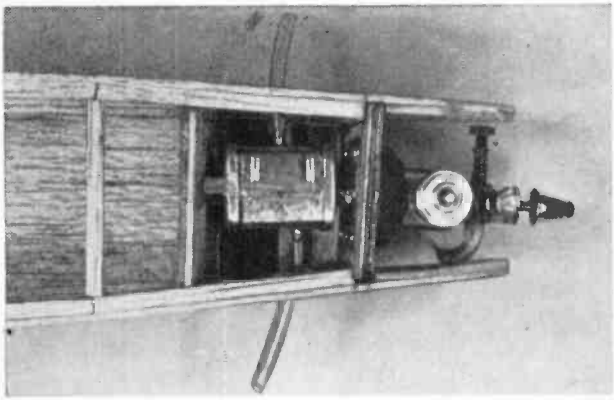
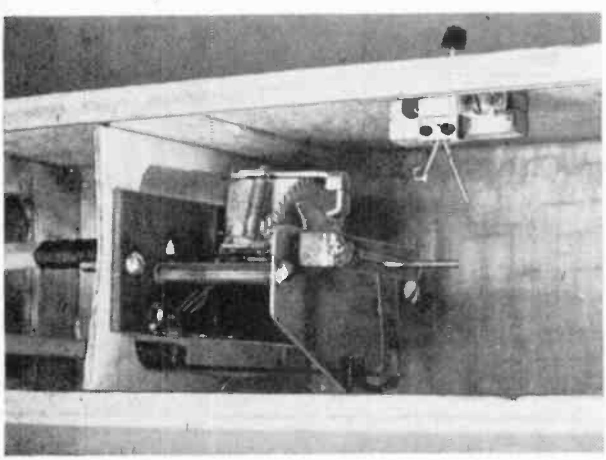


FIG. 3: Engine overflow and filler tubes extend out through sides of fuselage. Gas feed line comes under engine and connects to right side at fuel intake nipple.

small drop of cement to hold the wires in place. Fig. 6 shows the completely wired radio installation. As the batteries last a long time in this circuit, it is worthwhile to solder them in.

Install the escapement rubber. Use 3/16 in. rubber available at any hobby shop rather than the 1/4 in. rubber supplied with the kit. A long piece of solder is a handy tool to install the rubber from the rear of the airplane. Be careful that the escapement rubber does not accidentally become wound around the torque rods. Make a rubber loop by tying a square knot in the rubber. Wind approximately 150 turns into the rubber in a clockwise direction from the rear of the airplane. The escapement is now in a neutral position and the torque rods can be bent as shown on the *Schoolboy* plans and in Fig. 5. Install the wire yokes on the rudder and elevator as shown on the plans and Fig. 5. Install the elevator spring stop on the stabilizer at this time. Now test radio control installation.



Radio Testing: Turn the airplane switch on. The receiver is now operating and waiting for a signal from the transmitter. Turn the transmitter switch on and extend the antenna. If you are standing close to the airplane, the light on the receiver will probably light and the escapement will operate. This will occur without pushing the transmitter key and is a good sign that shows that everything is operating properly, although you are so close to the airplane that the transmitter is overloading the receiver. (Called "swamping.") If you place your hand on the transmitter antenna and move away from the airplane, the light bulb will go out and the escapement will return to neutral. Now press the transmitter key and hold it down. The rudder will move to the right. A little practice with keying and you will be able to obtain any control position very easily without concentrating on the transmitter key or taking your eyes off the airplane model.

Some batteries have a cap at the negative terminal that is held to the zinc battery case only by the cardboard wrapping. This can cause an intermittent connection. If this type of battery is used, the leads must be soldered directly to the zinc case. The negative end cap can be removed by carefully cutting around the negative end of the cardboard wrapping with a sharp knife or razor blade.

Never leave the escapement rubber wound when the airplane is not in use. If left wound, it deteriorates rapidly.

Discard batteries when they reach 2.4 volts. This voltage is measured right at the battery terminals with the receiver receiving a signal, the light bulb lit and escapement energized.

If no voltmeter is available, the approximate battery condition can be determined by noting how many turns can be put into the escapement rubber with new batteries before the escapement will no longer operate. As the batteries deteriorate, the number of turns will decrease.

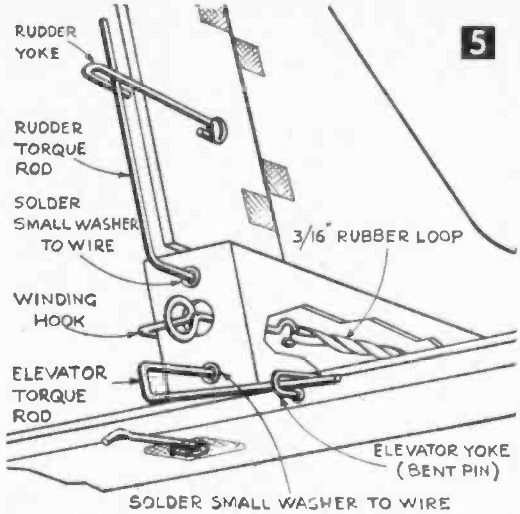
Before the airplane is flown, one more check must be made for distance and tuning. Have an assistant operate the transmitter. Carry the fuselage, minus the wings, approximately 100 or 200 yards away. Have your assistant turn on the transmitter and press the key. With the receiver turned on, the light bulb should light, possibly only dimly. Now partially slide the receiver from the airplane and using a non-metallic screwdriver or tuning wand, slightly rotate the slug in the receiver tuning coil clockwise. The bulb will probably get dimmer. Rotate the slug in the opposite direction. The bulb will first get

FIG. 4: Front of the escapement. Top torque rod is the rudder yoke and left side is up elevator. Note Otarion switch. It is held in place by cementing to balsa facing.

MATERIALS LIST—GETTING STARTED IN RADIO CONTROL

Amt. Req.	Size and Description
1	Model OT 31 transmitter, Otarion, $39.95
1	Model 0-21 receiver, Otarion, $24.95
1	Model 2705 switch, Otarion, $1.98
1	escapement, Babcock Mark II, $8.95
1	airplane kit, Schoolboy by Top Flite. $3.50
2	#E-91 batteries, Eveready or equal @ 50¢
1	engine, .010 Cox, $7.95
1	gas tank, Perfect #1 39¢
Misc.	cement, dope, thinner.

(Note: Otarion Inc., South Post Rd., Ossining, N. Y.
Top Flite Models, 2635 S. Wabash Ave., Chicago 16, Ill.
Babcock Models, Newport Beach, Calif.
L. M. Cox Mfg., Co., 730 Poinsettia, P.O. Box 476, Santa Ana, Calif.



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brighter and then dimmer again. The receiver is now in tune and should not have to be touched again. Before every day's flying, the radio installation should be given a distance check of about 100 to 200 yards. Press the transmitter buttons to get right, left and up as a safety precaution and to be sure everything is working.

Flying Your Airplane: To start the engine, read over the instructions supplied with your engine several times. Obtain the following accessories from your hobby shop:

1. .010 glow plug starting clip with wires.
2. 1½ volt starting battery (large doorbell battery is just fine).
3. Gas tank filler bulb or pump.
4. Red Can-Thimble Drome Racing Fuel (no other type or kind of fuel that we have tried is satisfactory for this tiny engine).

Fill the gas tank with fuel until it runs out overflow.

Close the engine needle valve all the way, open needle valve five turns counter-clockwise.

Hold finger over air intake and turn motor over until fuel line is full. Connect the plug clip and batteries to engine.

Turn engine over by hand until top of piston is up as far as it goes. Prime into exhaust port with racing fuel.

Hook starter spring over propeller and wind propeller about three turns, then release sharply. Engine will spin over in counter-clockwise direction.

Engine may start. If it does, adjust engine needle valve for top speed.

If engine starts, runs fast, then stops, open needle valve a turn, prime engine and try again. If engine just pops, it may be flooded. Crank several times and/or turn needle ½ turn clockwise.

Engine will start after several cranks. Adjust needle valve for top speed, remove glow plug battery clip. Engine will continue to run. You are ready to fly.

Have a friend take your plane about 30 ft. from you, nose pointed into the wind. Turn on the switch in the airplane. Turn on the switch in the transmitter.

If everything is working, have your helper run with aircraft, then release plane without throwing hard. Aircraft should rise and continue to rise. Plane will turn in the direction you send. If you hold either right or left, plane will go into a spiral and lose altitude. This is the way you bring your plane down under power.

Now that you have started in Radio Control, there are many other R/C systems that you may want to try—proportional, multi and many more. Rudder and up elevator only, as in the *Schoolboy*, will give you many pleasant hours, but the sky's the limit. Good luck!

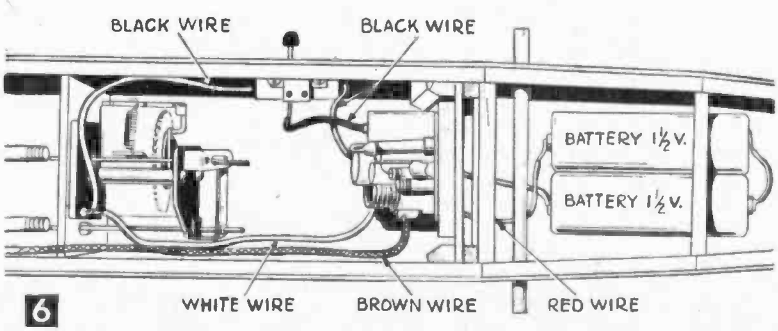

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FIG. 1: Items in foreground are all that are needed to convert the flashgun into a more dependable, economical B-C unit; 22.5-volt "B" battery, small piece of friction tape, plastic pill bottle, rubber bands, 250 *mfd* 25-volt capacitor, small bolt, two nuts, and sleeving.

Souped-Up Pro Flashgun—

A Bargain for Better Pix

By CLARENCE JONES

FOR less than $10 you can have a professional flashgun with souped-up firepower, halting those embarrassing duds and bringing improved lighting into your pictures —a little like having your cake and eating it, too.

In the past few years, American camera bugs have clustered like moths to miniature flashguns. Therefore the market is flooded right now with used, professional-type trade-ins. Camera stores are selling them cheap.

But you won't see a professional photographer making the switch to miniatures. Why? Because the little folding-fan guns are fragile, and most are very limited in what they can do. But they're selling well because they're small enough to put in your pocket and they almost never misfire.

The secret of their dependability is their battery-capacitor (B-C) power units.

Electric current from a flashgun ignites a tiny wire filament inside the bulb. The white-hot filament, in turn, ignites a primer coated on the filament support wires. The primer then ignites the wire foil that produces most of the light from the bulb. It takes about three amps to heat the filament white-hot in one-thousandth of a second, as it was designed to do.

Fresh "C" and "D" size flashlight batteries can deliver about 5 amps. Penlite cells produce about 3½ amps.—just over the minimum.

A few shots or a few months on the shelf and the batteries may drop below the 3-amp. minimum. Then the entire chain reaction is delayed by a slow-heating filament. Or the filament may not get hot enough to trigger the primer and the bulb doesn't fire.

A B-C unit uses one of the new miniature batteries that supplies 15 or 22.5 volts in a package smaller than a standard "C" cell. Hooking one of the batteries to a 250 *mfd* capacitor lets the battery pump just the right amount of current into the capacitor. Then the charge is stored, waiting for the shutter to trip.

When the shutter opens and completes the circuit, — a full charge leaps across the filament, causing the entire chain reaction within the bulb to come off exactly on schedule.

Poorly lighted pictures are often the result of bulbs that got off to a slow start and didn't reach their peak until the shutter was closing.

The capacitor in a B-C unit unloads its charge instantly and the battery immediately begins building up a new charge. With a fresh battery, charging of the capacitor is almost instantaneous. As the battery gets weaker, charging time increases. After about a year of steady use, the battery may take longer to charge the capacitor than it takes to change bulbs and wind film for the next shot. Then it's time for a new battery.

One of the professional guns can be converted to B-C firepower with a 250-*mfd* 25-volt capacitor (available from Allied Radio Corp., #19L270 for $1); a plastic pill vial, a small stove bolt and two nuts; a patch of friction tape, and two rubber bands (Fig. 1).

Don't pay more than $10 for a used trade-in. Camera stores don't trade customers new equipment for old without taking in some cash. The best folding units cost about $11.

FIG. 2: First, drill three small holes in the bottom of the vial. The one in the center should be the same diameter as your stove bolt. The other two are drilled close to the edge of the bottle on opposite sides, large enough for lead wires on the capacitor.

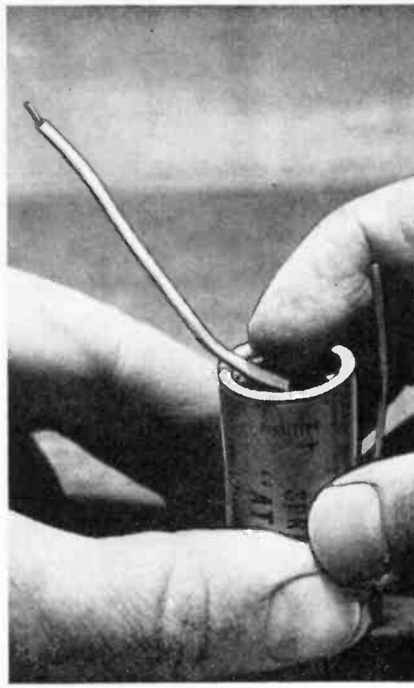

FIG. 3: Dress negative lead wire of capacitor closely up the side of capacitor, toward positive end. Put a sleeving on the positive lead. If you have no sleeving, slide the insulation from a piece of bell wire and use it. Cover positive end of capacitor with friction tape. Install the stove bolt in the vial with the head inside the bottle.

PARTS LIST

No. Req.	Size and Description
1	25-wv, 250 *mfd* capacitor (Allied Radio Corp., #19L270, $1.02)
1	7-dram plastic pill vial
1	22.5-volt "B" photoflash battery
1	¼-in. stove bolt, about 1/16 or smaller
2	nuts to fit above bolt
1	3-in. strip of insulation from common bell wire
2	small rubber bands

The Heiland flashgun being converted in the accompanying pictures cost the author $6. It was in a cardboard box full of used flash equipment. The price tag said $12.95, but the camera store was glad to get $6.

A professional-type unit will have a cylindrical battery case for size "D" or "C" flashlight batteries; a bracket from which the flashgun can be quickly released for off-camera lighting; a removable external cord connecting the flashgun to the camera synchronization fitting, and a household-type female outlet for plugging in extension flash.

Taking the flash off the camera and holding it higher than your subject's head eliminates the harsh, pasty skin tones that are the mark of amateur flash pictures. Overhead artificial lighting and sunlight have accustomed our eyes to regard the shadows from elevated lighting as natural, on-camera flash lighting unnatural.

The most expensive folding flashguns have a feature for swiveling the unit so the light will bounce off the ceiling. With the flash of the camera, pointing it at the ceiling provides the same effect.

The extension outlet on a professional gun provides a way to add back or side lighting to flash pictures. The B-C unit described here will provide enough juice for firing a bulb at the camera and igniting another simultaneously at the end of a 50-ft. extension cord.




FIG. 4: Slide the capacitor into the vial with the positive end toward the stove bolt. Dress the wires so the negative lead runs up the side of the capacitor and out one of the holes in the vial. The insulated positive lead runs out the hole on the opposite side.

FIG. 5: Now crimp the negative wire to the stove bolt and tighten the nuts to insure a good connection, but be very careful not to crack the plastic. The stove bolt should be short enough so that the second nut can be threaded only partially. This recess holds the negative pole of the battery.

FIG. 6: Place the negative pole of a 22.5-volt battery in the recess. Then run the insulated lead wire from the positive end of the capacitor up along the side of the battery. Leave the tip bare and wedge it tightly under the positive battery pole strip.

FIG. 7: Secure the lead wire against the battery with two rubber bands. The wire is stiff enough to hold the battery firmly in place. Slip the completed unit into the battery case and it's now ready to be fired.

Off-camera flash leaves just one hand to aim the camera and trip the shutter. It may seem awkward at first, but aiming the flash can provide even lighting for both foreground and background in your pictures. With a little practice, you'll scowl at on-camera flash poppers, as beginners.

Converting one of the professional flash-guns takes about 15 minutes. For "C" size battery guns, use a 7-dram plastic pill vial. A taller vial with a larger diameter is needed for a "D" size unit.

Clothespin Switch

A PLASTIC, spring-loaded clothespin makes a nifty emergency switch for *low voltage* circuits. It offers something more sophisticated than a pair of wires which you touch together when you don't have a switch. And it has some merit and application even when the situation isn't an emergency. Furthermore, you are offered a choice of several modes of operation.

The clothespin switch is a momentary contact, normally open switch. You depress the contact or handle end to close the circuit. The pin I used had the necessary holes in the handles. Simply fasten the stripped wire ends under nuts serving as terminals with small machine-screw heads serving as switch contacts. Fasten electrical tape over the nuts for insulation, and heed this safe rule: *Don't use this switch in circuits with more than 20 volts or 1 ampere.*

To make a normally closed momentary contact switch, attach the machine screws and nuts at the other end of the pin.

To convert the normally closed momentary contact switch to a regular on-off switch, simply stick a piece of *Bakelite* or thick cardboard between the contacts to effect turn-off.
—F. H. FRANTZ.

Which Way Is Forward?

Get the most from your TV or FM antenna

By FRED BLECHMAN, K6UGT

ARE you getting the proper performance from your TV or FM antenna? FM stereo multiplex and color TV reception especially require a good signal at the receiver for proper operation, so the many factors which can attenuate a signal on its way to the receiver deserve special consideration. Here are some hints that can help you insure that your antenna installation is doing the job it was designed to do.

Aiming the antenna: A surprising number of antennas are pointed in the wrong direction—usually backwards! Since the front-to-back ratio of many simple antennas is not very high, you can easily have your antenna backwards and still get a usable (though reduced) signal.

Which way *is* forward? The following rules-of-thumb usually apply:

(1) The shorter elements are the "directors," and should be aimed toward the station. The "reflector" elements are behind the "driven element," to which the "twinlead" attaches. See Fig. 2.

(2) If "vee" shaped elements are used, the open end of the vee should point to the station.

(3) On antennas with an array of elements forming a screen or a fan, the small elements are forward, and the screen acts as a reflector and also shields the pick-up elements from signals at the rear, thus minimizing ghosts and co-channel interference.

(4) For a particular channel or frequency, you may find that the cleanest signal is actually obtained when the antenna is aimed to one side of the station, due to local topography.

(5) In many localities the TV stations are located in one spot, but the FM stations are scattered. In this case, a turnstile-type FM antenna gives essentially equal pick-up from all directions. With directional antennas, the use of an antenna rotator might be a necessity, especially in fringe areas.

Twinlead tactics: (1) Make sure the twinlead is properly attached to the antenna terminals, both at the antenna and at the re-

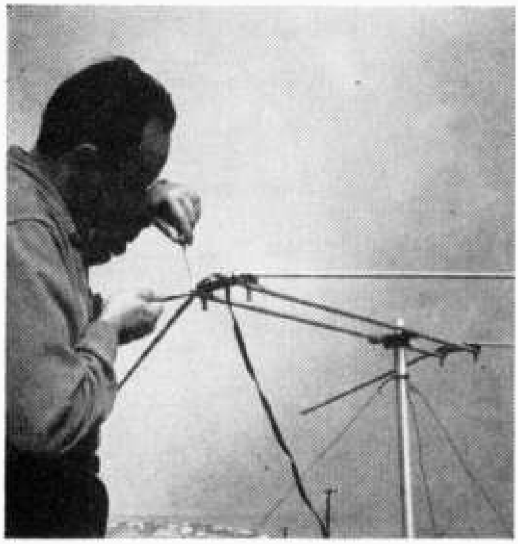

FIG. 1: Even the simplest of antenna configurations may require periodic cleaning and adjustment to obtain peak performance. A better picture is the reward.

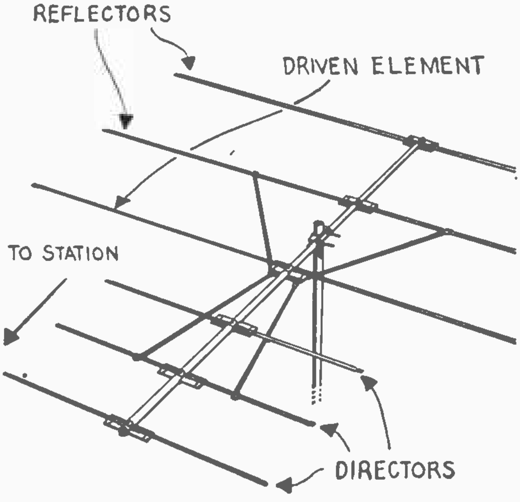

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FIG. 3: The open end of the double vee should face toward the transmitting station, like the open mouth of a funnel.

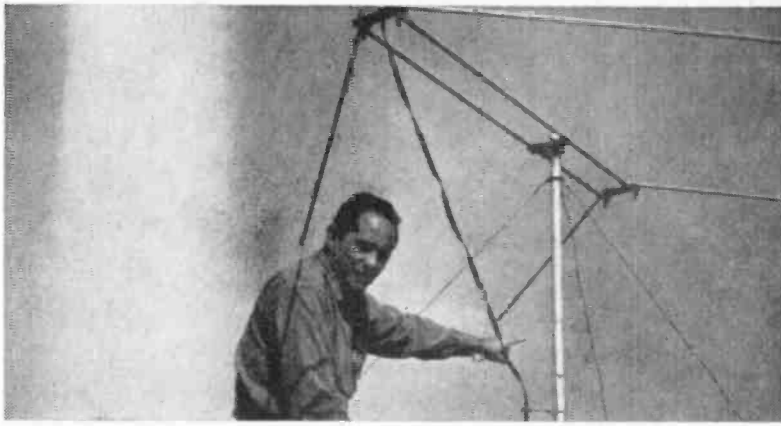


FIG. 4: An antenna rotator is controlled from inside the house and permits you to point the antenna where it's needed.

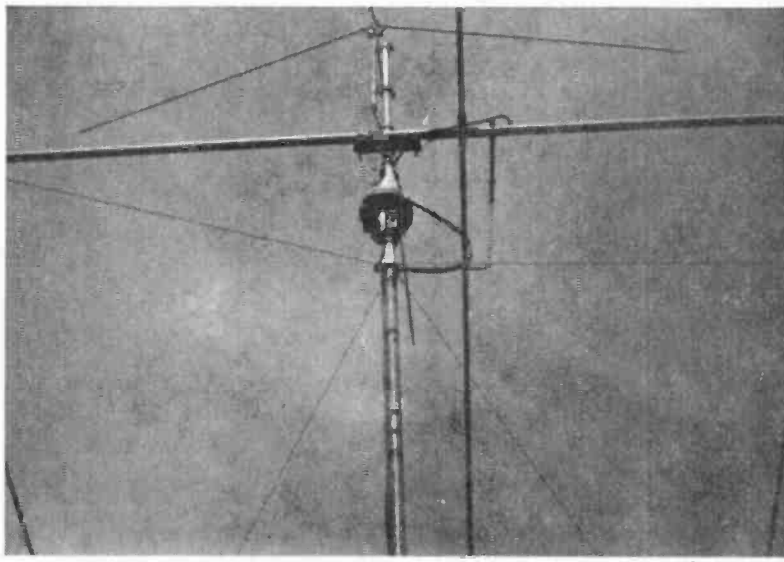
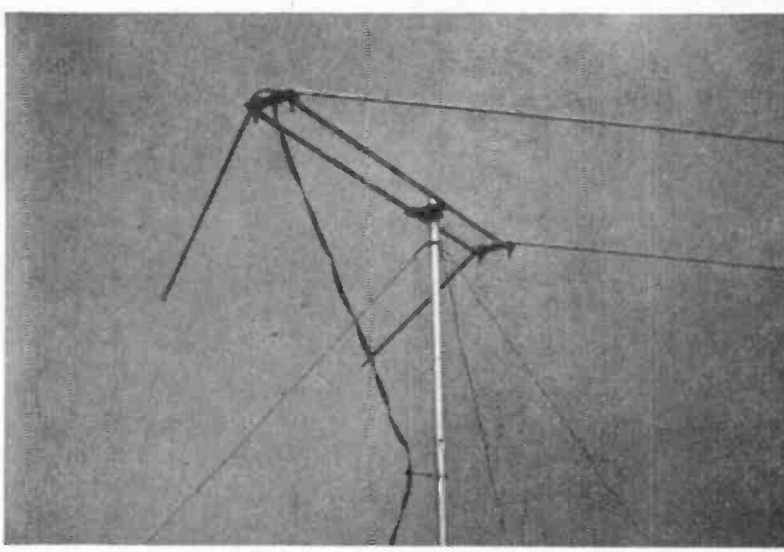


FIG. 5: Note that in the above installation, the mast is supported with guy wires and the twinlead is twisted to prevent whipping. Whipping often causes trouble.



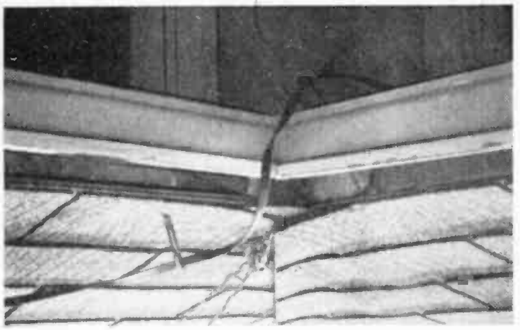


FIG. 6: Route the twinlead away from rain gutters and metallic masses. Use screw and nail standoffs.

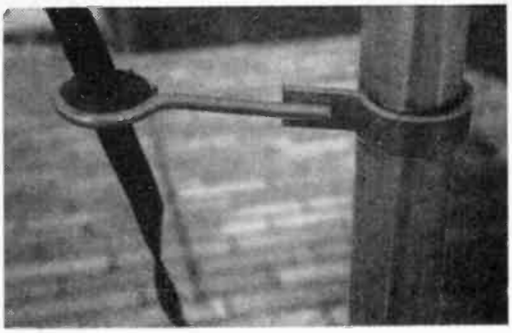


FIG. 7: Don't tape the twinlead to the mast. It's a sure way to lose some signal. Standoff shown snaps on.

ceiver. Corrosion, broken wires and loose connections cause a loss in signal strength at the receiver.

(2) Do not splice additional needed length to the twinlead; instead use a longer length of unspliced twinlead. A splice usually creates a "bump" in the signal path.

(3) Do not use a longer length of twinlead than required. The excess lead results in unnecessary signal loss, and if the excess wire is coiled to save space, additional losses occur.

(4) Do not route twinlead near any metal rain-gutters, pipes, vents, etc., since the signal will leak off the twinlead and the balance of the currents in the parallel wires of the twinlead may be destroyed. Use standoffs to route the twinlead around such obstructions.

(5) Twist the twinlead at least one turn in each three feet of length. This discourages spurious signal pickup, and helps prevent the wire from whipping in windy weather, which could cause picture flutter. Don't twist the twinlead too tightly or you will overstress the wire.

(6) Do not tape the twinlead to the antenna mast! Use mast standoffs to guide the twinlead parallel to the mast, but not in contact.

(7) Never paint the twinlead. If the paint has a metal base, the signals may be coupled to the paint and attenuated or passed to ground.

(8) Replace the twinlead every three to five years, or sooner if the insulation starts cracking: this may also be time to replace the antenna itself.

Antenna antics: (1) Keep the antenna as far as practical from obstructions, especially metal. This is particularly important in attic installations, where heating and cooling ductwork may seriously affect antenna efficiency, create ghosts, and disrupt reception in some directions.

(2) Replace the antenna every three to five years, especially in corrosive and fringe areas.

(3) The normal cure for a weak TV signal is to turn up the contrast to compensate. This is like driving a car at 90 *mph*, and shortens the life of the receiver. It's much wiser, and easier on the eyeballs as well as the receiver, to insure yourself that your antenna installation is providing the best practical signal. This may mean getting a better antenna if the one you have is marginal.

With a little attention to the above considerations, you'll know that your antenna system is operating at peak efficiency, thus allowing the receiver a fighting chance to do its best.

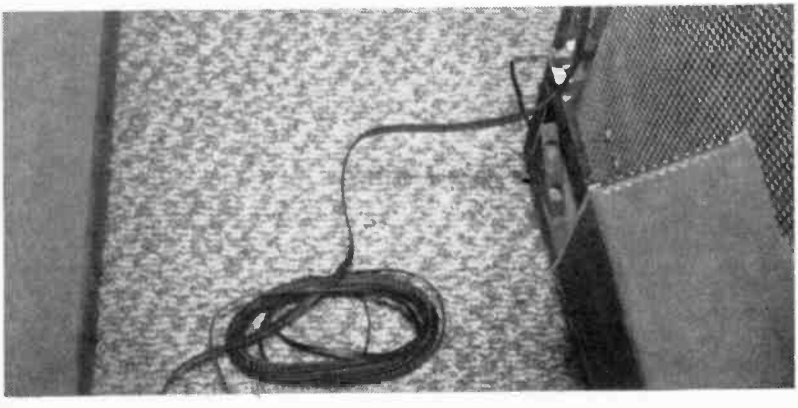


FIG. 8: It may seem wasteful to cut all that lovely twinlead, but that coil behind the TV set is robbing your signal.

One-Transistor Experimental Tuner

By WALTER TEMCOR

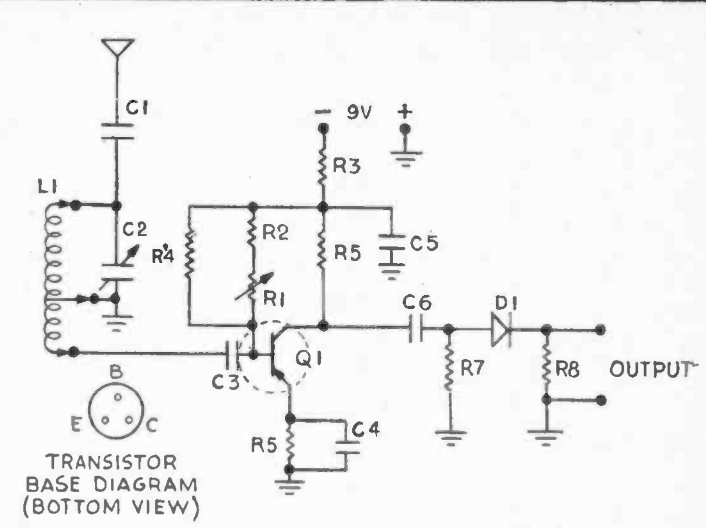


FIGURE 1 SCHEMATIC

Our experimental one-transistor tuner picks up short wave broadcasts. With a broadcast coil it is red hot. Parts cost about $5

WANT to experiment with transistor tuners? Here's a good starter. It's a superb performer on broadcast and will pick up short wave. Performance on short wave is limited, but it will get the high-powered Voice of America broadcasts, and on occasion you may pick up Moscow or London. The tuner is presented as a bread-board project that makes experimentation easy and keeps the cost down. The circuit is shown in Fig. 1. The unit is assembled on a miniature perforated board. Figures 2 and 3 show top and bottom views. The clip leads connect to the coil, not shown. The two home-made short wave coils are shown in Fig. 4. The broadcast coil is a store-bought type. You can use any kind of amplifier that you have available in place of the amplifier shown in Fig. 5.

Construction: Use Figs. 1, 2, and 3 for guidance in construction. Most of the connections are made with the component pigtails on the bottom of the perforated board. Note that the frame of tuning capacitor C2 connects to ground. The ground symbol in Fig. 1 refers to common connection to the ground bus and is used to maintain simplicity in the diagram.

R1 is held in place by its connection in the circuit. This is a sensitivity control, and you simply adjust it for best performance. The setting may vary slightly with frequency, but in general it won't have to be readjusted very often.

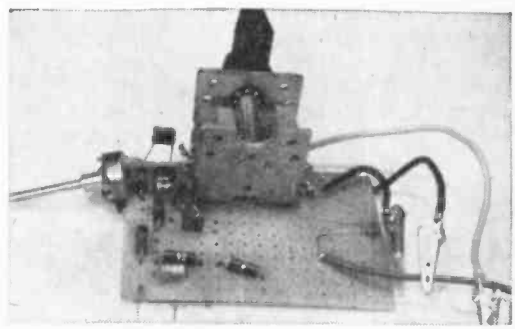


Fig. 2: Top view of the tuner. Note that the potentiometer is supported to the mounting board only by its connections.

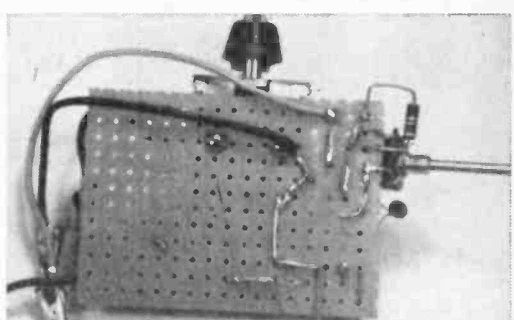


Fig. 3: The under-chassis view shows the clip leads for coil connections. Using clip leads facilitates coil changing.

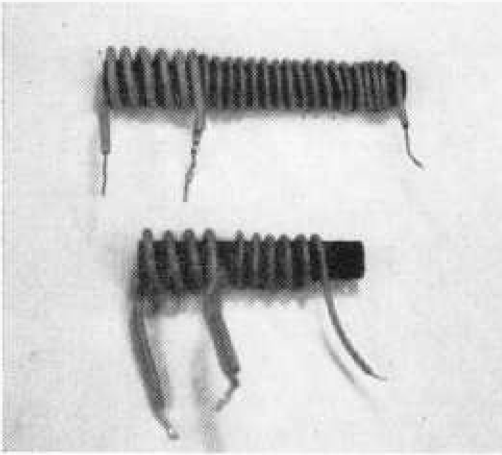


Fig. 4: The coils, wound on ferrite with insulated wire.

The coils are constructed on pieces of ferrite rod. Use Fig. 4 and the data in the parts list for guidance. To break the ferrite rod clean, measure off the required length, scribe the break point with a shallow hack saw cut on one side, and break the rod at this point, using both hands with one thumb held opposite the saw mark. The length of the ferrite cores is not critical.

You may want to add battery and amplifier input lead extensions to the basic tuner board. The author made these connections directly to the amplifier and picked up battery power from the amplifier which uses a 9-volt battery. It should be emphasized that any audio amplifier may be used. You can even use the audio amplifier from a table model radio.

Comments: The transistor is a 99 cent-er. The tuning circuit and biasing arrangement is conventional. The tuning circuit consisting of L1 and C2 receives the signal from the antenna through C1. The coil connected to the clip leads and the setting of C2 determine the frequency which the tuner will receive. The signal passes through C3 to the base of Q1. C3 isolates the dc bias on the base of Q1 from the tuning circuit ground. Base bias is provided via the resistor combination of R1, R2, and R4. R2 limits the bias to safe ranges, regardless of R1 setting. R5 provides collector bias and is part of the Q1 load. R6 stabilizes Q1 and C4 provides a bypass path for RF. R1 and C5 decouple the tuner from the auxiliary amplifier if you pull power from it, as the author did.

The signal at the collector of Q1 is RF. This signal is fed through C6 to the detector diode D1 and the associated resistors R7 and R8. The diode output is audio. The usual bypass capacitor across the output, is omitted because amplifier input capacitance generally provides the required bypassing like for free.

The antenna requirement is 3 to 10 ft. for broadcast and about 50 ft. for short wave. You'll also need a ground for short wave.

The amount of experimentation that can be performed is unlimited. You can try various feedback schemes to improve sensitivity. You can experiment with the effects of the value of the collector load resistor R5 if you wish, and you can even try a coil as a load. The setting of R1 for best performance will vary somewhat with the value of R5.

You can change different types of transistors (stick to pnp) to determine effects on performance. You can try lower battery voltages. Again, the setting of R1 will be different.

Experiment with the coils, too. You can decrease turns at top and bottom of the coils, or move turns closer together. You can try the circuit without the cores in the coils, and you can experiment with permeability tuning by moving the cores in and out of the coils.

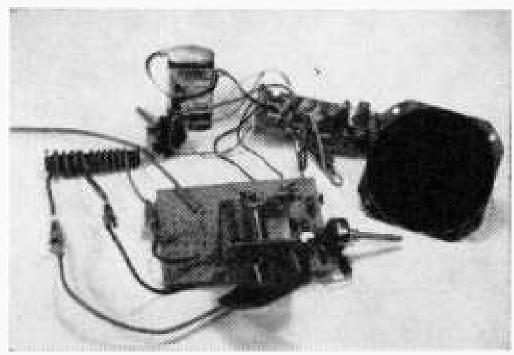


Fig. 5: The finished unit looks unfinished, but is actually shown hooked up with an amplifier and speaker. Battery serves both.

MATERIALS LIST—ONE-TRANSISTOR EXPERIMENTAL TUNER

Desig.	Size and Description
	½-w carbon resistors (10% Tolerance)
R3, R6	1 k
R5	2.7 k
R8	4.7 k
R7	10 k
R2	47 k
R4	220 k
R1	1 megohm miniature potentiometer (Lafayette VC-38)
C1, C6	100 mmf 75-v miniature ceramic capacitor
C3, C4, C5	.01 mfd 75-v miniature ceramic capacitor
C2	365 mmf variable capacitor (Lafayette MS-214)
Q1	T2163 transistor (Philco)
D1	1N60 germanium diode (Raytheon)
	2$\frac{7}{16}$ x 3⅜ miniature perforated board
	pointer knob (Lafayette KN-40)
	minigator clips (Mueller 30), 3 required
L1	(A) broadcast (Lafayette CO-89)
	(B) 2—7 mc—23 turns (tapped at 6th turn) of #22 insulated hook-up wire on 2⅞" length of .33" diameter ferrite rod.
	(C) 5.5—15 mc—10 turns (tapped at 4th turn) of #22 insulated hook-up wire on 2" length of .33" diameter ferrite rod.
	(Lafayette MS-332 is .33 dia. x 7½" long ferrite rod)
B1	9-v battery (Lafayette BA-2)
	Amplifier shown in the figures is PK-522 with VC-27 volume control and switch and SK-66 loudspeaker
	Parts for this project were obtained from: Lafayette Radio, 111 Jericho Turnpike, Syosset, L. I., N. Y.

"Bleep-Bloop-Blaat-Plunk"

By JOHN D. LENK

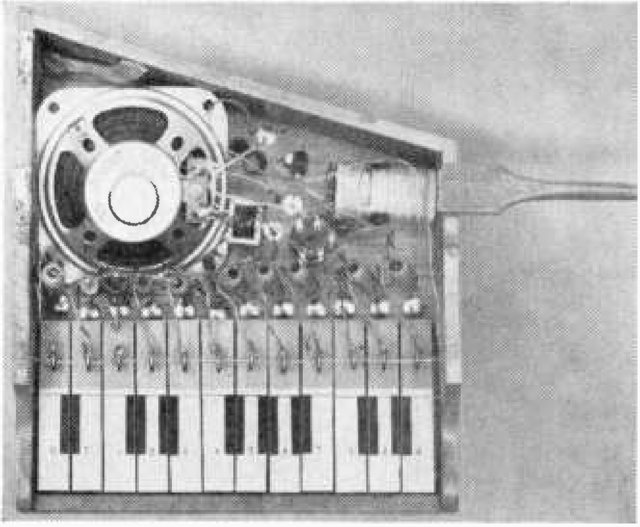


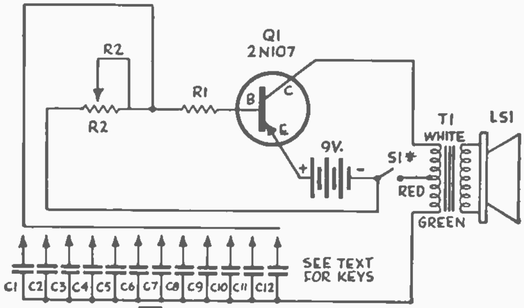
FIG. 1. With the lid removed, the wiring is clearly seen. Notice that the wire loops between the keys and the capacitors provide additional flexibility and prevent the wire from breaking under use.

A one-evening project that will keep the kids occupied for months after, is a toy electronic organ

WHILE scarcely intended for music lovers, this toy organ has several engaging features. For one thing, it is inexpensive and easy to construct. It employs battery power, making it perfectly safe for children.

If you happen to have one of these toy pianos around, you can make use of a toy which may no longer have any fascination for the children. If you don't have one now, you're not out over $2 for the piano. Should you want to use the parts for something else, you can easily restore the instrument. Although it is not intended as a true musical instrument, this transistor organ will prove to be an amusing and durable toy for the entire family.

It may be necessary to modify the construction data somewhat, since there are a variety of toy pianos on the market. No particular difficulty should be encountered however, if the exact circuitry is used, and construction is essentially like that shown in the illustrations. The only item that will require any special treatment is the selection of capacitor values. The capacitors determine the tones



2 SCHEMATIC DIAGRAM

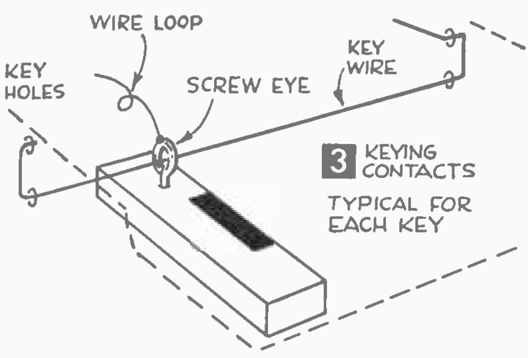
MATERIALS LIST—TOY ORGAN

Desig.	Size and Description
C1	.033 mfd capacitor
C2	.022 mfd capacitor
C3	.02 mfd capacitor
C4	.01 mfd capacitor
C5	.008 mfd capacitor
C6	.006 mfd capacitor
C7	.004 mfd capacitor
C8	.003 mfd capacitor
C9	.0025 mfd capacitor
C10	.002 mfd capacitor
C11	.0015 mfd capacitor
C12	.001 mfd capacitor
LS1	3-in. loudspeaker (Quam 3A05 or equal)
Q1	2N107 transistor (G.E. or equal)
R1	10-ohm resistor, ½-w, carbon
R2	500,000-ohm potentiometer, with switch
T1	500-ohm center-tap primary/ 3.2-ohm secondary matching transformer
	Battery #217 Eveready or equal, 9-v

or notes produced by the corresponding keys. Since run of the mill capacitors are not usually of close tolerance, it may be necessary to connect capacitors in series and parallel until the correct value is obtained.

The first step in construction is to remove the chimes or "noise maker," and the piano top. In the unit shown, the top was split into two sections; the back section being hinged to simulate a grand piano. The other half of the top is glued to the sides, and is provided with a front piece which extends down over the keys. Raise the hinged top, then remove the top by extracting the nails or screws which secure the hinges to the sides. Although it is not necessary to take off the hinged top, removal makes things easier to handle. Using a flat screwdriver or similar tool, carefully pry the top (which holds the chimes) from the sides. It is also possible that the top may be held in place with both nails and glue. Once the top is removed, remove the chimes by loosening the two screws which hold them in place. The screws may be left to cover up the holes. However, for a more decorative effect, glue dressmakers jewels over the empty holes.

Next, remove the staples which hold the wooden hammers to the keys. The hammers

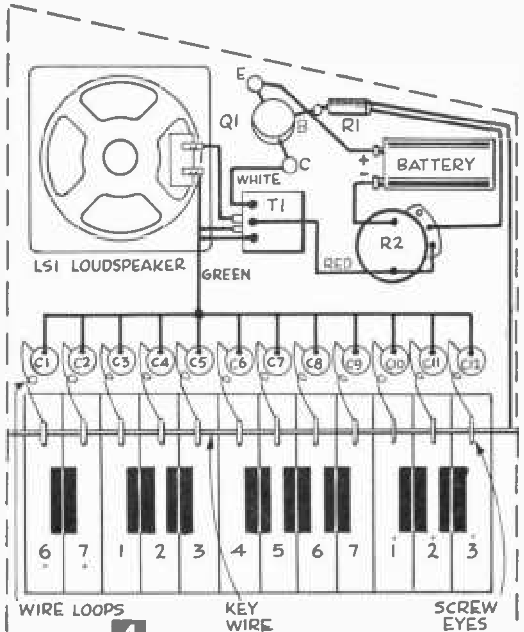


3 KEYING CONTACTS

TYPICAL FOR EACH KEY

are of no consequence, and get in the way. Place a picture screw in each of the keys. Turn the screws in so that they are approximately the same height and are aligned with the keys (Fig. 3). Drill two holes in each side of the piano as shown in the sketch. Pass the hook-up wire through the holes and the picture screws. Draw the wire tight and secure it by wrapping the ends. Connect and solder the wire loops to each of the picture screws. Secure the capacitors to the bottom of the piano. Solder the top leads of the capacitors together, and the bottom leads to the corresponding wire loops. Make certain that the wire loops have one full loop as shown in Fig. 3.

Mount the remaining parts as shown in the pictorial and schematic wiring diagrams, Figs. 2 and 4. The loudspeaker, transistor and resistor R1 are all mounted with screws or



4 WIRING DIAGRAM

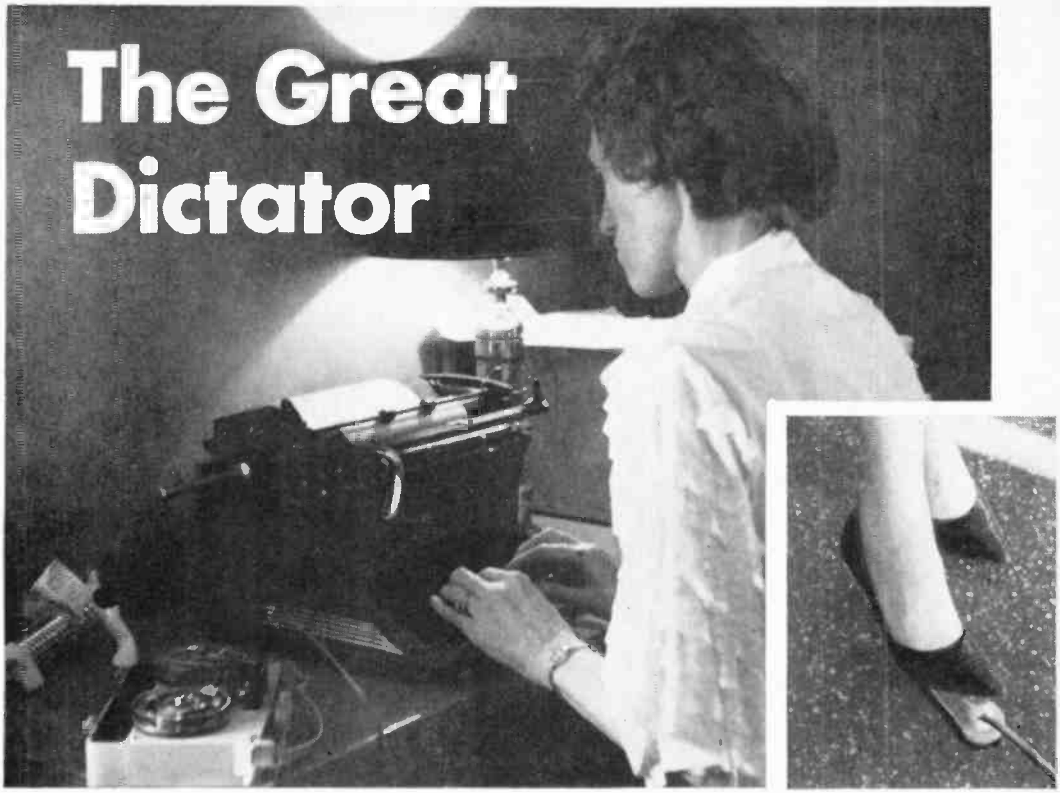
thumbtacks. Potentiometer R2 requires a hole for its shaft. The battery and transformer T1 are held in place with conventional brackets. If the piano has a one piece top, it will be necessary to cut holes for the loudspeaker. With a hinged top, the loudspeaker should be tilted.

Once the parts are mounted, connect and solder them as shown in the diagram (Fig. 2). Use any suitable hook-up wire. The organ is now ready for a trial. Do not replace the top until the organ is functioning satisfactorily. Rotate the potentiometer shaft which closes switch S1. Depress the extreme right hand key. Adjust the potentiometer until a high pitched tone is audible. In turn, depress each of the keys from right to left noting that the tone or note drops in frequency with each key. As we stated before, the exact capacitor values may not be as shown in the parts list. The values shown in the parts list were chosen to approximate an octave and a half or 12 consecutive notes. In addition, these 12 notes can be set in any range by means of potentiometer R2. By selecting the capacitor values and resetting R2, the 12 consecutive notes can be made to cover any desired scale. If your piano has more or less (often they have only eight) keys, the corresponding number of capacitors must be used.

The organ should now be ready to play simple tunes. It should be noted that by depressing two keys simultaneously, an intermediate tone will be produced.

Remember one point, this is a toy for children—not a substitute for an expensive quality instrument.

The Great Dictator



Portable tape recorders are just fine when it comes to dictating. The trouble begins to brew, however, when the typist must take her hands from the keyboard to operate the machine . . .

By FORREST H. FRANTZ SR.

THOSE little portables look fine when you read your letters into 'em! Madam secretary even looks forward to transcribing from the tape. Then she has to stop the machine so the hands can catch up, and this means pressing a stop button on the recorder. By the time she has done so, the tape has advanced further than she can remember, so she has to rewind a bit, and the trouble starts. You can eliminate this problem by constructing the foot switch and making the simple modifications shown here. The total cost for the entire unit, including the tape recorder is about $18. What's more, the recorder can continue to function as it did before the modification was made!

The recorder used as a base for this project weighs two and one-half pounds and measures 6 x 8¼ x 2¾ in. It contains a four-transistor amplifier and features dual track recording. The latter feature permits recording of about twenty minutes of dictation on a 300-ft. length of tape. Playback may be through the loudspeaker or through an earphone. The placement of the remote switch in a recorder which differs from this model may be different, but otherwise the modification of most battery-operated recorders up to $30 price range is about the same. The foot switch is the same, of course, regardless of the tape recorder used.

Recorder Modification: The required tape recorder modification is the installation and connection of a closed circuit jack in series with the motor battery lead. The jack is mounted on the top panel of the recorder as shown in Fig. 1. Locate a position for the jack hole which will not interfere with other parts.

Remove the screws holding the recorder in its case and the knurled screw which holds the battery compartment cover. Remove the

FIG. 1: Locate the jack for the foot switch on the front panel. Place it so the foot switch cord will not interfere with normal tape recorder operation.

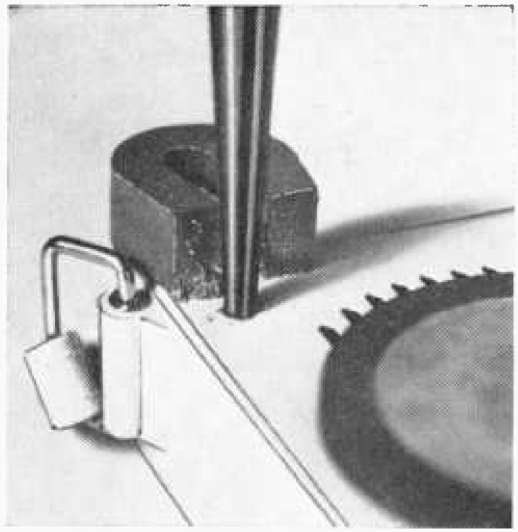


FIG. 2: A small magnet, placed near the hole while drilling and reaming, will prevent chips from causing short circuits when the conversion is completed.

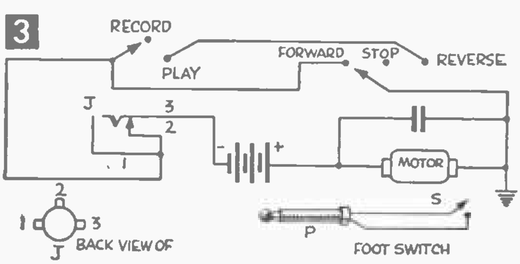
MATERIALS LIST—GREAT DICTATOR

Desig.	Size and Description
Jack	subminiature phone jack MS-282
Plug	subminiature phone plug MS-281
Switch	normally open momentary contact switch Grayhill 30-1
Recorder	RK-125AL portable or equivalent
Door stop	
5′	parallel lamp cord
	All parts available from Lafayette Radio, 111 Jericho Turnpike, Syosset, L. I., N. Y.

recorder from the case. Mark off the center position for the jack hole. Place a small piece of wood ¾ in. thick in the case under the jack position and return the recorder to the case. The small piece of wood will prevent damage to the case when you drill through the top of the recorder. Place a magnet near the spot where the hole is to be drilled (Fig. 2), and drill a 3/32 in. hole. The magnet will catch metal chips that might otherwise get into the recording head area. Be careful to keep the magnet away from the recording head. Enlarge the 3/32 in. hole with a 3/16 in. drill, then enlarge this hole to the required diameter with a taper reamer as shown in Fig. 2.

An insulating shoulder washer must be used to insulate the jack from the metal recorder base. The diameter of the jack hole required is the diameter of the shoulder on the particular insulating washer which you use. The shoulder washer on hand had a 5/16 in. shoulder diameter. You can use plain insulating washers if you don't have a shoulder washer. In this case, you'll have to enlarge the hole to slightly larger than 5/16 in., and do a careful centering job to be sure that you have the jack insulated from the metal recorder base.

Remove the metal scraps which have fallen



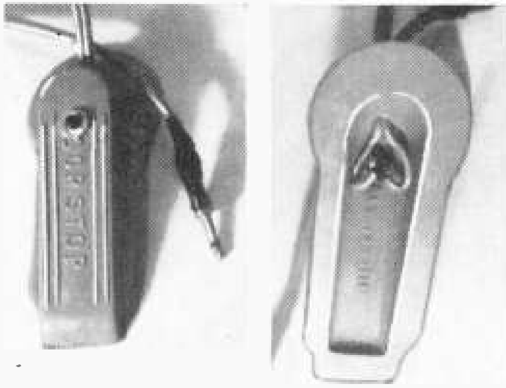


FIG. 4: Left, A rubber door stop is drilled and counter bored to receive the miniature switch. Notice that the plastic plug body is not used; the plug is taped. Right, Underneath wiring is brought through another hole in the rear of the door stop.

into the case with the magnet and a brush as you complete each drilling and the reaming operation. Use a brush and your fingers to remove metal scraps from the speaker magnet and frame. Place the insulating shoulder washer on the jack (shoulder up) and insert the combination in the hole. Place a flat insulating washer over the jack bushing on the top of the recorder and fasten the hex nut.

Unsolder the negative 1.5-volt battery lead at the battery holder. Strip enough insulation off this lead to permit connection to the jack shell and circuit closing contact terminals. Connect a 10-in. length of hook-up wire from the jack tip contact terminal to the negative terminal on the battery holder. The circuit arrangement is shown in Fig. 3. Without a plug in the jack, the recorder operates as though no change had been made. When the foot switch plug is inserted, the battery to motor circuit is broken and the foot switch must be depressed to complete the motor drive circuit.

Check again to be sure that all of the metal scraps from the drilling and reaming operations have been removed from the inside of the case. Replace the 1.5-volt battery holder and recorder in the case. Fasten the screws. This completes the recorder modification.

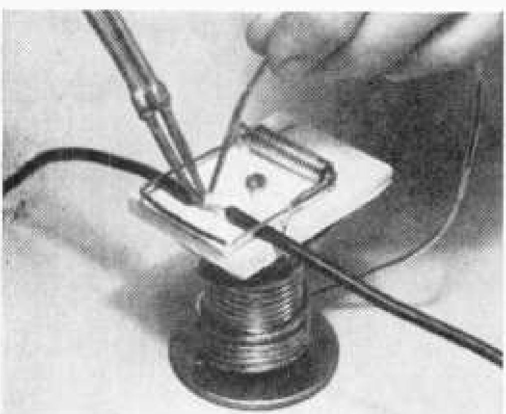
Foot Switch Construction: The foot switch consists of a normally off momentary contact switch mounted on a rubber door stop. Use Fig. 4 for guidance in construction.

Drill a ¼ in. hole on the top face of the door stop and countersink the underside with a pocket knife till you can push the switch through far enough to fasten the hex nut on the switch bushing on the top side. Be careful not to overdo this countersinking operation. The door stop is made of relatively soft rubber, and unless you exercise some care you may go too far with the countersinking.

Before you mount the switch, drill a 3/16-in. hole for the cord on the back side of the door stop. Connect a 5-ft. length of parallel lamp cord to the switch. Connect the other end of the cord to the miniature plug. Don't attempt to use the plug shell, because the lamp cord is too large for it. Simply solder the leads to the plug terminals and cover with enough tape to protect the connections and to form a "handle." This completes construction of the foot switch.

Use: To use the recorder with the foot switch, set the "Play-Record" switch on the recorder to the desired function. Set the "Forward-Stop-Rewind" switch to forward, and set the volume control to the normal level. Depress the foot switch to make the tape advance; release the foot switch to stop the tape.

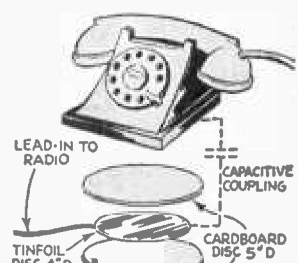
Caution: The Forward-Stop-Rewind switch should be set to stop when the recorder is normally not in use. The foot switch simply turns the motor off. The amplifier is connected to the 9-volt battery whether the foot switch is depressed or released when the "Rewind-Stop-Forward" switch is left in the forward position.



Mousetrap Third Hand

• Need an additional hand to hold small wires and parts while you solder them? To make certain an extra hand is always available when needed, mount the spring mechanism of a mousetrap on the top of your spool of solder as shown. Screw-fasten the mechanism to a tight-fitting cork inserted into the center of the spool.—JOHN A. COMSTOCK.

Telephone Receiving Plate for Radios



• You can use this receiving plate with a desk telephone instead of an outdoor antenna for your radio to pick up radio signals. This highly efficient device is based upon the principle of electrostatic coupling; that is, the radio receiving plate and telephone base act as a capacitor which transfers radio signals picked up by the exterior telephone lines to the lead-in and thence to the antenna input of the radio receiver. Make the radio receiving plate by cementing a disc of tinfoil, to which a length of lead-in wire has been attached, between two discs of insulating material, such as heavy cardboard. Place the assembled disc under the base of a desk telephone and connect to the antenna input of the radio receiver. This antenna will pull in distant stations with amazing strength.—J.A.C.

"...Reading You 5 X 9, OM..."

FIG. 1. This preselector will add 20 db of signal at 28 mc, and nearly 30 db at 14 mc. It's a must for the HAM or SWL with a lower-cost receiver!

You can increase the performance of any 10-15-20-meter receiver with this low-cost Nuvistor Preselector

By JOE A. ROLF, K5JOK

A LOW- or medium-priced short wave receiver comes with built-in problems. When the band gets a little sticky, the stations seem to pour in one on top of the other. You sit there with the earphones glued to your head and you try vainly to separate the stations . . . can't be done. At times like this, even a good bandspread doesn't seem to help too much. The other big problem comes with the old saying "if you can't hear 'em, you can't work 'em." There's nothing quite as frustrating as having a local ham come back to your "CQ-DX" to advise you that some REAL DX is trying to raise you, and that

MATERIALS LIST—PRESELECTOR

Desig.	Size and Description
C1	7 to 102 mmf midget variable capacitor, E. F. Johnson #157-6, or equivalent
C2	4.5 to 25 mmf NPO trimmer, Centralab #822AZ, or equivalent
C3	7 to 102 mmf midget variable capacitor, E. F. Johnson #157-6 or equivalent
C4	.01 mf 600 v disk ceramic capacitor
C5	180 mmf 600 v disk or mica capacitor
C6	60 mf 150 v electrolytic capacitor, Cornell Dubilier BR 60-150 or equivalent
J1	coax chassis receptacle, 83-1R Amphenol, or equivalent
J2	coax chassis receptacle, 83-1R Amphenol, or equivalent
L1, L2	L1-10 T L2-2 T This coil is made from 1 piece of B&W, or equivalent, coil stock. B&W #3011. Break coil 2 turns from one end, bend out 1/4 turn for connection to coil mounting terminal strip.
L3	1 mh RF choke, National R-50, or equivalent
R1	680k, 1/2 watt resistor
R2	82 ohm, 1/2 watt resistor
R3	22 ohm, 2 watt resistor
R4	2200 ohm, 1 watt resistor
S1	3P3T rotary switch, Centralab 1407 switch, P-270 index or equivalent.
Si1	500 ma, 140 v silicon diode, International Rectifier SD-500 or equivalent
T1	power transformer, 117 vac primary, 125 vac at 15 ma, 6.3 vac at .6 amp secondary. Stancor PS-8415, or equivalent.
Misc:	
1	6CW4 Nuvistor
1	Nuvistor socket
1	dial, National MCN, or equivalent
2	knobs, for function and regeneration controls
1	cabinet, Bud AU-1029 utility cabinet, or equivalent
1	ac power cord, 6'
4	2 lug terminal strips
1	1 lug terminal strip
1	1/16, 2 3/4 x 8" aluminum sheet
1	1/16, 1 1/4 x 2" Bakelite sheet
3'	RG/174 miniature coax, or equivalent

you didn't even hear his call.

Add this preselector, which uses a new Nuvistor, and your $50 receiver will act like one costing three times that much! The total outlay for parts is less than $30.

The terrific increase in receiver sensitivity and gain (20 db increase in signal strength at 28 mc), plus greatly improved image rejection, is made possible by the use of an RCA 6CW4 Nuvistor in a regenerative RF amplifier circuit. The Nuvistor's high gain, low noise characteristics, plus regeneration, permits maximum gain with virtually no increase in noise level. Adjustable regeneration permits peaking for maximum selectivity and image rejection.

The circuit, shown in Fig. 3, is a conventional triode tuned-grid RF amplifier with a neutralizing network consisting of capacitors C2 and C3. Panel mount C3 to control the neutralization of the circuit over its entire 13 to 32 mc range. The output circuit is broad-tuned for simplicity and is peaked for maximum output with the receiver antenna trimmer. A power supply is included, making the preamplifier completely self-contained.

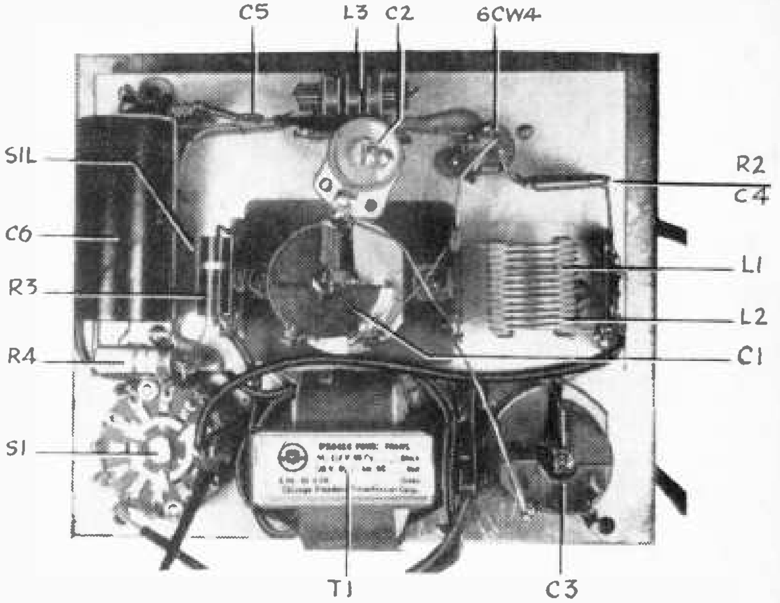
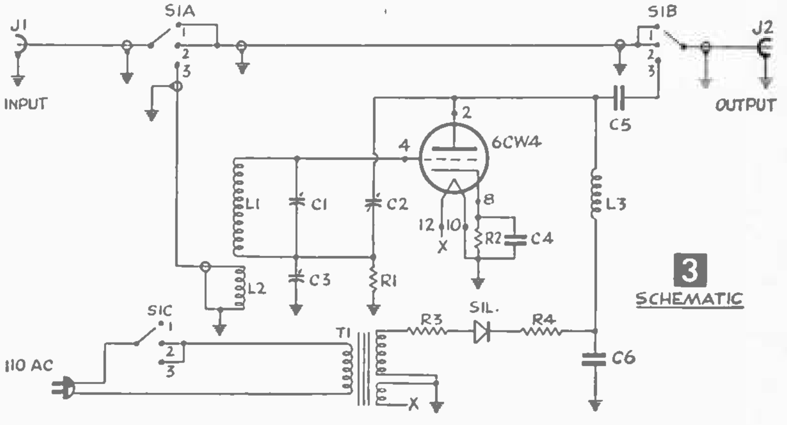


FIG. 2: Looking inside the preselector, you see placement of component parts.

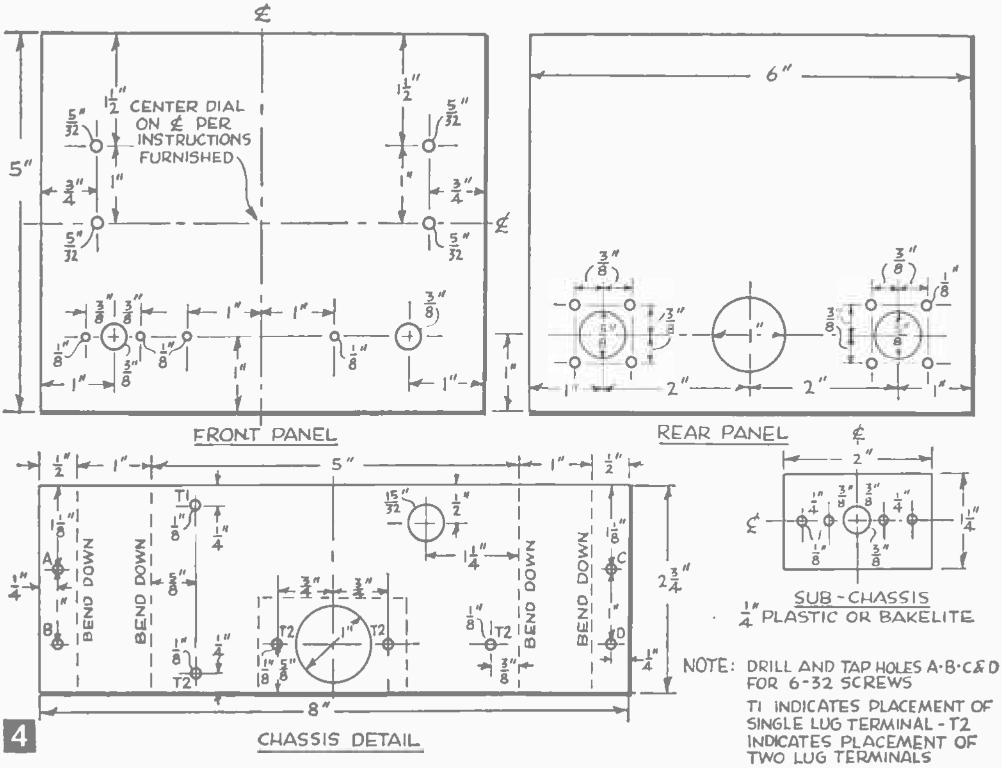


The function switch, S1, not only turns the preselector on, but also switches the circuit in and out of the receiver antenna input. In position 1, the preselector is off and the antenna is connected directly to the receiver for use on the lower frequency bands where most receivers perform satisfactorily without preamplification. In position 2, the amplifier is on, but not connected into the receiver. This is a standby position which permits instant use of the preamplifier when needed. Position 3 connects the preselector to the receiver and is the normal operating position.

Mount the complete unit in a 4x5x6 in. aluminum utility cabinet (Bud AU-1029). Mount the tuning, regeneration, and function controls to the front panel, along with the power transformer. Mount input and output connectors on the rear panel. The remaining components are dish-mounted on a 5x2¾ in. U-shaped chassis of 1/16 in. aluminum which is secured to the front panel with 6-32 screws. Insert the 6CW4 tube in its socket between the chassis and the front panel. Mate the shaft of C1 to the insulated coupling of the dial. Figure 2 illustrates rear panel construction of the finished amplifier.

Mount the tuning capacitor on a separate Bakelite plate which mounts to the chassis. This facilitates capacitor shift alignment with the dial coupling for minimum backlash. See Fig. 4 for complete construction and drilling details.

Make the layout and placement of parts as close as possible to that shown in Fig. 2, otherwise there is the possibility that difficulty will be experienced in neutralizing the completed unit. Mount small components to terminal



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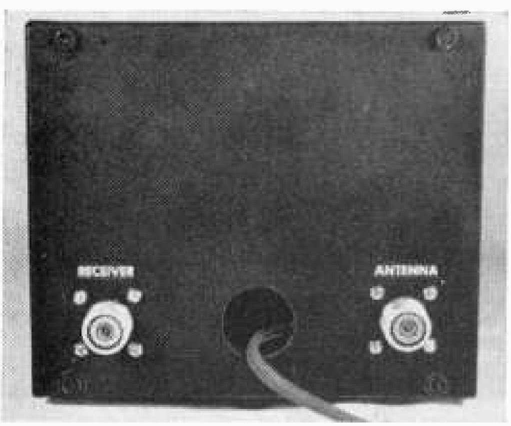


FIG. 5. The rear view shows the power cord and the two coaxial connectors. One goes to the antenna, the other to the receiver.

strips placed according to directions given in Fig. 4. Make the antenna coupling and tuning coils, L1 and L2, from a 12 turn length of 3011 B & W coil stock according to instructions given in the parts list, and support them on two terminal strips.

All antenna leads should be RG/174 miniature coax, or similar shielded cable. Cut the input and output leads from S1 long enough (7 to 8 in.) to permit connection to the antenna jacks, J1 and J2, after the front panel has been mounted.

With the front panel in place and connections made to the antenna jacks, connect the antenna and receiver to their respective terminals and turn the preselector to the on position. Leave the rear panel off until final adjustment of the preselector has been made.

Set the tuning capacitor, C1, and regeneration capacitor, C3, to minimum capacity and tune the receiver from 25 to 35 mc. A rough carrier will be heard, indicating that the circuit is oscillating. If absent, adjust C2 in small increments until the carrier is heard. Next, adjust C2 until the circuit drops out of oscillation when the capacity of C3 is increased slightly. The circuit is now properly adjusted for operation and the back panel can be secured.

The preselector tuning range will be from about 13 to 35 mc. Any dial calibration, however, will be relative since the setting of C3 will vary the tuning control setting slightly. The best procedure is to set the tuning capacitor for maximum signal with the regeneration control set at its most sensitive position, which will be just before oscillation. This setting is also the preamplifier's most selective point, and it will be necessary to touch up the tuning if the receiver is moved more than a few kilocycles away from the original setting. With less regeneration, the circuit tunes broad enough to cover several hundred kilocycles without realignment. Some practice will be necessary in adjusting the regeneration to obtain maximum performance.

Don't Build This

Transistorized Audio Voltmeter!

That's right! *Don't* build it. Unless you need one of the most versatile little instruments that ever graced a work bench. It only costs about $15 in parts and a few hours of labor

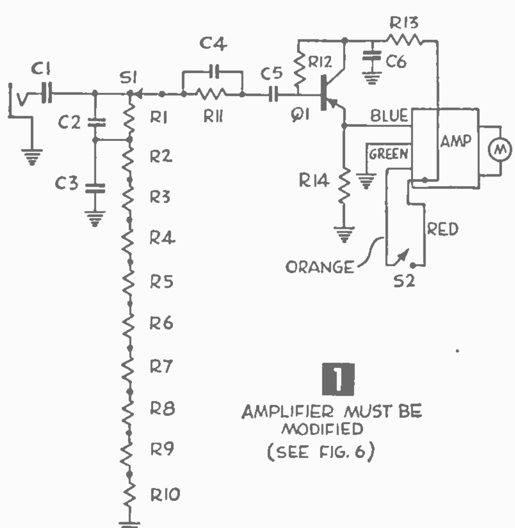
By FORREST H. FRANTZ SR.

AN AUDIO voltmeter is one of the more necessary instruments in an experimenter's instrument bank. It can be used to make gain, frequency response, and routine ac measurements. It can be used as a signal tracer and as an ac bridge amplifier. To be of maximum utility, the audio voltmeter should have a high impedance input (at least ½ megohm), good frequency response (plus or minus 2 db from 20 to 20,000 cycles), 10 db range steps, and a low full-scale range of .01 volt or less. This transistorized voltmeter comes very close to meeting these requirements.

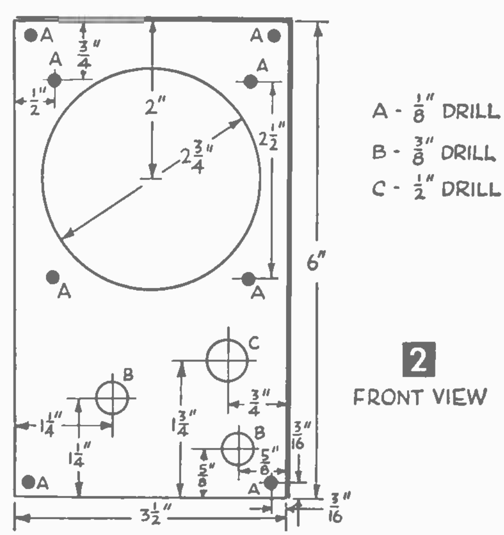
Construction: The layout for the front panel is shown in Fig. 2. A hole saw or a fly cutter will make the job of cutting the large meter hole easier. Back the panel with a piece of wood during drilling operations.

Cut the range switch shaft to a length of ⅜ in. Place the part of the shaft to be discarded in the vise during the sawing operation.

Mount J1, S1, S2, and M. Connect C1, C2, C3, and R1 through R10 (Fig. 3). The resistance values required are unusual, and precision to 2% or better is desirable. To meet these requirements and to keep the instru-



1 AMPLIFIER MUST BE MODIFIED (SEE FIG. 6)



2 FRONT VIEW

ment cost down, select from ordinary carbon 10% resistors. Use a bridge or the ohmmeter scale of a VTVM to make the selection. Most of the required values can be selected from standard multiples of 22 and 68. If necessary, you can resort to series or parallel combinations of resistors to obtain the required values.

The values of R1 and R2 are inconsistent with the other voltage divider resistance values because they were chosen to compensate for circuit loading. The values of C2 and C3 are also inconsistent with theory for frequency compensation of the divider, but this

MATERIALS LIST—TRANSISTORIZED AUDIO VOLTMETER

Desig.	Size and Description
R1 through R10	selected ½-w carbon resistors—see text R1-610K, R2-290K, R3-68.4K, R4-21.6K, R5-6.84K, R6-2.16K, R7-684 ohms, R8-216 ohms, R9-68.4 ohms, R10-31.6 ohms
R13, R16	1K, ½-w, 10% carbon resistor
R17	4.7K, ½-w, 10% carbon resistor
R14	6.8K, ½-w, 10% carbon resistor
R11	680K, ½-w, 10% carbon resistor
R12	2.7M, ½-w, 10% carbon resistor
R15	100 ohm flange mounting rheostat (Clarostat series 39—specify resistance)
C2, C3	20 mmf miniature ceramic capacitor (Lafayette CF0179)
C4	40 mmf (Two 20 mmf in parallel—see C2, C3)
C1	.1 mfd, 600 v paper capacitor (Aerovox P8292ZN28)
C5, C6	10 mfd, 10 v miniature electrolytic capacitor (remove from amplifier)
C7, C8	100 mfd, 6 v miniature electrolytic capacitor, (Lafayette CF-106)
D1, D2, D3, D4	germanium diode (Lafayette SP-148)
S1	12-position single circuit switch (Mallory 32112J)
S2	toggle switch (Lafayette SW-84)
Q1	2N1379 transistor (Texas Instruments)
M	meter, 0-1 ma (Lafayette TM-60)
J1	phone jack (Lafayette MS-441)
B	9-volt battery (Lafayette BA-2)
AMP	3-transistor amplifier (Lafayette PK-522)
	2$^{7}/_{16}$ x 3⅜ in. miniature perforated board (Lafayette MS-304)
	6¼ x 3¾ x 2 in. bakelite case (Lafayette MS-216)
	panel for above (Lafayette MS-217)
	1¼ in. pointer knob (Lafayette KN-41)

Parts available from Lafayette Radio, 111 Jericho Turnpike, Syosset, L. I., N. Y.

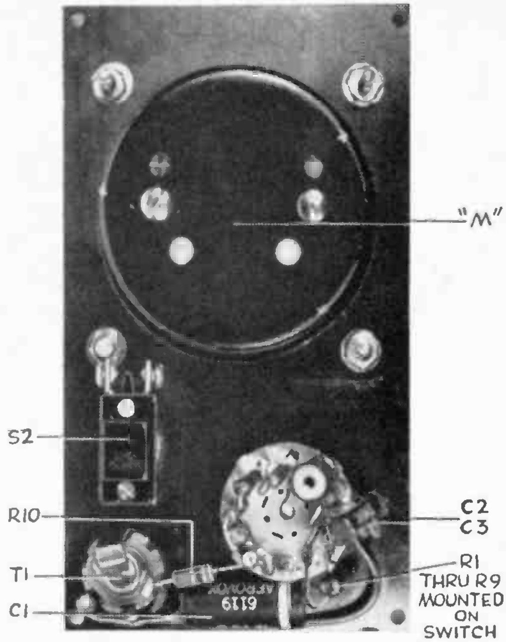


FIG. 3: During the early stages of construction, we see the resistors, R1 through R9, mounted on the terminals of the switch.

simple arrangement is better than no compensation at all. It is admittedly a compromise which provides reasonably good compensation on all except the highest voltage ranges. The low frequency response falls off on the 100- and 300-volt ranges. On the .01 to 10 volt ranges, frequency response is plus or minus 2 db from about 25 to 25,000 cycles for the overall instrument.

Next construct the emitter follower circuit and feedback control board. The board is purchased cut to the correct size. Use Fig. 4A to locate positions for ⅛ in. holes for feedback control (R15) mounting. Then mount and wire R15, R11 through R14, C4 through C6,

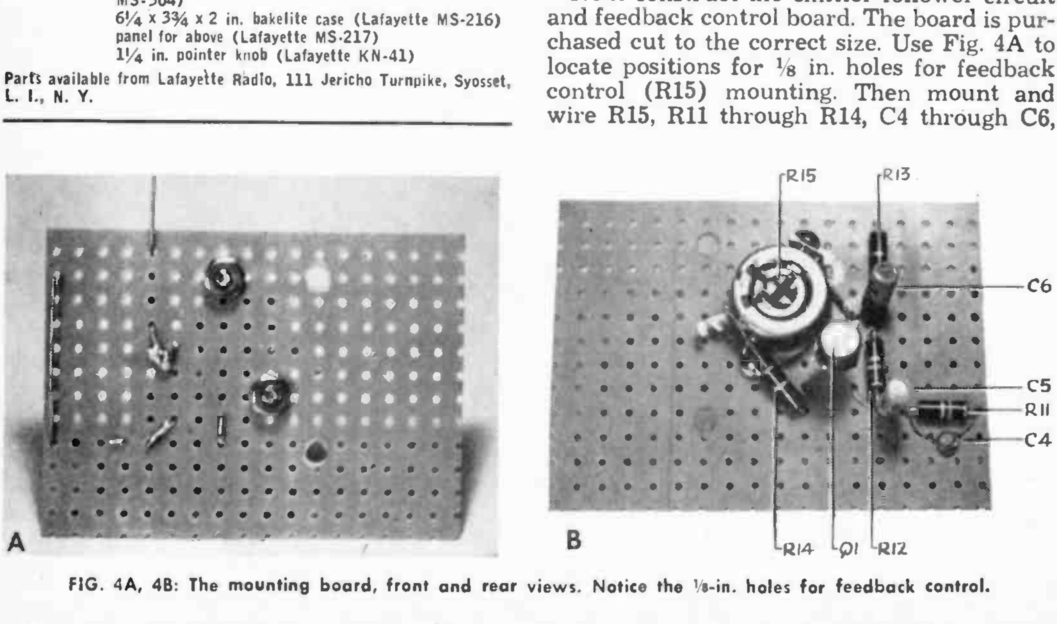
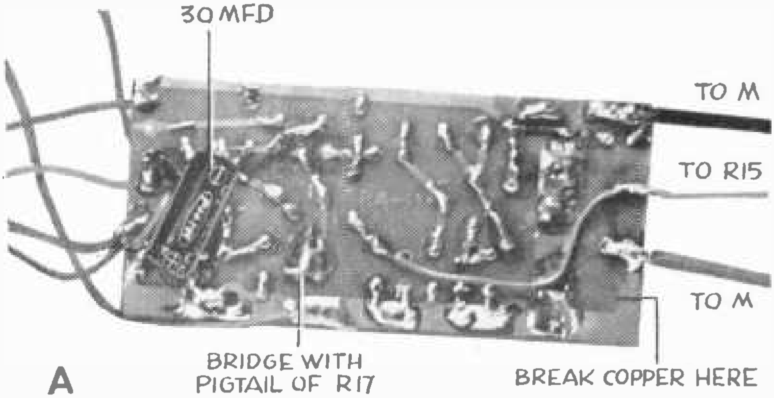


FIG. 4A, 4B: The mounting board, front and rear views. Notice the ⅛-in. holes for feedback control.



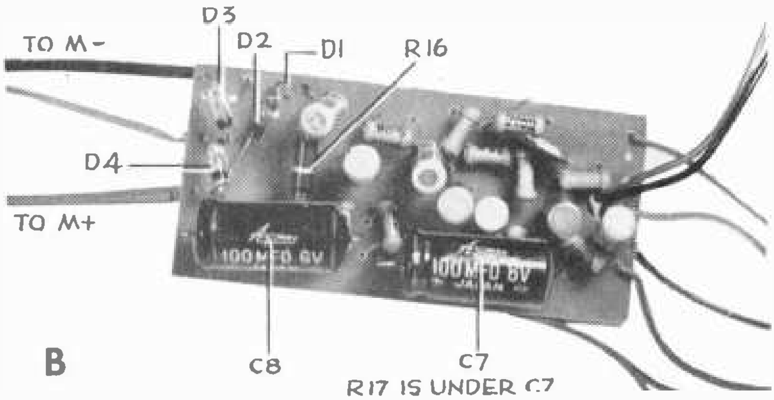


FIG. 5A, 5B: Modifications to the amplifier unit.

and Q1. Use Figs. 1, 4A, and 4B for guidance. Obtain C5 and C6 from the ready-made PK-522 amplifier by removing the capacitors designated in Fig. 6A.

The major portion of the electronics is contained in a ready-made, 3-transistor amplifier, the Lafayette PK-522. This amplifier costs only $3.75, less than the cost of transistors alone for a build-your-own version. This amplifier is assembled on a printed circuit board and is designed to operate a loudspeaker. A few modifications must be made. You'll get some free parts from the amplifier, and you'll have to add a few. You've already removed two of the 10 mfd. capacitors designated by the dotted lines in Fig. 6A.

Next, move the 30 mfd. capacitor on the bottom side of the amplifier to the position shown in Fig. 5A. This is a physical move only and *is not* a circuit change.

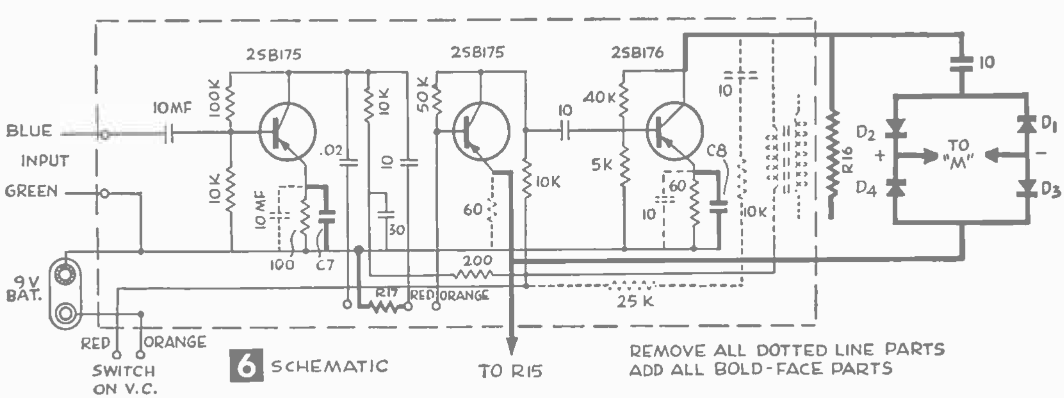
Remove the 10K, 25K, and 60 ohm resistors designated by the dotted lines in Fig. 6A. Then remove the output transformer.

Add the 1K, ½-watt resistor (R16) as shown in 6B. The resistor replaces the output transformer as the 2SB176 output transistor dc load.

Install the 100 mfd., 6-volt emitter bypass capacitors for the input and output stages.

Solder two short wires (size 20 to 24 will do) to the copper ground strip. Use these wires to attach the amplifier to the emitter follower board (Fig. 7A). Then proceed with the wiring to mate the circuits on the two boards using Figs. 1, 7A, and 7B for reference. The switch leads tie down on the perforated board, and extension leads about 4 in. long must be connected to the tie down point.

Mount this assembly on the meter and complete wiring (Fig. 8). The battery fits between S1 and M under the circuit assembly. Use electrical tape to insulate as required.



6 SCHEMATIC

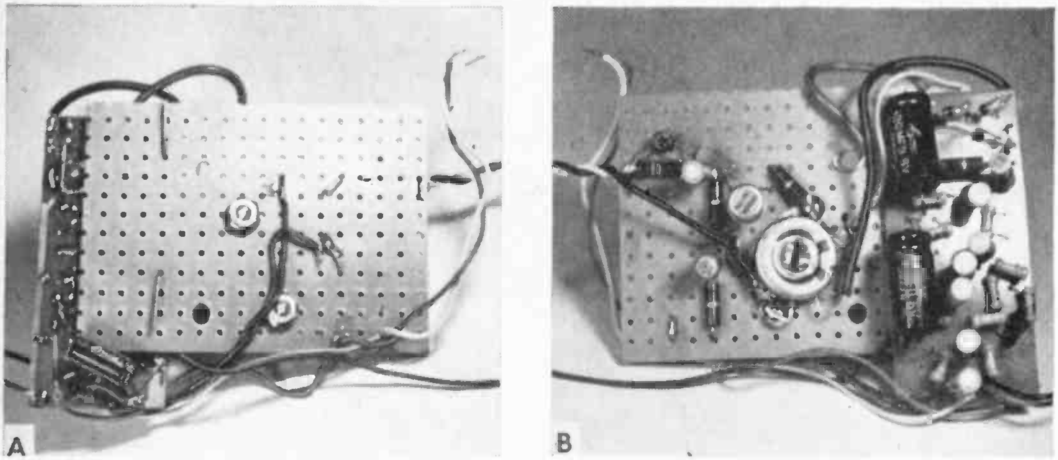
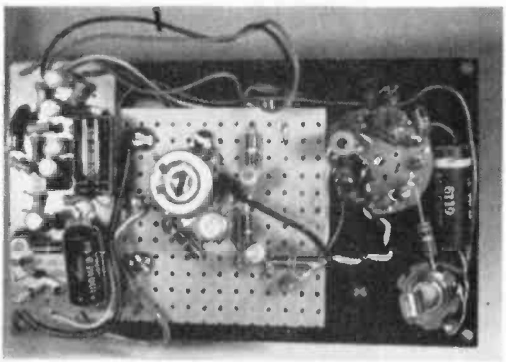


FIG. 7 A-B: Top and bottom views of circuit board with amplifier unit in place after modification.

Note that the case of R15 and the frame of S1 are grounded.

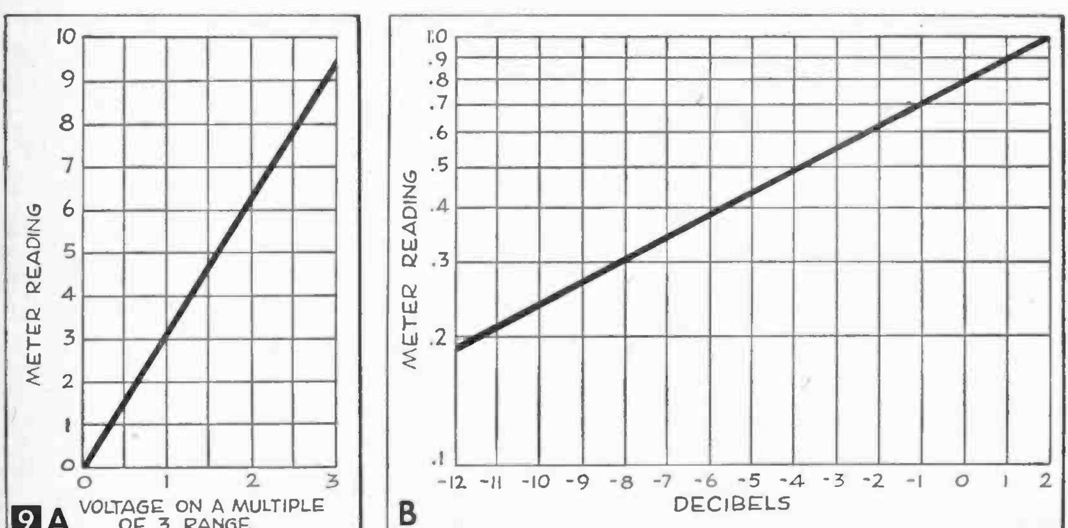
The front panel plate for S1 is a 2¼ x 2¼ in. piece of filing card. The angle between switch S1 index marks is 30°. Fasten the card with rubber cement.

You can prepare a multiple of three scale and a db scale for the meter if you wish, or you can use the graphs of Fig. 9 for conversions. You can add db markings on the switch plate, too, if you wish. The 1-volt range is 0 db. Each switch step up is 10 db greater, and each switch step down is 10 db less. Thus, the 300 volt range is plus 50 db and the .01 volt range is minus 40 db.



Line the inside of the case with aluminum foil fastened with rubber cement. Provide a piece of stranded wire connected to instrument ground which contacts the foil under one of the corner screws. Use electrical tape if necessary to prevent instrument components from shorting against the foil when the instrument is slipped into the case.

The input lead should be shielded. The center conductor connects to the phone jack tip and the shield connects to the phone jack outer shell. Provide minigator or alligator clips at the other end for connection to circuits under measurement or test.



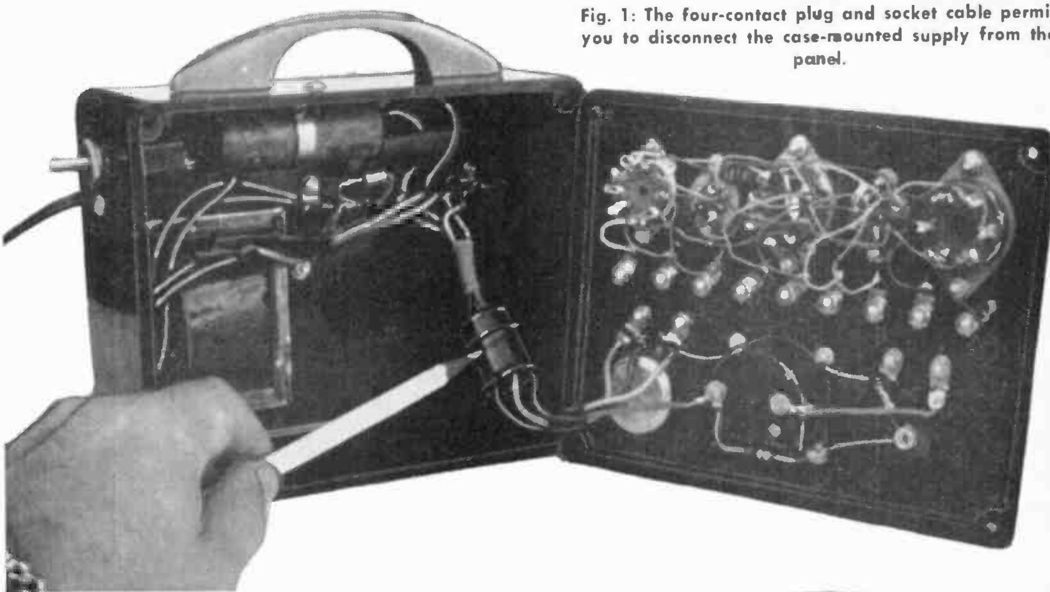
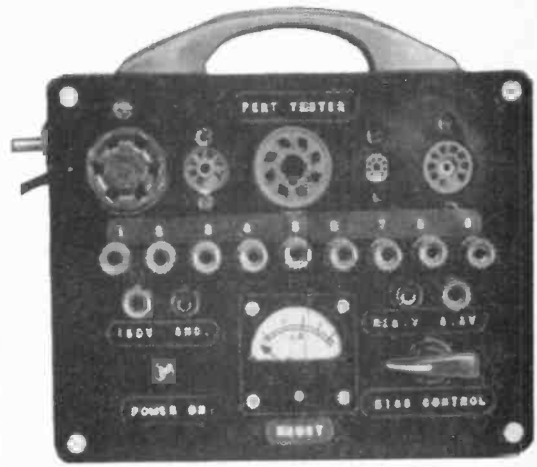


Fig. 1: The four-contact plug and socket cable permit you to disconnect the case-mounted supply from the panel.

Pert Tester

By FRED BLECHMAN



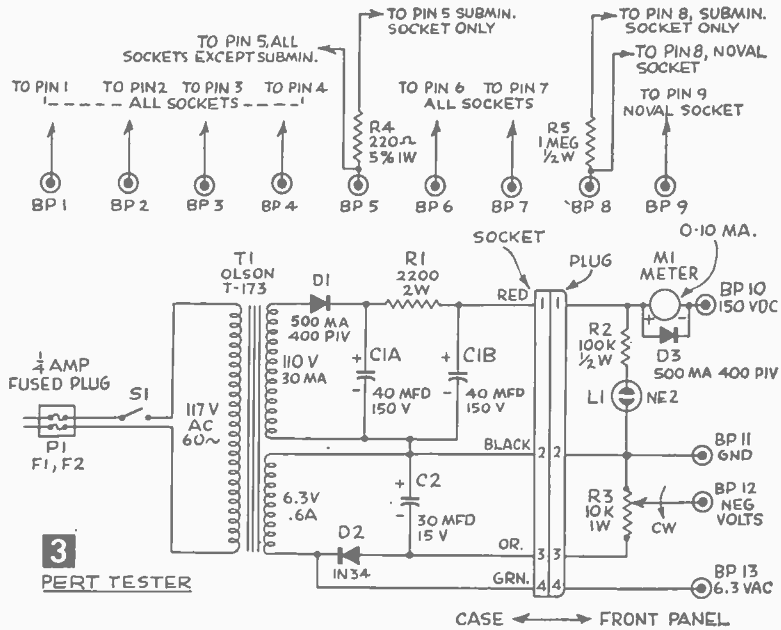
ACCORDING to the dictionary, the word "pert" is derived from the Latin "expertus," meaning "ready." The PERT tester certainly fulfills this description; it is "ready" to test almost any common electron tube or transistor, and has been specifically designed to test the elusive electron-ray indicator tubes. In fact, as used here, PERT stands for *P*rogrammed *E*lectron *R*ay *T*ube. Five-way binding post terminations for all tube socket and built-in power connections, allow a circuit to be "programmed" with jumpers and external resistors or capacitors.

Fig. 2: The PERT tester uses 13 binding posts and five tube sockets to program test electron ray tubes.

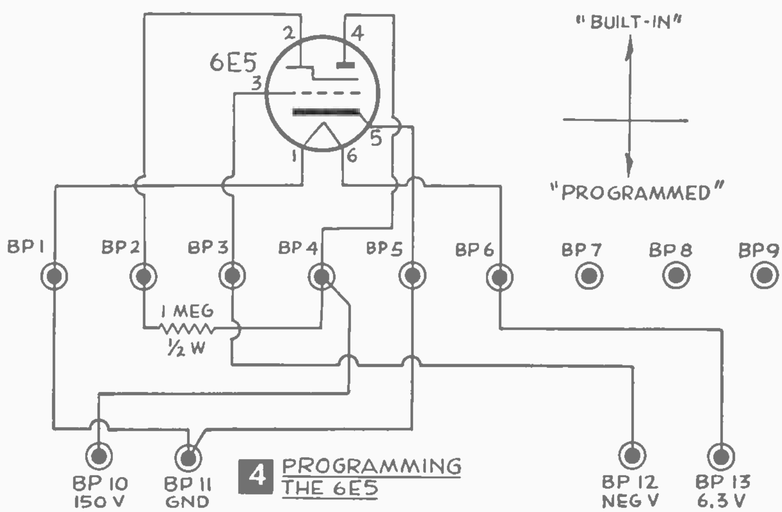
Electron-ray tubes actually light up in the PERT tester, and the deflection of the lighted portion is varied to insure proper operation of the control element. Most other vacuum tubes may be tested for shorts, filament continuity, cathode emission and grid control. Transistors can be checked for shorts, opens and general operation. PERT may also be used as a powered breadboard, since common voltages are internally supplied.

General Description: The self-contained power supply furnishes 150 volts at up to 10 milliamperes, 6.3 volts ac to 600 milliamperes, and a controllable negative voltage of up to 10 volts. This is all assembled in the case of the tester (Fig. 1). The voltages are carried through a four-conductor cable and connector, to the front panel, where the tube sockets, meter, potentiometer, pilot light and binding post terminals are located (Fig. 2).

The five tube sockets on the front panel are 6-pin, 7-pin miniature, 8-pin octal, 8-pin subminiature, and 9-pin noval, which will accommodate all electron-ray tubes and just about any other common tube. Each pin of these sockets is wired to the same-numbered binding post on the panel. Using clip-lead jumpers, any of the voltages may be fed to any pin of the sockets. External resistors, capacitors, etc., as required, may be connected between binding posts. A meter has been included as an "extra." It is not required for electron-ray tube testing, but it *is* required for testing other tubes and transistors and is handy when using the tester for breadboard experiments.



3 PERT TESTER



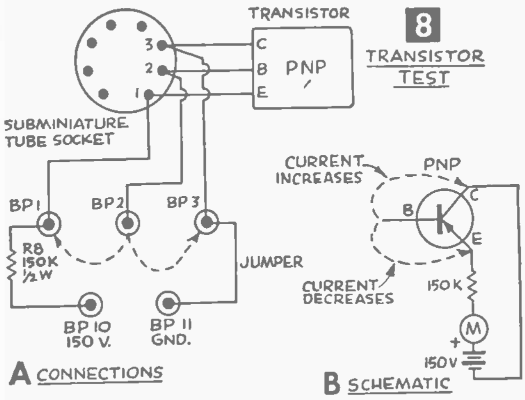
4 PROGRAMMING THE 6E5

Assembly of the PERT tester involves more mechanical labor than electrical wiring. The components indicated in the materials list are all readily available; substitutes for these components may be used freely, since none are critical. Do not exceed voltage rating of capacitors and peak inverse voltage ratings of diodes. The wiring placement and routing is not at all critical.

Binding posts do not have to be insulated from the panel, since Bakelite is sturdy, easily cut, and does not require painting; the Bakelite case and panel are less expensive than an aluminum box of the same size.

Holes for the binding posts, terminal strip, handle, pilot light, etc., can easily be made with a small portable electric drill. To make the larger openings for the meter and sockets, drill a starting hole within the area to be cut out, and then use a Tyler *Spyral* coping saw blade, which can be held in a regular coping saw frame. These blades, life-savers for making large or odd-shaped holes in wood, plastic or metal, cut in any direction. They are available at most hardware stores or may be ordered directly from Tyler Manufacturing Co., 516 5th Ave., New York 36, N. Y.

Build the power supply portion into the case as in Fig. 1. Position the transformer so that it will not interfere with the sockets, meter or binding posts which will be above it on the front panel. Use a single solder-terminal strip to mount and connect the power supply components. Any 4-pin connector, or two 2-pin connectors, can be used to connect the leads from the power supply to the front panel. This connector is not absolutely neces-



control clockwise) the meter reading should drop, indicating that the grid is trying to cut-off the tube. Indeed, for many tubes, the bias control may completely stop current flow through the tube. This one test checks filament continuity, cathode emission and grid operation simultaneously.

In the cast of multi-section tubes, each section should be tested separately.

To check for internal tube shorts, all you need is a resistor (see Fig. 5). Connect a 47K ohm ½ watt resistor (R7) from the 150-volt binding post to BP 1. Touch a lead from the Ground binding post to BP 2 through BP 9 in turn. Then connect the resistor to BP 2 binding post and repeat, then BP 3, etc., until all the combinations between pins have been tried. The meter should deflect only when the filament or internally connected elements (shown in the tube manual schematic) are brought out to the binding posts under test. If it deflects any other time, this is evidence of a short (even a high resistance short) between the elements under test.

Tubes requiring more than 600 milliamperes or 12 volts for filament operation cannot be checked by the PERT tester. Some common low-voltage-filament tubes are listed in Table B with the necessary filament voltage dropping resistor indicated. The formula for determining the required resistor for any filament rating under 6.3 volts is also shown in Table B.

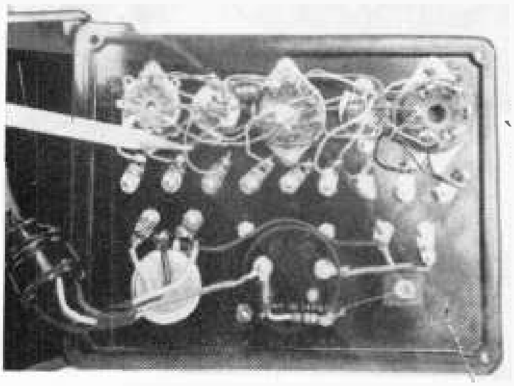


Fig. 9: Back view of the front panel. The resistors shown protect a DM70 from overload during test.

Transistor Testing (Fig. 8): The general operation of virtually any signal or low-power transistor can be verified with the tester and a resistor. Connect a 150-K-ohm, ½-watt resistor (R8) from the 150 volt binding post to BP 1. Jump ground binding post to BP 3. Insert the leads of the transistor into the subminiature tube socket as follows: emitter to pin 1; base to pin 2; collector to pin 3. (This is for a PNP transistor; for an NPN transistor, reverse collector and emitter). Be sure to count counterclockwise for the pin connections, since you are looking at the front of the tube socket.

Turn on the switch, and the meter should read about 1 milliampere. Now jump BP 2 to BP 3; the meter reading should increase. Move the jumper from BP 2 to BP 1; this time the reading should go down. In the case of an NPN transistor, the opposite is true. The important thing is not how much the meter moves, or even which way, but that it *does* move, and in a different direction as the base is connected to emitter and collector.

If the meter does not read at all, the transistor is open. If the reading does not change when the base is connected, the transistor is shorted!

Other Uses. The PERT Tester is really an experimenter's delight, since it has so many commonly-required elements built-in. The 150 volts dc can be used to 30 milliamperes if the 10 milliampere meter is bypassed.

You may decide to bring the meter terminals to separate binding posts, so the meter can be used by itself. The negative voltage will supply as much as 7 volts at 7 *ma,* and can be used for powering transistor circuits, using pins 1, 2, and 3 of the subminiature tube socket to mount the transistor. The binding posts BP 1 through BP 9 are not connected together internally, but dead-end at the tube sockets, so they may be used as breadboard terminals.

The 150 volts dc and 6.3 volts ac can be used for powering experimental and "outboard" tube circuits, with the convenience of the tube sockets, and binding posts for connecting the required resistors, capacitors, etc.

In fact, since the front panel is independently connected to the power supply, you can make several front-panel arrangements which plug-in to the basic power supply!

The convenience and versatility of the PERT tester far exceeds the modest cost of the components. Here's a unit you'll find yourself reaching for to handle those odd jobs with a minimum of clipleads, clutter and confusion.

85

This compact low-cost vibrator power supply employs solid state rectifiers. It converts 6 volts dc to 200 volts dc for vacuum tube equipment operation in the car or lab

Vibrator Power Supply

By WALTER TEMCOR

WANT to operate vacuum tube electronic equipment from an automobile battery? Tube filaments aren't a problem—the battery can carry them directly. B-plus is another thing. The usual approach is a vibrator power supply. This power supply is different, though, in that it uses solid state rectifiers. It will provide 200 volts dc at 30 milliamperes. It's compact—overall dimensions are 3¼ x 4½ x 5 in., and the cost of parts is low—under $10. Construction is straightforward and can be completed in a few hours. The unit is enclosed in a metal case and is provided with filters to permit interference-free operation with the auto engine running.

Chassis Preparation: Drill and cut the chassis according to the layout of Fig. 3A. The 1¼ in. diameter vibrator socket hole is cut most easily with a hole saw, a fly cutter, or a chassis punch. If none of these are available, drill small holes (about ⅛ in. dia.) around the inside of the circumference and finish the job of cleaning out the hole with a hack saw or cold chisel and a round file.

The transformer cut-out is started by drilling a ⅛ in. diameter hole at the two inside corners. Make the lengthwise cuts from the edge of the chassis into these holes with a pair of tin snips. Use a cold chisel or a hack saw to cut the third side. Clean up with a file.

The binding post holes with the "see text" note in Fig. 3A are 5/16 in. diameter for the binding posts specified on the parts list. If you use other binding posts, you may require a different diameter. The binding posts must be insulated from the chassis. If you use binding posts that aren't insulated, you'll have to provide shoulder washers.

Assembly and Wiring: Mount the parts on the chassis. Use Figs. 1 and 2 for guidance. There's a small vibrator shell grounding spring which fastens under one of the tube socket screws on the top of the chassis partial-

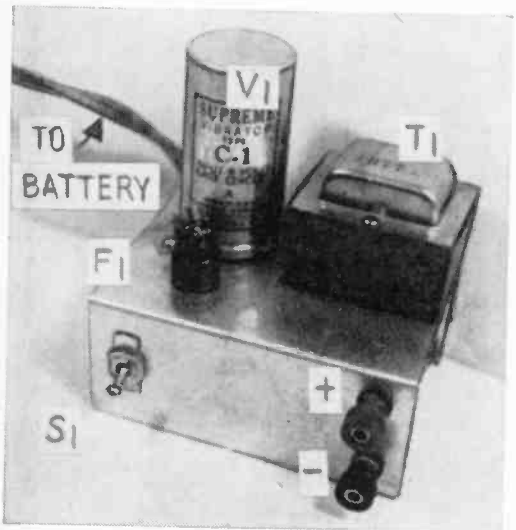


Fig. 1: All parts mount on a small open-end chassis with the on-off switch and the output on one side.

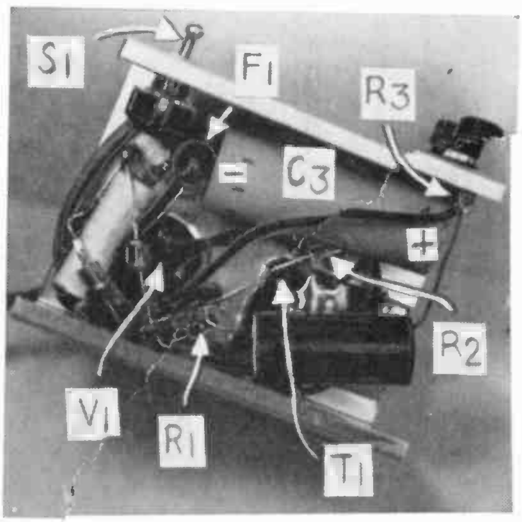
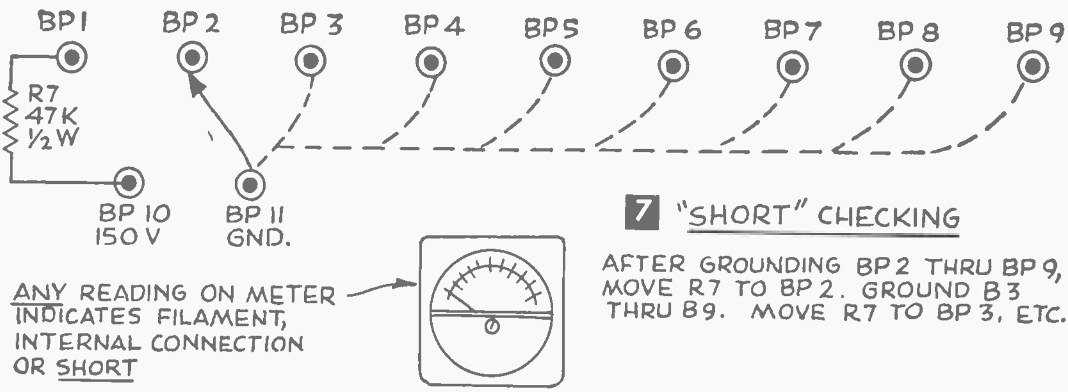


Fig. 2: The under chassis view shows the location of all parts. Be careful to observe proper polarity on the electrolytic capacitors and diodes to avoid damage.



7 "SHORT" CHECKING

AFTER GROUNDING BP2 THRU BP9, MOVE R7 TO BP2. GROUND B3 THRU B9. MOVE R7 TO BP3, ETC.

MATERIALS LIST—PERT TESTER

Desig.	Size and Description
R1	2200 ohm, 2-w resistor (Allied #1MM070)
R2	100K ohm, ½-w resistor (Allied #1MM000)
R3	10K ohm, 1-w potentiometer (Allied #30M306)
R4	220 ohm 5% 1-w resistor (Allied #2MM065)
R5	1 megohm ½-w resistor (Allied #1MM000)
R6	33K ½-w resistor (Allied #1MM000)
R7	47K ohm ½-w resistor (Allied #1MM000)
R8	150K ohm ½-w resistor (Allied #1MM000)
C1A, B	40 x 40 mfd, 150 v tubular electrolytic capacitor (Allied #13L442)
C2	30 mfd, 15 v electrolytic capacitor (Allied #10L520)
D1, D3	500 ma, 400 v PIV silicon diode (Allied #1N2070A)
D2	1N34 diode
M1	0-10 ma, 1⅝-in. square meter (Allied #66F025) (Arrow Sales Corp., P. O. Box 3007, North Hollywood, Calif.)
T1	110 v at 30 ma., 6.3 volt at .6 a. power transformer (Allied #64G078)
S1	SPST switch (Allied #34B175)
P1	fused plug (Allied #52N648)
F1, F2	fuses, ¼ amp, 3 AG (Allied #52B231)
L1	NE-2 neon lamp (Allied #52E370)
BP1-BP13	5-way binding posts (Allied #558287)
Case	2¼ x 5¼ x 6¾" Bakelite
Panel	to fit above case
	6-pin tube socket (Allied #40H026)
	7-pin miniature tube socket (Allied #22H567)
	8-pin octal socket (Allied #22H579)
	8-pin subminiature socket
	9-pin noval socket
	4-contact socket (Allied #40H524)
	4-contact plug (Allied #40H504)
	line cord (Allied #50N925)
	carrying handle
	miscellaneous hardware, wire, etc.

* Parts available from the following: Allied Radio Corp., 100 N. Western Ave., Chicago 80, Ill.; Lafayette Radio, 111 Jericho Turnpike, Syosset, L. I., N. Y.; Olson Electronics Co., 260 S. Forge St., Akron 8, Ohio.

Table B

FILAMENT DROPPING RESISTORS

Tube Types	Fil. Volts (Volts)	Fil. Current (Amps)	Resistor (Ohms)
1R5, 1S5, 1T4, 1U4, 1U5	1.4	.050	100 ½ Watt
3A4, 3A5	2.8	.100	39 ½ Watt
3S4, 3V4	2.8	.050	72 ½ Watt
5R4, 5V4, 5X4, 5Y3, 5Y4, 5Z3, 5Z4—Do Not Test!			

To Calculate Dropping Resistor:

$$R_{SERIES} = \frac{6.3 - E_{FIL}}{I_{FIL}}$$

(Use Next Highest Standard Value)

R_{SERIES} = Resistance To Be Added (Ohms)

E_{FIL} = Desired Filament Voltage (Volts)

I_{FIL} = Desired Filament Current (Amperes)

Minimum Resistor Watt Rating = $(I_{FIL})\ (6.3 - E_{FIL})$

If the tube is good, and the "programming" correct, the tube will glow if the tester has been wired correctly! By turning the bias control knob, the shadow angle or bar length will change, indicating proper grid control, and thus completing the functional check of the tube.

In the case of the 1629, which is designed for a twelve-volt filament, the green glow will be weak but easily visible. In the case of the DM70, an internal 220 ohm resistor has been built into the tester to drop the 6.3 filament voltage to the 1.4 volts allowable for the DM70; also, the built-in 1 megohm resistor to pin 8 of the subminiature socket limits the DM70 tube current to a safe value.

The meter readings are not significant when testing electron-ray tubes but do point out the small power consumption of these tubes.

Other Vacuum Tubes (Fig. 6): For testing vacuum tubes other than electron-ray tubes, use the meter and a tube manual. Connect a 33K ohm ½ watt resistor (R6) to the 150-volt binding post. This will be the plate load resistor. Jump the free end of this resistor to the binding post that goes to the plate pin of the tube socket, as shown by the tube schematic diagram in the tube manual. If the tube has a screen grid, jump this to the plate binding post. Jump the cathode binding post and one filament binding post to the ground post.

Connect the grid binding post (if the tube has a grid) to the negative voltage binding post. Connect the other filament through a resistor if necessary (see Table B) to the 6.3 vac binding post. (If the tube has a filament rated at less than 6.3 volts, the resistor of Table B is required).

Insert the tube in the proper socket, turn on the switch and wait for filament warmup. The meter will deflect upward to from 2 to 4 milliamperes with the bias control fully counter-clockwise (zero bias). As the negative voltage on the grid is increased (bias

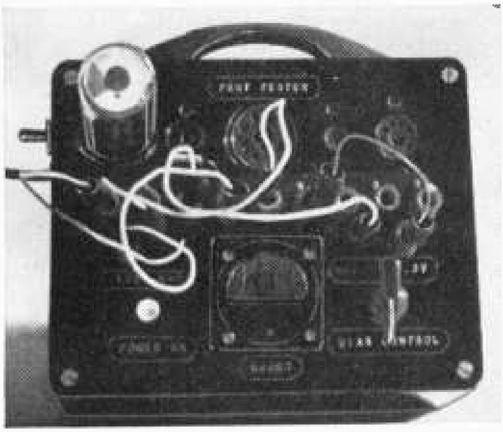
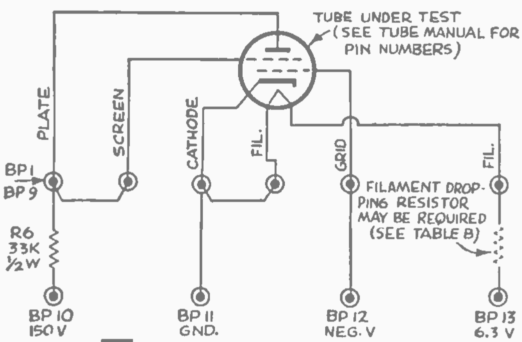


Fig. 5: Testing a 6E5. Note the pilot lamp, meter reading, and shadow angle of 6E5 indicator tube.



6 TESTING A VACUUM TUBE

sary, but allows complete separation of the two parts of the tester, and also allows the use of alternate front panels.

Wire the sockets next by jumping pin 1 of each socket together, and running a wire from the closest socket to binding post 1 (BP 1). Repeat for pins 2, 3, 4, etc. The author used standard color-coded wire; that is, brown for pins 1, red for pins 2, orange for pins 3, etc., to help in wiring and trouble-shooting.

Wire a 220 ohm resistor (R4) directly from BP 5 to subminiature socket pin 5, and a 1 megohm resistor (R5) from BP 8 to subminiature socket pin 8 (Fig. 3). These resistors insure against damaging a DM70 tuning indicator tube during test by neglecting to connect these resistors externally. The remaining front panel wiring is straight forward and does not require special instruction.

Circuit Description: A small power transformer (T1) is connected to the ac line by SPST switch S1, and protected from "downstream" shorts by a fused plug (P1), containing a ¼ ampere fuse for each side of the power line. The isolated 110 volt output is rectified by silicon power diode D1, and filtered by electrolytic capacitors C1A and C1B, and resistor R1. Neon bulb L1, in series with current limiting resistor R2, indicates that the unit is on and that high voltage is available at the 150-volt binding post (BP 10).

Feed the 6.3-volt output directly to the ground (BP 11) and 6.3 vac (BP 13) binding posts, for filament operation. The 6.3 volt output of the transformer is also rectified, negative with respect to ground, by diode D2, and filtered by high capacity, low voltage electrolytic capacitor C2. The output of this network is applied across potentiometer R3, with the wiper connected to the Neg. volts binding post (BP 12). As the wiper is moved further from ground, more of the negative voltage appears at BP 12.

Place a silicon diode (D3) across the meter terminals in the *forward* direction. This diode will *not* conduct unless the meter is subjected to severe overload (such as inadvertent touching of 150-volt and ground clip leads), at which time the diode bypasses the excessive current to protect the meter movement.

Tester Operation

1. Electron-Ray Tubes (Fig. 4): Testing an electron-ray tube with PERT is easier to do than to describe. Connect jumper cords, which may consist of wires with the ends trimmed or alligator clip leads, between the binding posts indicated in Table A for the tube under test. Most tuning indicator tubes in use today are shown. External resistors indicated in Table A are connected between binding posts (see Fig. 4). The tube is then inserted into its mating socket on the panel.

When you turn on S1, the pilot light should glow. As soon as the filament of the tube being tested warms up, the characteristic green or blue glow will be apparent. If no glow is evident after a reasonable time, check the jumper and external resistor connections.

PERT TESTER PROGRAMMING

Tube Type	External Resistors	BP10 150V.	BP11 GND.	BP12 NEG V.	BP13 6.3 VAC	Remarks
DM70/1M3	Built-In	8	5	1	4	Exclam. Pt.
6E5, 6U5, 6AB5/6N5	1 Meg. 2-4	4	1, 5	3	6	Magic-Eyes
6ME5	1 Meg. 2-5	5	3, 7	1	4	Miniat. 6E5
1629	1 Meg. 3-4	4	7, 8	5	2	12V. 6E5
6AL7	3300 1W 8-1	3	1, 2	4, 5, 6	7	4 Squares
EM34/6CD7	1 Meg. 5-6 1 Meg. 3-5	5	7, 6	4	2	Double Shadow
EM80/6BR5 EM81/6DA5	470K 7-9	9	2, 4	1	5	Long-Eye
EM84/6FG6	470K 6-7 Jump 7-9	6	3, 4	1	5	Bar Type

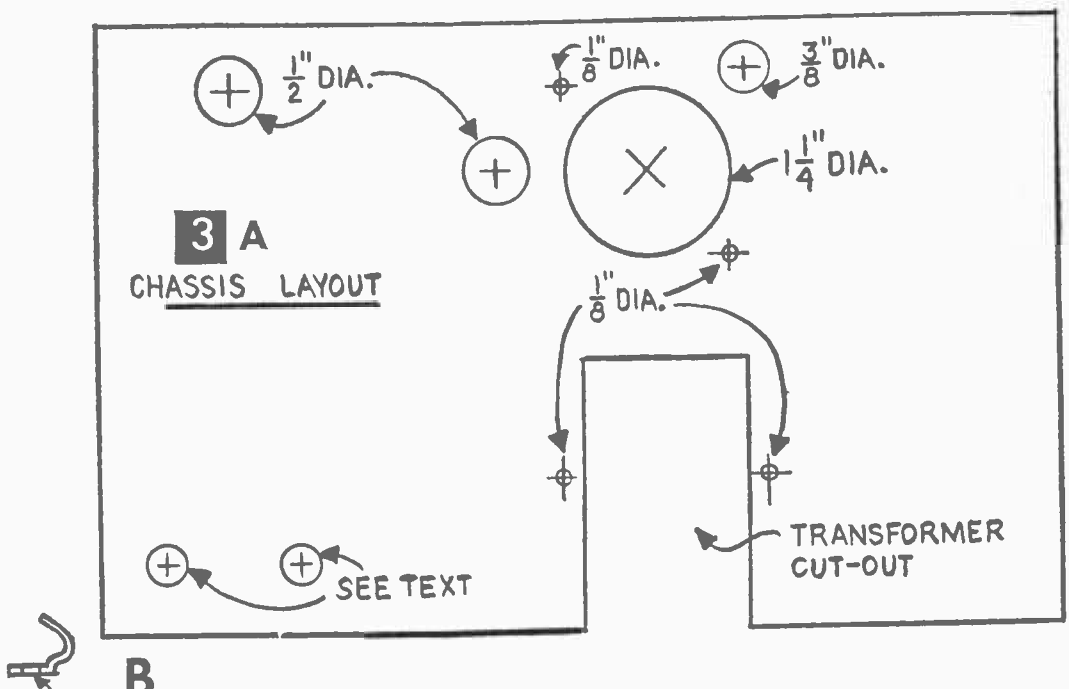
ly visible in Fig. 1. Make this grounding spring by bending a General Cement No. H503-F cable clamp. This spring provides the desired ground connection for the vibrator shell,. and holds the vibrator in place on bumpy roads in a mobile installation. If you don't have the cable clamp mentioned a 1/32 in. thick piece of metal cut 3/8 x 1 in. long with a 1/8 in. hole centered 3/16 in. from one end will do the job. In either case, bend to the shape shown in Fig. 3B.

The components can be mounted most quickly in the following order: 1. Vibrator socket, tie-down strips, and vibrator clamp; 2. Fuse extractor post; 3. Binding posts; 4. Transformer. (The remaining components fasten later as you wire.) Be sure that the binding posts are insulated from the chassis.

Connect the negative 6-volt input lead to one fuse post terminal (should be #12 or #14 wire) and connect a lead from the other fuse post to terminal #1 on the vibrator socket. Connect the transformer leads, the diodes (watch the polarity!), the resistors, and the capacitors (watch polarity!). Solder the connections. Connect switch S1 last and fasten it on the chassis. Use #12 or #14 wire for the positive battery lead.

Insert the vibrator and the fuse. Connect to a 6-volt battery or a battery eliminator to check operation. The vibrator should hum smoothly and the hum should be relatively low. A dc voltmeter connected across the binding posts should indicate about 225 to 250 volts under no-load conditions if everything is OK. If you do not get this indication, or if your fuse blows, recheck the wiring. In most cases incorrect operation results from incorrect wiring rather than from faulty components.

Characteristics: The original model of the power supply provided 245 volts under no load conditions. It took 15 seconds after the switch was turned off for the output voltage to drop to 50 volts. The bleeder resistor R3 causes C3 to discharge when input power is interrupted. Otherwise C3 would hold its charge for a long time. If R3 had a lower resistance C3 would discharge faster, but there would be less output current available.



3 A CHASSIS LAYOUT

B GROUNDING SPRING DETAIL

Under a 30 ma load the output voltage was about 205 volts on the original model. The capacitors discharged to a few volts in less than a second after the switch was turned off with the load connected. Under a 35 ma load the output voltage drops to about 175 volts.

Variations: The ripple voltage under a current drain of 20 ma is about 0.2-volt RMS. This is sufficiently low ripple for most applications. If better filtering is required for a critical application, replace the 8 mfd. capacitor (C2) with a 40 mfd., 450-volt capacitor.

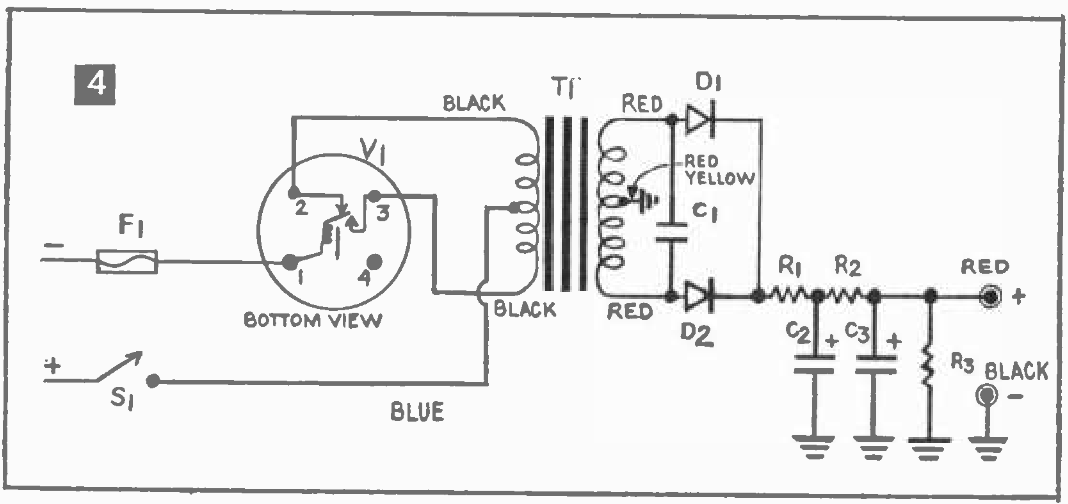
If this power supply is to be used for mobile operation with the automobile engine running, it should be housed in a metal case. You'll also have to ground one of the 6-volt input leads. Determine the polarity of the ground on your automobile electrical system. You can check for a metal braid connection from battery to auto chassis. If plus is grounded, ground the 6-volt plus lead on your power supply. If minus is grounded on your car, ground the 6-volt minus lead on the power supply.

If your car is equipped with an auto radio, it will be equipped with noise suppression devices. If it isn't, you'll have to do some work on the car if you wish to use this power supply with radio equipment. That's a whole subject in itself beyond the scope of this article.

Even when an automobile has had noise

MATERIALS LIST—VIBRATOR POWER SUPPLY

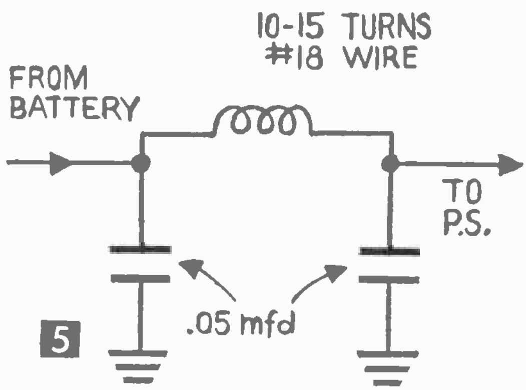
Desig.	Size and Description
R1, R2	100 ohm, ½-w carbon resistor, 10%
R3	100 K, 1-w carbon resistor, 10%
C1	.01 mfd, 1600-v tubular capacitor (Lafayette C-527)
C2	8 mfd, 450-v tubular electrolytic capacitor (Lafayette C-113)
C3	40 mfd, 450-v tubular electrolytic capacitor (Lafayette C-131)
D1, D2	silicon rectifier (Lafayette SP-196)
V1	4 prong 6-v vibrator (Lafayette MS-14)
T1	vibrator power transformer (Lafayette TR-77)
S1	SPST toggle switch (Lafayette SW-21)
F1	4 amp fuse (Lafayette EL-231) fuse extractor post (Lafayette EL-370)
	4 prong socket (Lafayette CM-91)
	two tie down strips, 2 lug (2 req. Lafayette MS-232)
	5-way binding posts (2 req. Lafayette PJ-21, specify 1 red and 1 black)
	Two 3¼ x 4½ in. aluminum open end chassis (Premier ACH-1352)
	Parts for this project may be obtained from: Lafayette Radio Co., 111 Jericho Turnpike, Syosset, L. I., N. Y.



suppression treatment, you may have to add a 6-volt line filter in the vibrator power supply. Figure 5 shows the circuit of a filter which will tend to keep noise from entering into the auto electrical system. The filter should be close to the point where the *above* ground 6-volt lead enters the power supply.

How It Works: The dc battery voltage is converted to pulsating dc by the vibrator. When battery voltage is applied, current passes through the plus lead through the transformer primary into pin 2 of the vibrator, through the electromagnet coil, back to the battery. This causes the armature to be attracted. Current flow to pin 2 of the vibrator is interrupted, and current flow through pin 3 is initiated. When the current flow through the electromagnet is interrupted a spring acts on the armature to return it to its rest position, and the cycle is repeated. Thus, a pulsating current is applied to the transformer.

The transformer converts the pulsating dc current to ac and steps the voltage up in the secondary. Diodes D1 and D2 are connected in a full-wave rectifier circuit and convert the transformer secondary voltage into pulsating dc again. R1, C2, R2, and C3 filter the pulsating dc and reduce the ripple voltage to the value cited earlier. C1 is a buffer capacitor which reduces vibrator switching transients. R3 is a bleeder resistor which is provided as a safety measure.



Anti-Snooper Alarm

If a marauder is quiet as a mouse, he won't get past this one! It uses a mouse-trap to trigger a bell!

By WILLIAM L. ROPER

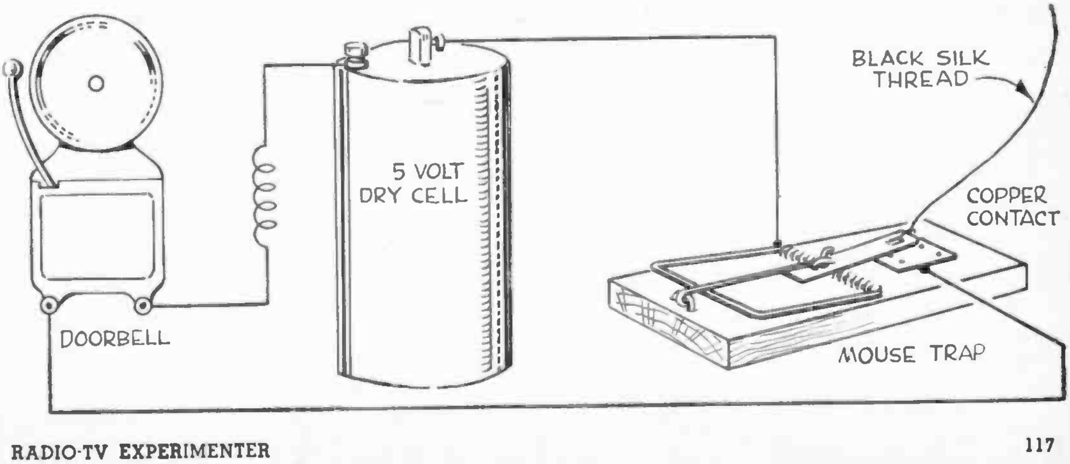
Russ Hall, 13, of Chino, Calif., with anti-snooper alarm. "It keeps my two younger brothers out of my electronics lab" he says.

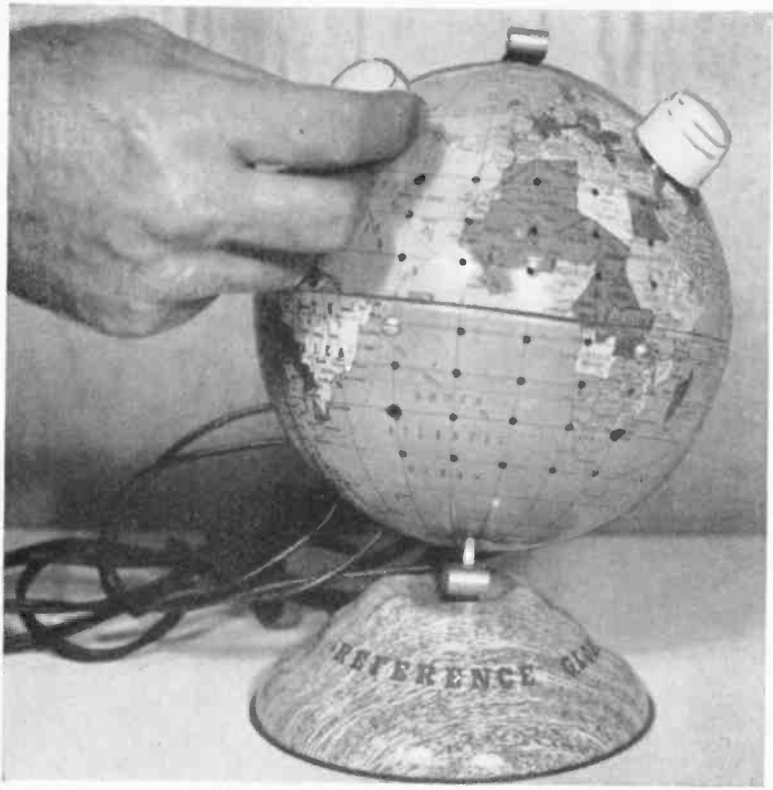
RUSSELL HALL, a 13-year-old Chino, Calif., boy, invented this simple device when he was 12. It has proved very successful in safeguarding his electronic gadgets from his two younger brothers. It is easy to make.

When a snooper brushes against a black silk thread stretched across the room or in front of a work-bench, it will start a bell ringing. The unexpected noise usually sends the would-be marauder scampering.

All you need to construct your own alarm are: a door bell, a dry cell of sufficient voltage to ring the bell (a 5-volt dry cell will do it), an ordinary mouse-trap, a small piece of copper about the size of a penny, a 6-foot length of black silk thread, and about 12 ft. of insulated door bell wire. The drawing explains the circuit.

The piece of copper is fastened with a thumb tack or small nail to the upper surface of the mouse-trap, so that when the trap is sprung, the wire of the trap completes the circuit. Only a slight tug at the silk thread is needed to trip the trap, completing the circuit and setting off the alarm. The thread, which is invisible at night and barely visible during daylight hours, can be stretched across a window or doorway, and the bell placed several feet away, or even next door, if you have enough connecting wire.





Tune in a station with the knob at the left. The other knob is your volume control and on-off switch. Holes allow sounds from speaker to come out.

Globe Radio

Housed in an attractive dime store case, this radio is a handsome desk accessory

By HOMER L. DAVIDSON

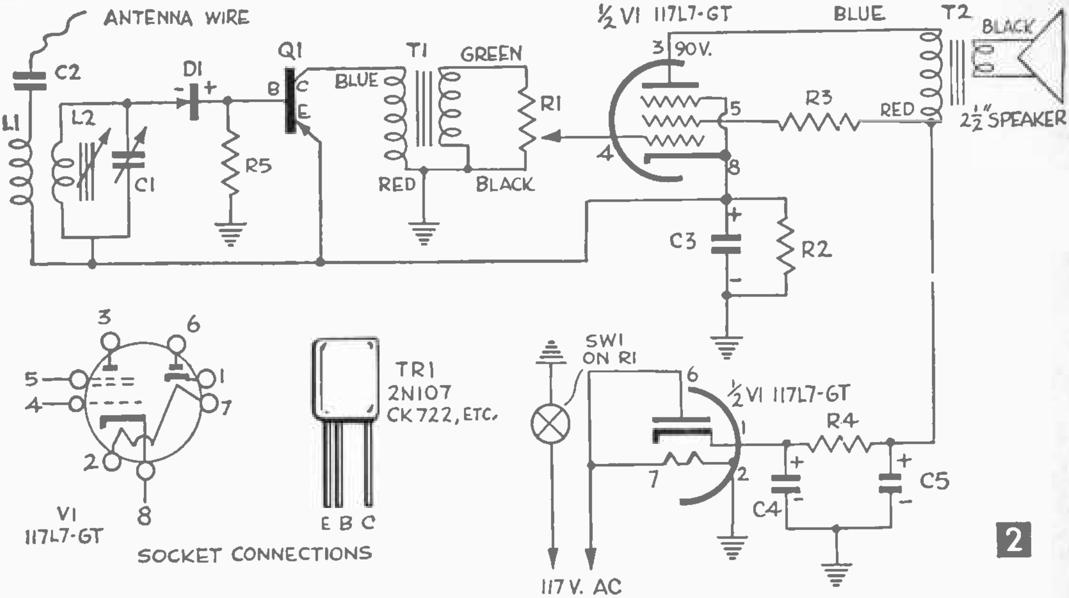
LESS than $12 and a little work will reward you with a novel radio. The set uses an interesting circuit quirk that you'll want to know about, whether you plan to build or not.

How It Works: The RF coil is a Vari-loopstick with a micrometer adjustment screw. This coil was modified by winding 50 turns of No. 36 enameled wire over the original winding and to keep the coil intact, two layers of Scotch tape were applied. A 365 *mfd* variable capacitor is used to tune through the broadcast band. Fasten a hank of antenna wire to C2 and lay it around the room, clip it to the bed springs, or fasten it to a metal window screen. If a long outside antenna is used distant stations can also be picked up.

A fixed detector rectifies the RF signal and couples it directly to the base connection of the transistor amplifier. The audio transistor amplifies the signal and then it is transformer-coupled to the output tube. In the transistor stage a novel circuit is employed to develop B-voltage for operation of the transistor. This voltage is tapped from the cathode circuit of the 117L7GT output stage. It is about 4½ volts dc. Since this voltage is positive it can not be connected to the collector circuit as in conventional tubes. The emitter circuit therefore, is connected to the cathode circuit of the last output stage and the collector circuit is grounded through the primary of T1. In turn this makes the collector 4½ volts negative with respect to the emitter. Most transistors operate with a negative potential on the collector terminal. A *Raytheon* CK-722 transistor can be substituted instead of the 2N107, or any low priced audio transistor can be used in this stage of amplification.

A volume control is incorporated in the final input circuit to control local station volume. The 117L7GT vacuum tube is used to amplify the audio signal. The output of the 117L7GT tube has sufficient volume to drive the 2½ in. PM speaker and also has a half-wave rectifier in one envelope. A three or four in. speaker can be employed in this receiver if a larger housing is used.

A half-wave rectifier converts the line voltage to dc voltage. The dc filter network consists of a 50 x 30 mfd. 150-volt electrolytic capacitor and an 1800 ohm 1 watt resistor. There is no hum noticeable in this type of filtering network. Take a piece of ¼ x 2½ x 3⅛ in. plastic and drill all holes for mounting



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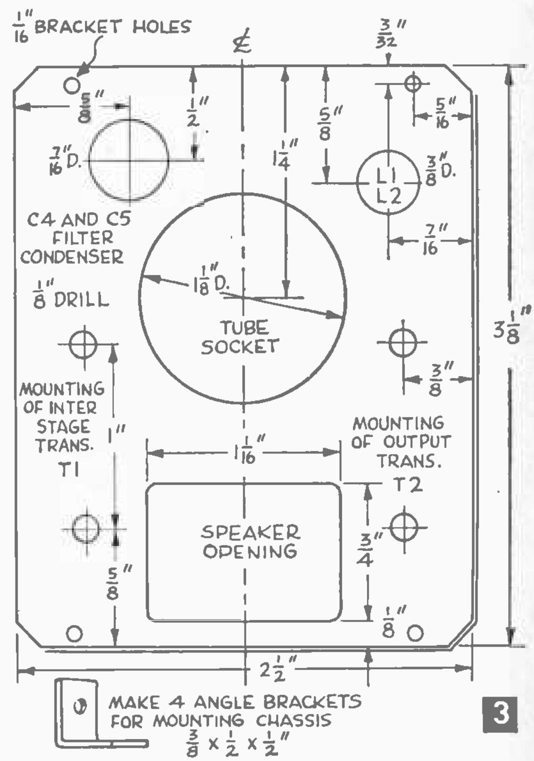
	MATERIALS LIST—GLOBE RADIO
Desig.	Size and Description
C1	365 mfd single gang variable capacitor
C2	.01 mfd 400-v paper capacitor
C3	50 mfd 50-v electrolytic capacitor
C4-5	50 x 30 mfd 150-v electrolytic capacitor
R1	500K potentiometer with spst switch
R2	150 ohm ½-w carbon resistor
R3-R4	1.8K 1-w carbon resistor
R5	100K ½-w carbon resistor
T1	A4723 transformer (Stancor)
T2	A3822 transformer (Stancor)
L1	50 turns No. 36 enameled wire over L2. Hold in place with Scotch tape
L2	Vari-Loopstick
D1	1N64 fixed crystal
Q1	2N107, CK722, or similar transistor
V1	117L7GT tube
	Miscelaneous tube sockets, plastic chassis, globe, speaker

the various parts. Mount all parts on the plastic base except the tuning capacitor and volume control.

Wire the components circuit (see Fig. 2). The small transistor and fixed crystal are soldered directly to the circuit and extreme care must be exercised so that too much heat will not damage these units. There are no critical wiring problems or methods used except to make all leads short and direct as possible. A pictorial diagram is shown in Fig. 4.

Be sure and check the small radio wiring diagram (Figs. 2 and 4) before firing up the unit. Do not mount the radio chassis into the globe before testing it. Turn the volume control and switch on. Watch for the 117L7GT tube to light up and turn the variable tuning capacitor until stations are heard. Tune in a local broadcast station with the volume control full on. Now lower the volume to normal. Adjust the ferrite coil for louder volume on the weaker stations. The stations should tune in all over the broadcast band.

Testing: If there is no sound from the small speaker touch the point of a screw driver to pin 4 of the output stage. A hum should be



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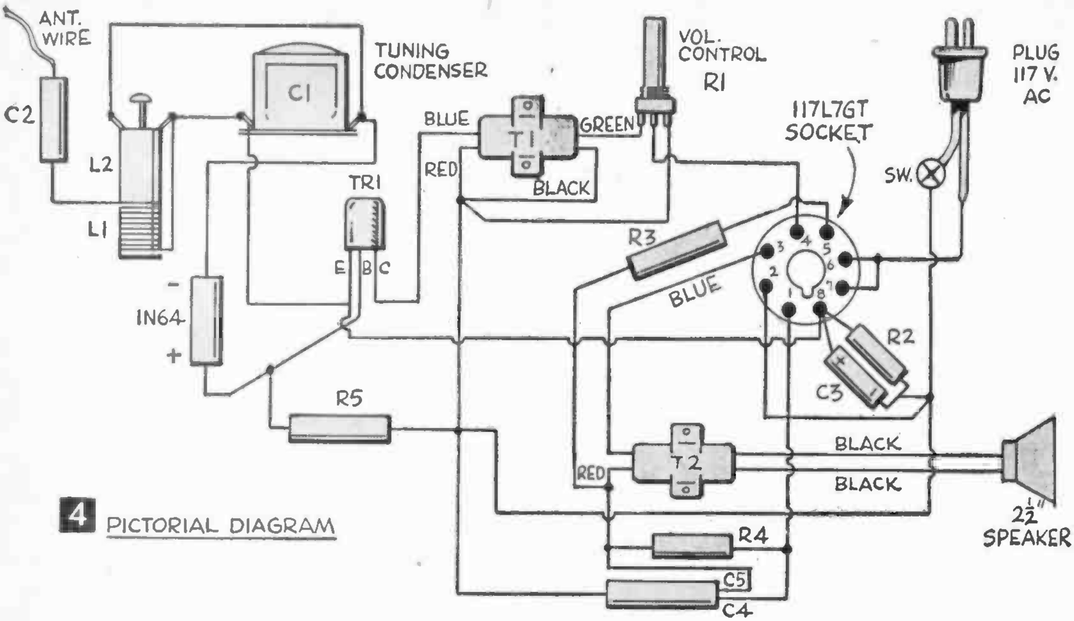
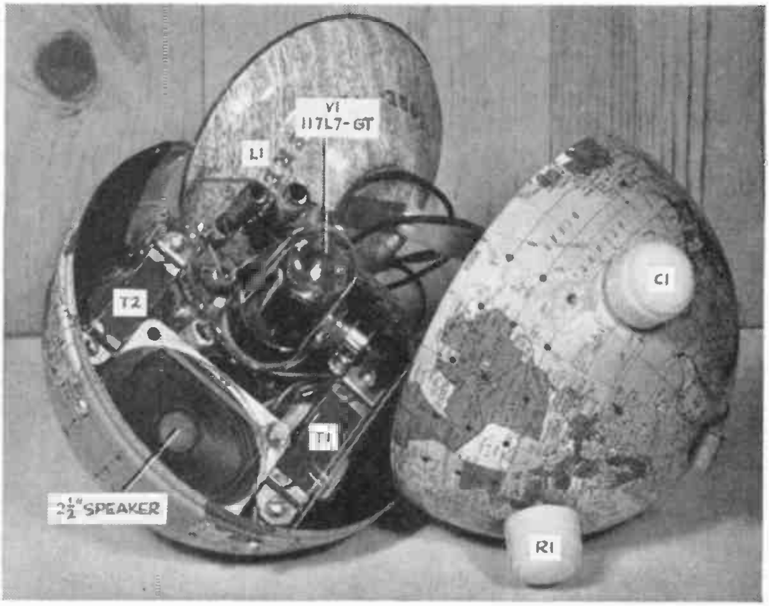


4 PICTORIAL DIAGRAM

heard. If not, check the voltage from pin 1 of the rectifier section. About 120 volts should be noted at this point. Check the voltage on the plate of the output tube. The trouble can be found by using the voltage and resistance check method. If a hum is heard on pin 4 proceed to the base of the transistor. A louder hum will be heard if working properly. The volume control must be full on. A positive 4½ volts will be found on the emitter of the 1st audio stage. When clipping the antenna wire to a metal object a definite click or scratching noise is heard.

After the radio is working properly, mount the plastic radio chassis into the small globe. (Fig. 5). Use small angle brackets on each corner to hold the chassis to the contour of the globe. Bend the brackets down along the slanting sides. A large rubber grommet is placed around the volume control and variable capacitor where they protrude. These rubber grommets isolate the chassis from the operator. Use masking tape over the transformers if they tend to touch the metal sides. If the chassis is placed in the center of the globe, every part is isolated from the globe container.

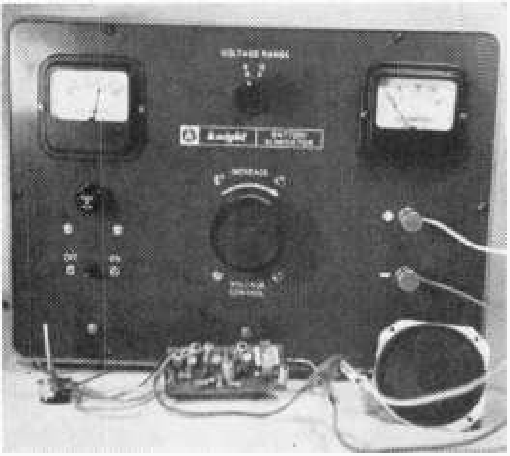
For the speaker opening, a few alternate small and larger holes were drilled to let the music out of the container. Place a couple of attractive white knobs on the controls and the project is finished. The world globe was purchased at a dime store for 59 cents. If a plastic one is available, use this.



The radio is built on a plastic sheet which, when complete, fits into a dime-store globe.

Want to eliminate some of the hum from your battery eliminator? Try this handy

Filter Tip



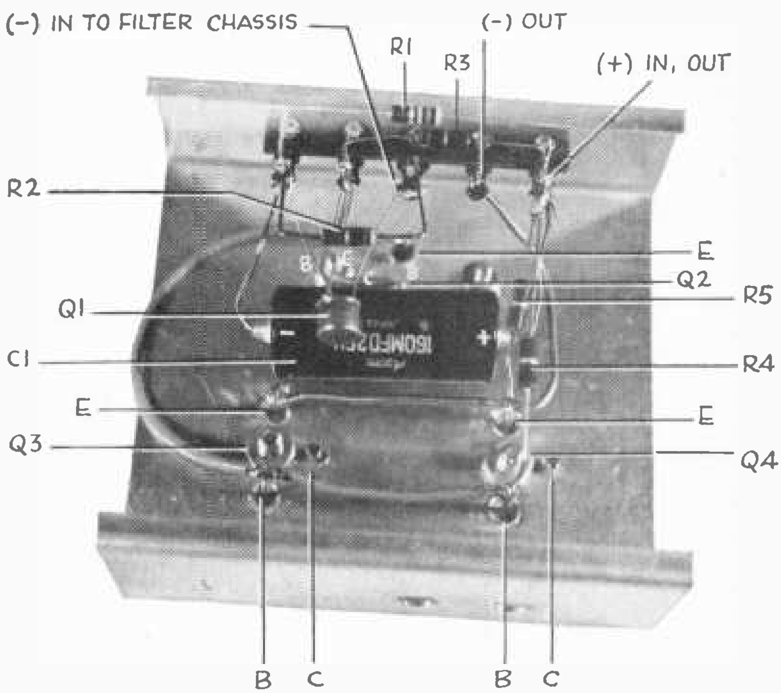
By FORREST H. FRANTZ SR.

WHEN you get down to servicing an automobile radio, you run into the problem of where to get the voltage to power the thing. After lugging the battery from the car to the workbench a few times, you soon learn that a battery eliminator can save much work and many steps.

You'll find, however, that the ripple voltage present in most battery eliminators introduces an annoying hum during test. While the automobile radio has built-in filtering and noise suppression, the transistorized radio does not. As a result, you can't hear the signal for the noise. If you can reduce the ripple by a factor of 100, the battery eliminator can be made to serve better for car radios, and very well indeed for testing the little transistor jobs, as well as numerous other demanding applications.

Examine the circuit (Fig. 5). It is a three-stage cascade current amplifier which permits you to use small capacity, large resistance (low cost) filtering of the small dc current input required by the amplifier. Without the amplifier, resistance-capacitance filtering would be impossible, as a resistance of even one ohm would produce a voltage drop of 10 volts in a 10 ampere circuit.

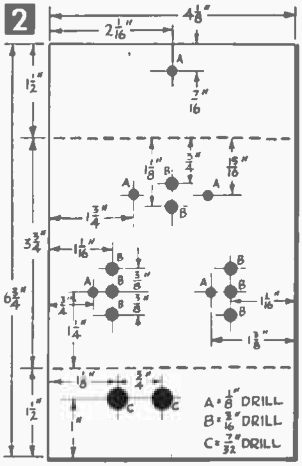
The input filter and voltage divider C1, R1, and R2 reduce the input dc voltage to nine-tenths of the applied value. However, the ac ripple is reduced to about one-half percent of the applied ripple. The input current requirement of transistor Q1 is small, even under heavy current demand conditions on the transistorized filter. Q1 functions as an emitter follower and provides the filtered and amplified current for Q2. Q2, in turn, ampli-



Looking at the bottom of the wired chassis, the locations of the various components is clearly seen. Notice the long transistor leads and the wide spacing of components to permit easier and more rapid cooling below the main deck.

fies the filtered current to meet the higher current demand imposed by the output stage, which consists of Q3 and Q4 connected in parallel. R3, R4 and R5 serve as current returns under no-load conditions.

The filter requires no additional controls or front panel modifications. It will handle up to four amperes continuous and to eight amperes intermittent without additional heat-sinking. You can increase the current handling of this unit by bolting a ¼ x 1½ x 4-in. piece of metal to the top edge of the filter chassis.

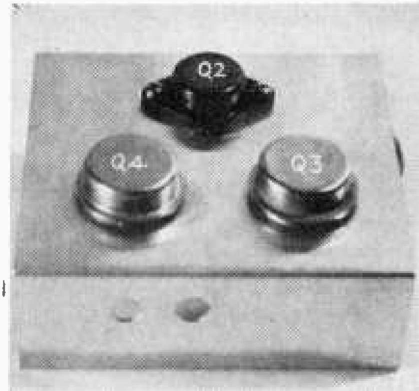


Drill and punch the chassis as shown in Fig. 2. Remove all burrs and chips. Mount the components as in Figs. 1 and 3. Follow the schematic diagram (Fig. 5) to complete the wiring of the filter.

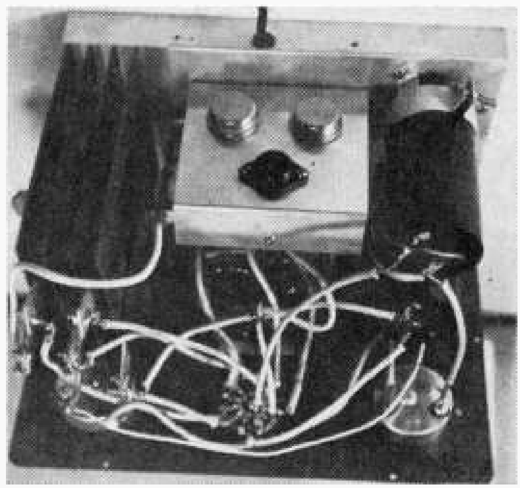
Mount the filter chassis in the battery eliminator, using insulating shoulder washers, and be sure to use insulating tape liberally wherever a possible short circuit might occur. The completed installation is shown in Fig. 4.

The battery eliminator wiring must be altered to connect the eliminator output to the filter input. The meters and eliminator terminals must be properly wired to the filter output.

The filter was tested at six volts, eight amperes and at twelve volts, five amperes for half-hour periods without additional heat-sinking.



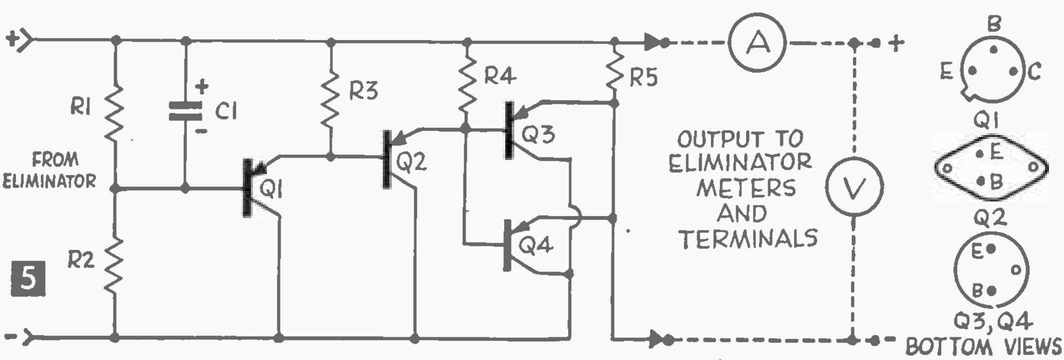
Top view shows how the power transistors, Q2, Q3, and Q4 are mounted. No extra controls are required in normal use.



The filter installed in a battery eliminator.

MATERIALS LIST—FILTER TIP

Desig.	Size and Description
R1	47K ½-w carbon resistor
R2	4700 ½-w carbon resistor
R3	6800 ½-w carbon resistor
R4	1K ½-w carbon resistor
R5	270 ohm, ½-w carbon resistor
C1	160 mfd, 25-v miniature electrolytic capacitor
Q1	2N1379 transistor (Texas Instruments)
Q2	SP-243 transistor (Lafayette Radio)
Q3, Q4	SP-244 transistor (Lafayette Radio)
Chassis	1½ x 3¾ x 4⅛ in. Aluminum. (Premier ACH-1354) five-lug soldering strip



Basic Bugging Outfit

If it is necessary for two people to listen to one telephone conversation, the bugging outfit provides both legal pickup and amplification for the listener's ear.

Miniature transistor pocket amplifier has many interesting applications

By JAMES A. McROBERTS

ORIGINALLY, the basic amplifier described here was intended to "bug" your own telephone without tapping the wires. Loudspeaker operation permits several persons to hear both sides of the conversation. And the amplification greatly assists understanding of weak sound from a distant telephone. In most states induction pickup bugging your *own* phone is entirely legal; however, check the local law. Any recording may require a high pitched 'beep' to inform the distant talker that a record is being made of his conversation.

Modification of the basic pickup amplifier enables it to do many other things while remaining unimpaired as a phone pickup amplifier. An input jack and tip jack output allows various accessories to be connected. Details of these changes follow discussion of the various services this unit can perform now.

Telephone Pickup. For its original purpose, install a miniature plug on the end of the induction pickup cable. Shield is soldered to the outer sleeve lug of the plug to mate with body or ground portion of the input jack on the amplifier.

Speaker is equipped with phone tips for insertion into the tip jacks. A miniature earphone (6 ohm impedance) can be substituted for the speaker if desired. Then the speaker can be used for group listening as in a business conference. The earphone enables the user to take advantage of the gain of the amplifier if the distant sound is too weak for private listening, and to do so without disturbing others nearby. Figure 4 shows the device ready to work with earphone output and phone pickup. Complete instructions for attachment of the pickup comes with that component.

Microphone Bug. Even more useful is the microphone input. A Shure MC-11 mike with shielded cable is equipped with a plug for the

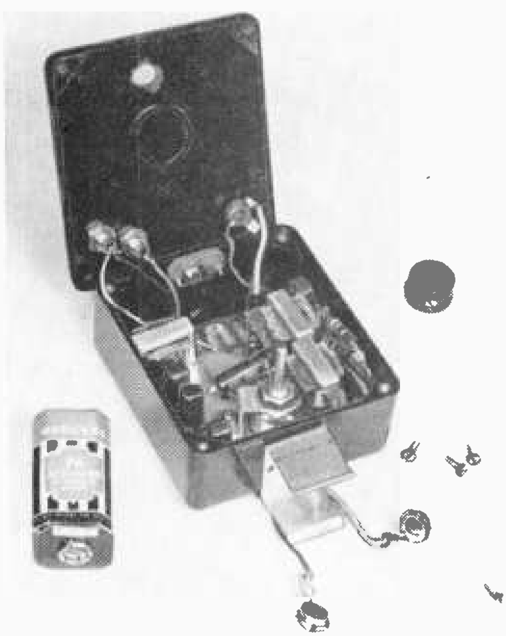
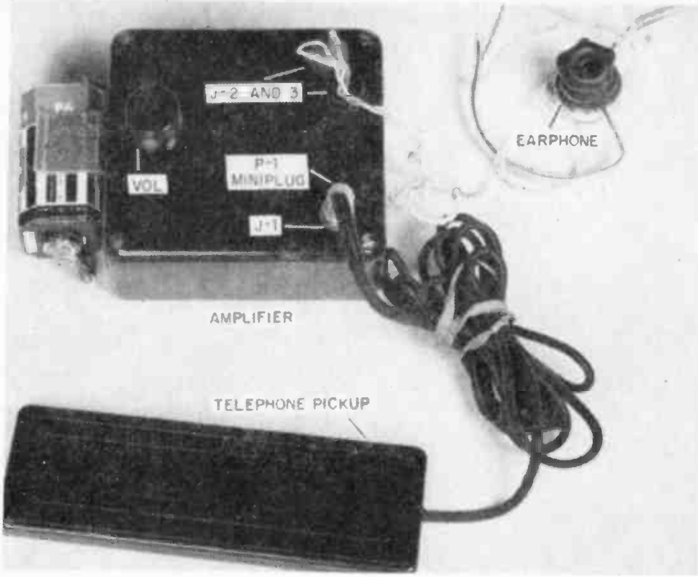


FIG. 1: House the amplifier in a small convenient box, such as a plastic meter case. Mounting the battery outboard as shown, permits easy changing when necessary. Speaker plugs in jacks.

FIG. 2: For use with the telephone, use a mating plug on the input cord and connect the earphone to the output jacks. Place pickup under phone and you have a second earpiece for a third party.



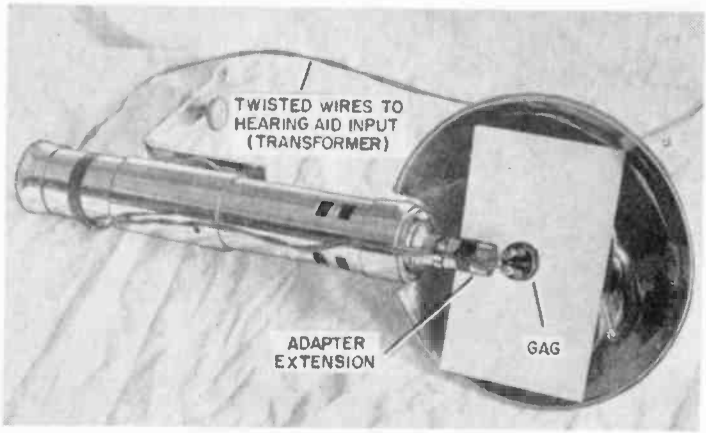


FIG. 3: You can mount a microphone facing into any parabolic reflector, such as a flash gun. Also lamp shades, or auto headlamp reflectors from old cars. Result is a very highly directional effect for long distance use.

input. A variety of outputs are possible, viz., speaker, earphone, tape recorder. The earphone or speaker can be plugged in as with phone pickup duty. So too for a tape recorder if it has a low impedance input for connection to a radio or TV. If the tape recorder input is only high impedance, a matching transformer to the output (3.2 to 6 ohms) is required.

Figure 6 shows still another useful accessory. Fifty feet of phono wire is spooled onto its shipping reel and is equipped with a plug on one end and a jack on the other. The entire 50 ft. can be unrolled or as much as you please. The mike, pickup, or other input device (1000 ohm impedance or near thereto) plugs into the jack while the plug mates with the jack on the amplifier. This enables distant placement of the microphone. A second spool of another 50 ft. may be added if some loss of volume is tolerable. Now some uses will be described in more detail:

1. Hearing Aid. The short mike cable version (Fig. 5) with an earphone makes a very powerful and lightweight hearing aid. It is useful for the hard of hearing and also for those with normal hearing. A case in point is the detective, (and sometimes crooks too). A rubber tube may be fitted over the microphone to allow pickup in only a rather narrow beam—the mike "shield" (Fig. 5). One can pick up conversation at quite a distance with such a gimmick while materially reducing other sound and noise to either side of the shield's restricted cone of acceptance.

In this model, the shield was made from the mouthpiece of a war surplus microphone. A piece of foam rubber was cut circular in shape to fit the narrow opening of the flared mouthpiece. A cap from the junkbox of aluminum slipped over the same end outside the rubber cylinder to make it more rigid. The microphone is pressed into this cup-like shield and held there by friction. When that use is finished, the mike is removed from the shield which goes into one of the detective's voluminous pockets—they carry almost anything! The mike is now free for another job and the shield is handy if needed.

A different type of microphone was once placed at the focus of a photo flash reflector to pick up sound across a rather wide street (Fig. 7). A parabolic reflector such as an auto headlamp reflector of the prewar style has been used similarly with a mounting on a camera tripod equipped with a pan head. The mike is at the focus of the reflector in both cases. Point the open face of the reflector at source of sound.

2. As a "bug," the device can provide fun at parties in addition to its obvious use to

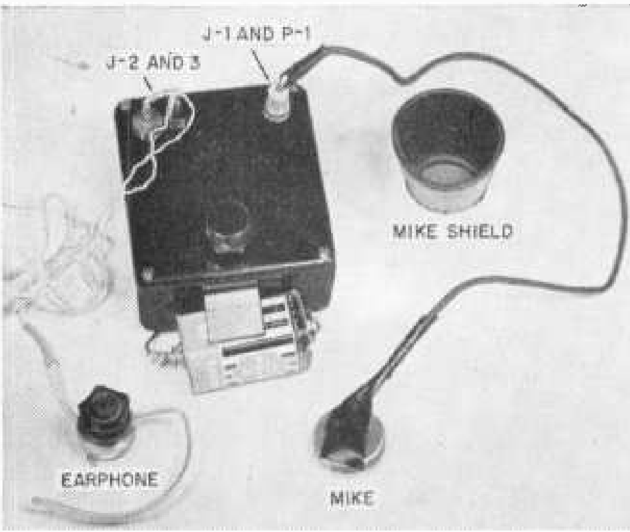


FIG. 4: Mount the microphone unit to a surplus telephone shield, and plug in. While the directional effects are not as good over great distances as the reflector, side noise is cut down considerably.

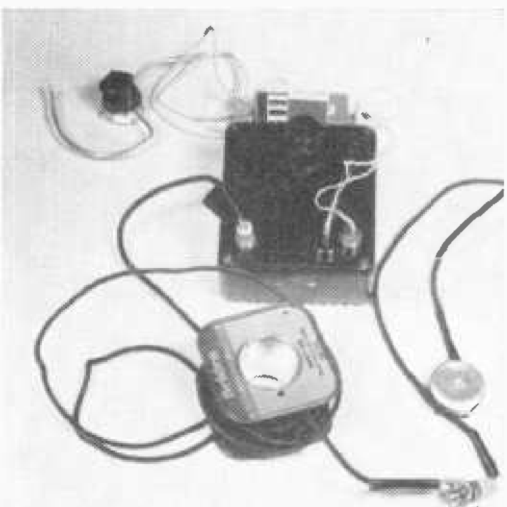


FIG. 5: Connect a plug to one end of a 25-ft. length of phono cord and a plug to the other end. Keep the spool with your amplifier for use when long runs are needed between the mike and amplifier units.

invade somebody's privacy. In these types of service, the microphone cable is unrolled and the microphone placed where it is easy to pick up the wanted sound and avoid extraneous sound and noise.

One such application is at a bird's nest. The microphone may be left there and the amplifier connected at will. One may connect the output to the input of a tape recorder through a matching transformer (3.2 ohms to the input impedance specified by the recorder manufacturer.) Similarly, the hearing aid and all the other applications can be fed into a recorder with a matching transformer. The output of the recorder may be monitored with a headset or an earphone. Details of this monitoring will come with the instructions for the machine or may be secured from its maker.

Mind Reading Act. Amateur and professional magicians employ a somewhatly similar system which may be set up at your next gala party. The magician has a 'brain wave' on his stand on the stage. He connects a headset or earphone into it. Actually, he plugs into the output of such an amplifier as the 'bug' described here. An assistant talks to a spectator in the audience at a *definite* seat. Needless to say, the microphone is at the seat. And after a little hocus pocus the magician reads the mind of his assistant, or the unwitting stooge at the designated seat. A similar arrangement is to let the mike remain hidden near a comfortable chair and eavesdrop. For this work the microphone cable is unrolled from its spool as required. Now if a very long run of wiring is necessary, one should use a low impedance line and a matching transformer. The input impedance of this amplifier is 1000 ohms. Twisted or parallel electric light wire may be used for such a low impedance run of wire. Do not run close to electric lines or excessive hum will be developed. Lightly twisted enamel wire may be used if it is desired to make the wiring inconspicuous. Do not overtwist else a short circuit may be made due to scraping off the wire's insulating enamel.

3. Random pickup services such as a remote baby sitter is still another use to which this unit can be put. Here the microphone cable may be tacked in place along a wall taking care not to short the inner conductor to the shield. Keep away from light and phone wires. On long runs, less hum and similar interference may be developed if the outer shield of the microphone, the microphone cable, or one of the battery leads is

MATERIALS LIST—BASIC BUG OUTFIT

Amt. Req.	Size and Description
1	transistorized amplifier
1	miniature jack, #MS-282
2	tip jacks, #PJ-23
1	battery #BA-2
1	matching transformer #TR-120
1	volume control with switch #VC-28
1	loud speaker to suit requirements
	assorted cabinet, hardware, etc., as required

All materials available from Lafayette Radio Electronics, Co., 111 Jericho Turnpike, Syossett, N. Y.

grounded.

As a baby sitter, a larger speaker should be used. A 6 in. size is preferable. Even the slightest whimper of Junior in his crib can be heard if the volume is turned up sufficiently. And battery life is long when there is little sound being amplified. We can add the burglar alarm feature of the device as a finishing touch to the baby sitting angle. Here the unit may be turned on from time to time, or left on. For continuous operation, in any of these duties the large standard dry cells may be hooked in series instead of the smaller battery only intended for portable operation. Use 6-1½-volt batteries. Connect the final + and − as for the smaller battery. Here one can bring out longer leads. Or put on a pair of battery plugs onto the leads from the big battery supply so the unit can be disconnected for a hunting or fishing trip as a sort of night alarm for unusual loud noise, using the small battery.

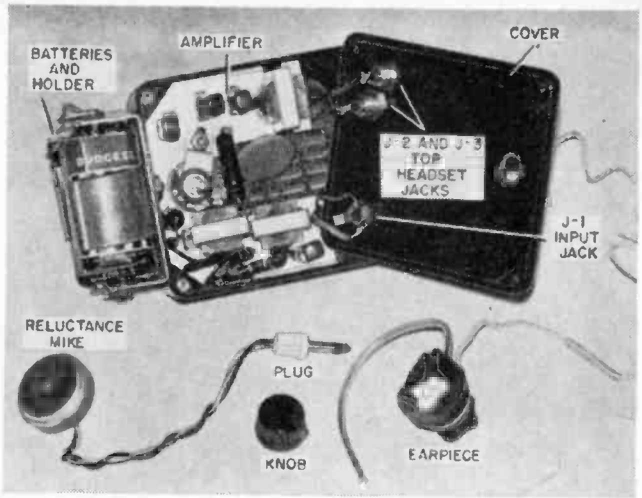


FIG. 6: The parts placement is easy to see. When the amplifier is completely installed, the cover fits over the case so the volume control shaft is run through its matching hole. Then replace the knob.

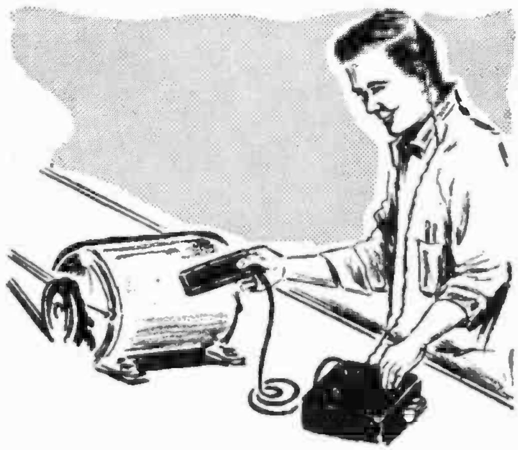
4. A low power musical instrument amplifier is still a further use for this tiny amplifier. It has ample power for small amateur performances with a guitar, violin, harmonica, zither, etc., but is not suitable for large gatherings in public halls etc.

Here employ a larger PM speaker (6-9 in.) in a baffle box. Use a contact microphone suitable to the instrument. Ground one side of the microphone by a jumper to the grounded side of the input plug.

With these specific uses described, we turn to the modifications of the basic amplifier. For specific problems the reader can choose his own input with an appropriate matching transformer, and use his own output with a similar matching transformer to properly match impedances.

5. As an electrical equipment detective use the telephone pickup and either speaker or earphone output. A low impedance matching headset can also be used for the output; it will block nearby noises.

Any irregularity in an electrical motor may be discovered by putting the pickup near the motor and exploring. An ac induction motor should give a smooth uniform hum sound in the earphone (speaker). A dc commutator type will yield a steady whine from the commutator-brush makes and breaks. After listening to a few good motors, the commercial or home repairman can quickly spot a defective unit. And he can obtain an idea of the trouble too. By passing a subnormal current through the motor, he can troubleshoot it after gaining some experience with use of the instrument. A few turns of a shorted motor coil can be detected with this instrument otherwise found only with difficulty. (Fig. 7)



An electric motor generates a spark, which is in essence, a radio signal. The pickup acts as a probe permitting you to hear the sound of the motor. In a short time, you learn the sound of a healthy motor, and after some practice, can even detect symptoms!

Faulty operation of a fluorescent light or starter can be traced with the phone pickup. Reliable indication is given long before the symptom becomes evident visually. Similarly, buried ac wiring can be found if not encased in metal such as a conduit or BX.

While the illustrations show the Lafayette KT-95 kit, any transistorized amplifier can be made to serve equally as well.

The basic modifications required in this project do not affect the amplifier circuit at all. Rather, they concern themselves with making sure the input and output plugs mate and that the cabinet is big enough to house the amplifier, its battery and the speaker.

Build the "Ioneer"

You can enjoy a negative high ion concentration by building this simple device. Then decide for yourself the possible benefits.

The method of ion generation used in this project is based on an idea proposed by General Electric. Rays from a sterilizer lamp are bounced off an aluminum shield. These lamps, ordinarily used in electric dryers and deodorizers are available at many appliance repair shops.

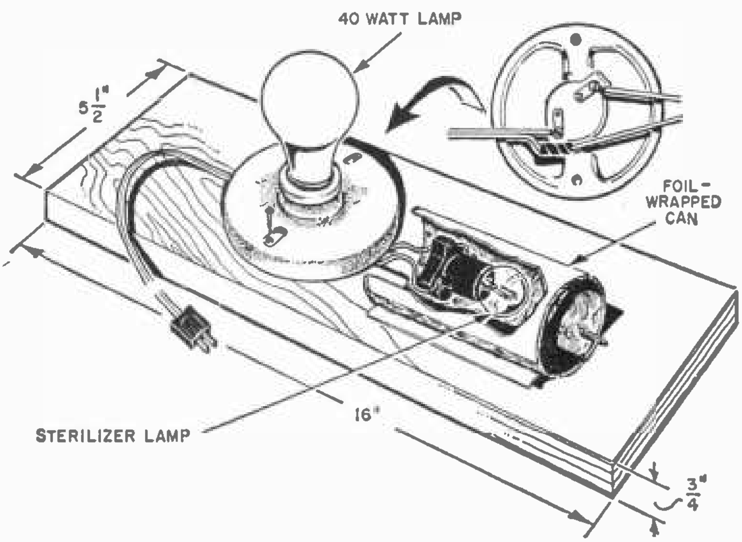
This bulb must be used in series with a 40-watt light bulb. If you install the bulb as shown, the heat from the light bulb will cause a chimney effect through the shield, and diffuse the ions more effectively. In any case, as the sterilizer lamp uses ultra-violet rays, it is a good idea not to look directly into the blue light from this lamp. The shield of aluminum also acts as a light shield.

Use insulated sockets for the lamps. Mount the 40-watt bulb socket on a 1 x 6 in. board, one ft. long. The socket for the sterilizer lamp is supported on two six-in. lengths of No. 14 solid copper wire, of the type used in house wiring.

Make the Beer Can Column by cutting both ends from a beer can. Crinkle two sheets of aluminum foil, 4 x 5 in. Smooth them slightly and place them inside the can, dressing them to the contours of the can. The exterior of the can can then be painted, wrapped, or treated as you see fit.

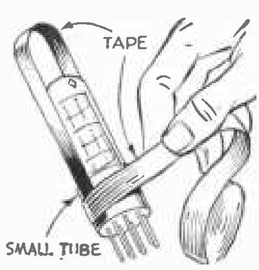
Mount the unit on a smooth wall in an area where good air circulation will be assured. For convenience, you might want to add an in-line cord switch to turn the unit on and off. A snap-on light shield will prevent a glare from the 40-watt bulb.

Try the system on your friends, by inviting them to your home, but not revealing the purpose of the device. Notice their mood upon entering the room, and again, after they've been in it for a while. Some of the reactions may startle you! You can explain the experiment afterward, when they begin to ask why the effects they feel have taken place at all.
—JACK ALLISON.



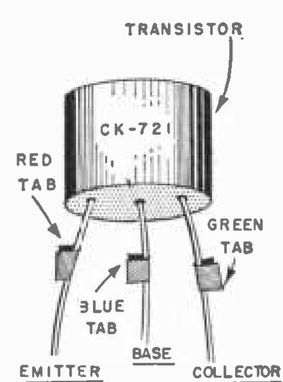
Tape Tube Handle

• Pulling miniature and sub-miniature tubes from their sockets in crowded electronics hookups will be much easier if you provide each tube with a handle. Use a strip of masking or *Mystik* tape looped over the top of the tube and secured around the bottom with another strip of tape. Don't use tape on tubes that heat up excessively, because of the possible danger of fire due to tape igniting. *Never* use plastic tape for this purpose as it ignites easily.

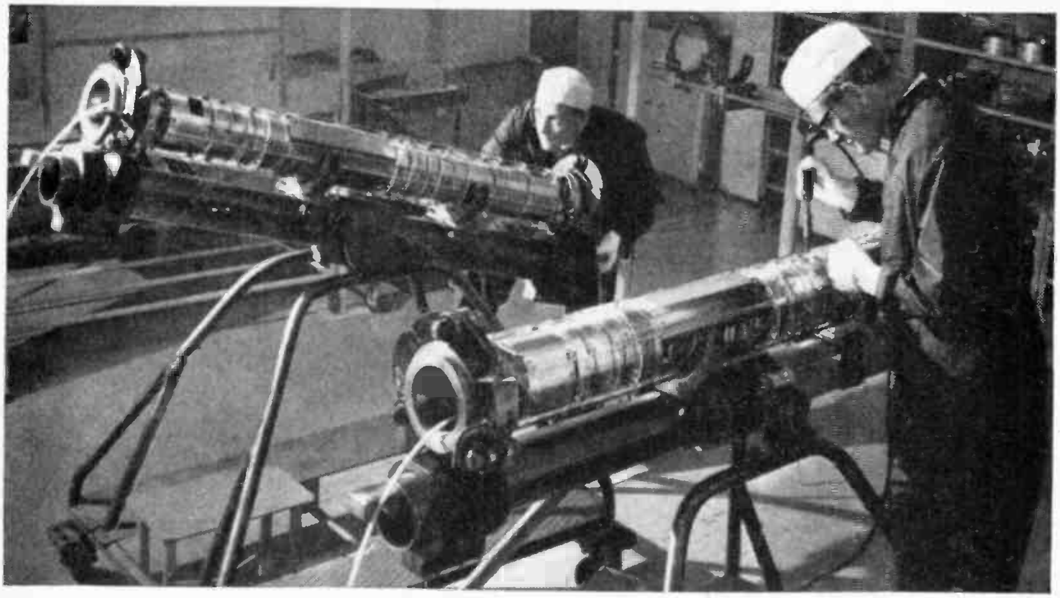


Color-Code Transistor Leads

• Accidentally connecting the leads of a transistor to the wrong terminals in a circuit may ruin it. Prevent this costly mistake by color-coding each wire lead with a small tab of colored plastic gift-wrapping tape. Use red (hot) tape for the emitter, blue for the base, and green (cold) for the collector.—J. A. C.

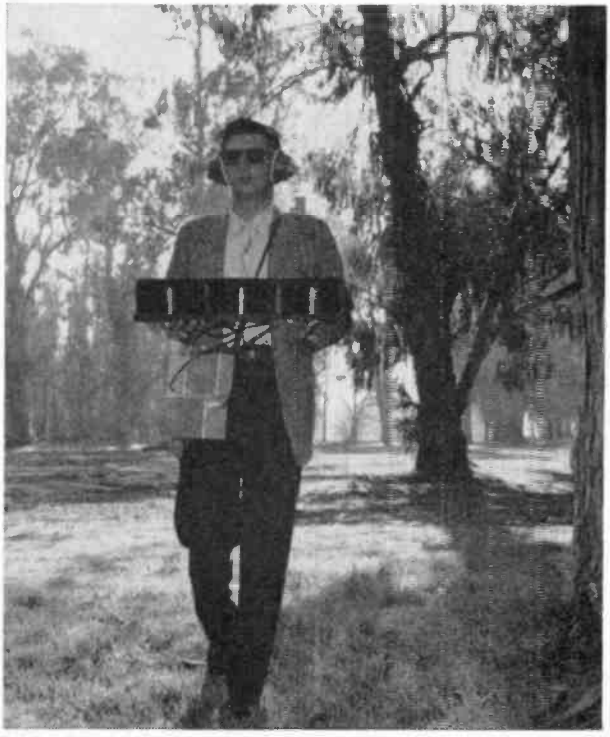


Underwater Artillery Shoots Phone Conversations



DRESSED in surgeon's garb to assure complete cleanliness, technicians make final adjustments on new submarine telephone repeaters that "shoot" conversations across the bed of the Pacific Ocean. Built by a British affiliate of International Telephone and Telegraph Corp., these gold plated "guns" amplify signals as they become weaker in traveling along COMPAC, a transpacific cable that will lie on the bed of the ocean between Australia and Canada. The cable will be capable of carrying up to 80 two-way telephone calls simultaneously and will supplement the interference-prone radio links presently in use.

Bat Radar Helps Blind "See"



A "BAT RADAR" device which, when fully developed, may allow a blind man to throw away his cane has been produced by Lockheed Missiles & Space Co. scientists. In its present, preliminary form, the instrument enables a blindfolded person to detect and make his way around such objects as filing cabinets, cars, trees, and other people. He can walk toward a wall, locate an open door and pass through it without seeing or touching the doorway. With certain refinements, scientists are convinced that the instrument will "see" much smaller objects in a wide vertical range. As with a bat's radar system, the device emits supersonic sounds which bounce off objects ahead and return to be converted into electrical energy which is transmitted to the operator's earphones. Space age technology can easily reduce the size once a practical use is developed.

Three-Transistor AM Broadcast Tuner

By ART TRAUFFER

FOR those who want a fully assembled and wired AM tuner, the Lafayette PK-633 three-transistor AM tuner chassis (Fig. 1) fills the bill nicely. This little tuner is sensitive, selective, and it pulls in stations with surprising clarity. When mounted in a homemade wood box, and used with high-impedance magnetic or crystal earphones (Fig. 2), this tuner is fine for late evening listening, for use as a child's private radio, or for use in hospitals, etc. It also makes a good AM tuner for your hi-fi outfit (Fig. 3).

Figure 4 shows how to make the simple wood box to house the tuner chassis and 9-volt battery. The writer's box measures 2⅛x3½x5⅝ in. and was put together with wood glue and small wire nails, using ¼-in. thick hardwood with the exception of the top and front panel which is ⅛-in. composition board. The outside of the box was sanded smooth, and the corners and edges were rounded off. The wood was given two coats of gray enamel. If you can find a plastic box about this size, use it, but do not use a metal box as it will shield the ferrite antenna coil and reduce the efficiency of the tuner.

Figure 5 shows how the tuner is mounted and wired in the wood box. A ½-in. diameter hole in the front panel passes the variable capacitor shaft. Four round-head wood screws ¼-in long, with washers, hold the chassis in the box. Cut a rectangular opening and drill two holes for mounting the slide switch. The two phone-tip jacks are mounted

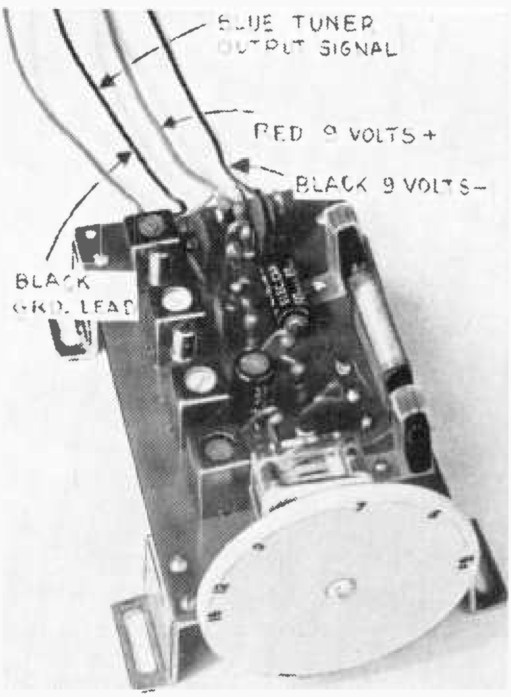


Fig. 1: The Lafayette PK-633 subminiature AM broadcast tuner is the heart of the unit. You only need box and phones.

Fig. 2: The unit can be used either with earphones directly, or with any amplifier to drive a good-sized loudspeaker system.

in ¼ in. holes in the rear panel. The nine-volt transistor battery is clamped securely by means of a ½x1¼-in. brass angle bracket screw-fastened to the bottom of the box, as shown. Solder the blue and the black AF output leads to the two phone-tip jacks. The red lead (+) on a snap-on battery connector is soldered to the red (+) battery lead on the chassis, and the black (−) lead on the connector is soldered to one lug on the slide switch. The black (−) battery lead on the chassis is soldered to the remaining lug on the slide switch.

A vernier drive, making friction contact with the edge of the tuning dial is a convenience for fine tuning. The simple assembly is shown in Figs. 5 and 6. A banana plug serves as a bearing sleeve for the vernier shaft. Obtain a 1½-in. length of metal or plastic rod the right diameter to fit snugly in the banana jack. Push a soft rubber grommet with tapering sides, firmly onto the rod as shown. A Lafayette MS-185 miniature knob goes on the business end of the rod. The banana jack bearing is mounted in a ¼-in. diameter hole, in the correct position in relation to the edge of the tuning dial, as shown in Figs. 5 and 6.

The box lid is secured with three or four

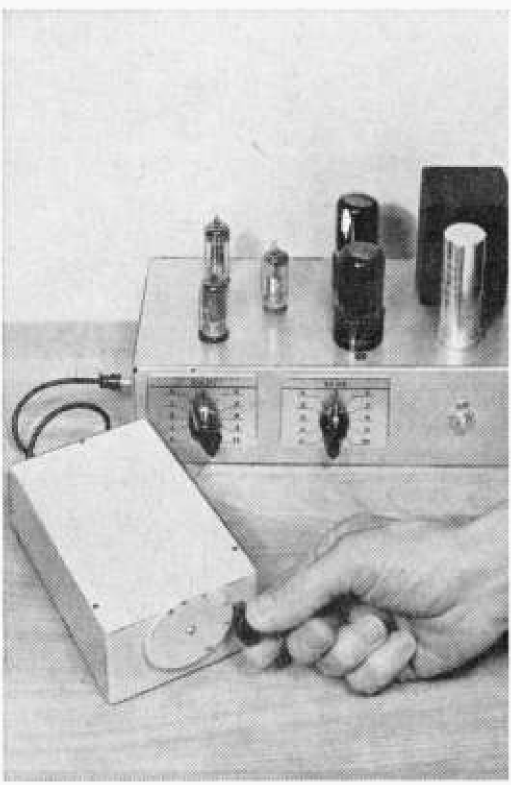
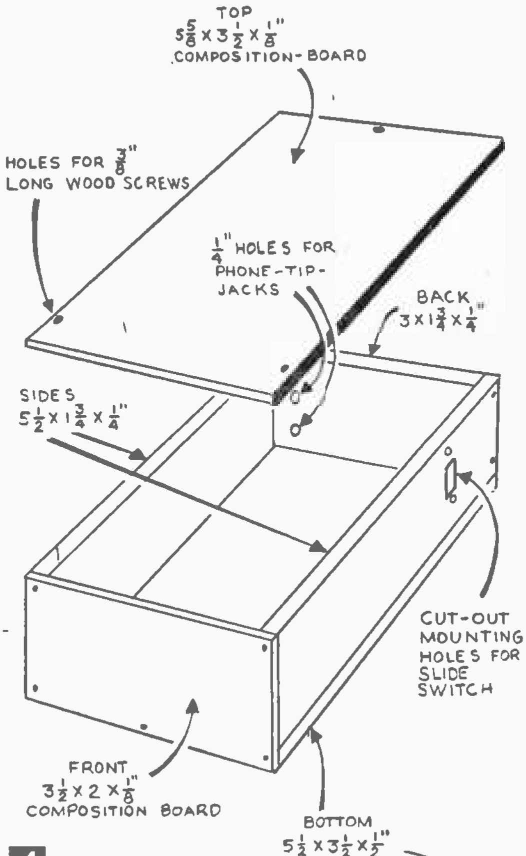


Fig. 3: Shown here with an amplifier, the unit delivers AM radio reception. Note the home-made vernier tuning device.



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MATERIALS LIST—THREE-TRANSISTOR AM BROADCAST TUNER

Amt. Req.	Size and Description
1	3-transistor AM tuner chassis, PK-633 Lafayette Radio ($7.95)
2	phone-tip jacks
1	SPST slide switch
2	6-32 flathead machine screws ½ in. long (for mounting slide switch)
1	9-v battery for transistor radios
1	snap-on battery connector with pig-tail leads (to fit above battery)
1	⅜ x ½ x 1¼" metal angle bracket 1/16" thick (for holding battery)
5	¼" long *rh* wood screws (for mounting battery bracket and tuner chassis in box)
4	small washers to fit above wood screws
	Vernier Drive for Tuning Dial
1	¼" OD metal tube about ⅝" long banana jack having outside threads and two lock-nuts to fit
1	1½" long metal or plastic rod (should fit bore in above jack)
1	soft rubber grommet with tapering sides (grommet should make snug fit on above rod)
1	MS-185 miniature knob Lafayette Radio (fits above rod)
	Wood Box Material (all stock ¼" thick except front panel and top)
1	3½ x 5½" (bottom)
2	1¾ x 5½" (sides)
1	1¾ x 3" (back)
1	⅛ x 2 x 3½" composition board (front panel)
1	⅛ x 3½ x 5⅝" composition board (top)
3 or 4	⅜" long round head wood srcews (for holding top to box) Small wire nails, wood glue, sandpaper, enamel, etc.

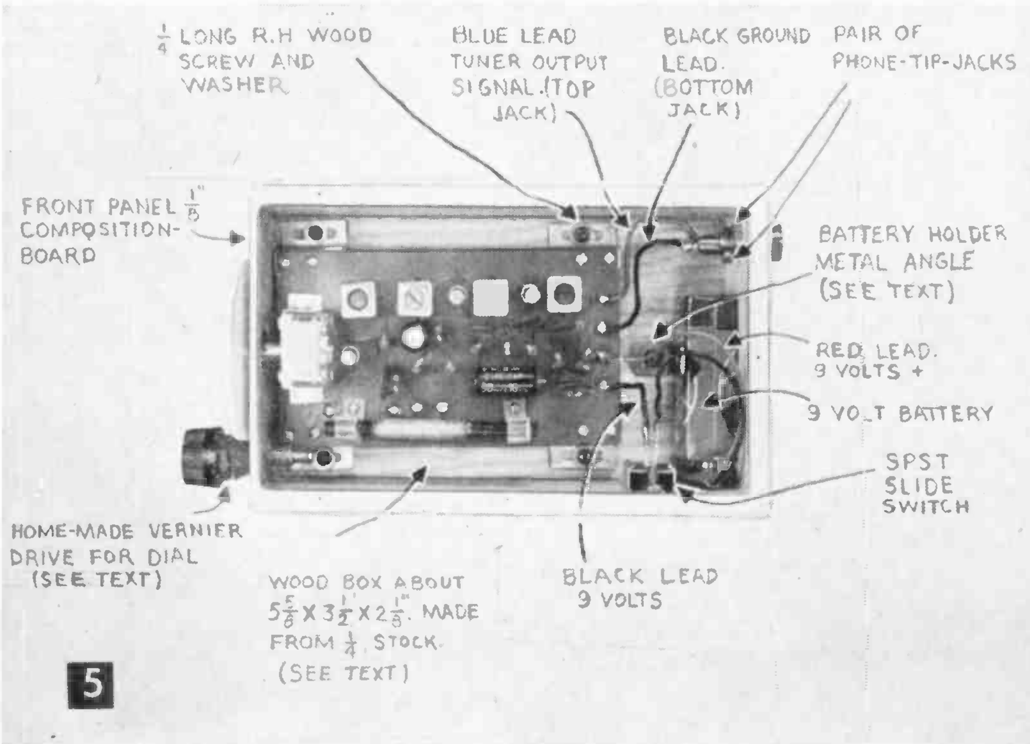
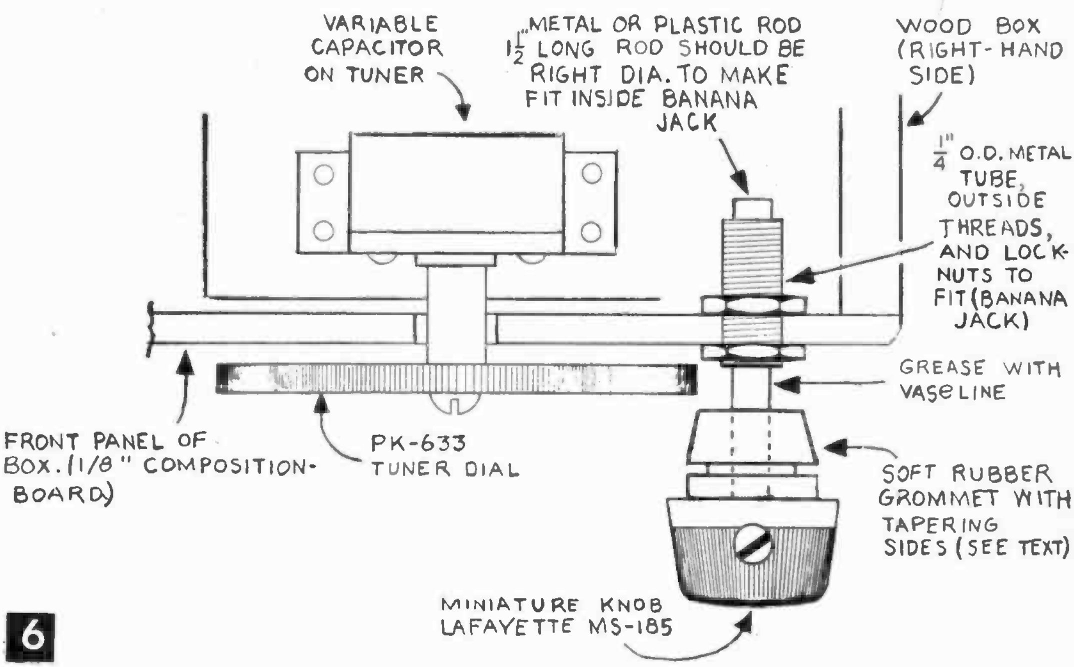


Fig. 6: The friction-type vernier dial is fabricated by the builder. This diagram, supplemented by the text, shows how.



round head wood screws 3/8 in. long. If desired, mount three or four small rubber tack bumpers to the bottom of the box. If you mount three bumpers in a tripod arrangement (two in front and one in rear) the box will always stand solidly on uneven surfaces.

Fig. 1: The directional wire is mounted at Los Angeles and swings over the globe. Here we take a bearing on Hawaii and we can read the approximate distance in miles.

Beam-Aimer or Girdle The Globe!

By FRED BLECHMAN, K6UGT

IF YOU are a ham or SWL DX hound, you know that your best transmission and reception path is a Great Circle line of bearing to the station you're working. But just what *is* that bearing? Most maps give you an entirely erroneous bearing between any two points on the earth, and most Great Circle bearing charts are centered nowhere near your home town, so they also give you a false reading!

Use an inexpensive world globe, a short piece of piano wire, a couple of simple calculations and a small hole punch, and you can make your own custom Beam-Aimer. This will tell you the correct bearing and approximate distance to any spot on earth from your home town. Swing your beam antenna to the bearing shown and you know you'll be working maximum signal path.

The photos show the author's Beam-Aimer centered on Los Angeles; it could just as well be centered anywhere on earth. To make your own Beam-Aimer, you'll need a world globe. This doesn't have to be an expensive or particularly large one, just so long as it is reasonably well made. Locate your home town as closely as you can, and punch a small hole at this point with an ice-pick or awl.

Now for some simple calculation. Determine (as closely as you can from the markings on the globe) your latitude and longitude. The latitude is the number of degrees north or south of the equator; longitude is the number of degrees east or west of Greenwich, England (0° longitude). Fig. 2 shows you how to find the point on the globe opposite your home town in latitude. This turns out to be exactly the same number of degrees on the opposite side of the equator. What could be simpler?

To find the point on the globe opposite your home town in longitude, look at Fig. 3. All you do is subtract home town longitude from 180°; the difference is the number of degrees of longitude of the opposite point in the other hemisphere.

Let's illustrate a typical case, shown in Figs. 2 and 3. Say your town is located at 35 degrees North latitude and 120° west longitude on the globe. To find the opposite point in latitude, just locate the same number of degrees south latitude, below the equator. To determine opposite longitude, subtract 120 from 180; the difference is 60, the number of degrees of longitude east of Greenwich. Simple, especially since you can almost estimate the opposite point just by eye.

Once you have properly located the opposite point, punch another small hole there. Obtain some piano wire about 1/32 in. diameter (not at all critical) and gently form it into a semi-circle equal to the globe diameter. Leave about ¼ in. of wire on each end to act as pivot points when the wire is snapped into the holes in the globe. Bend these ends at about a 90° angle, toward the center of the arc.

Now comes the moment of truth. Snap the wire ends into the holes and swivel the wire. If you have been careful in your calculation,

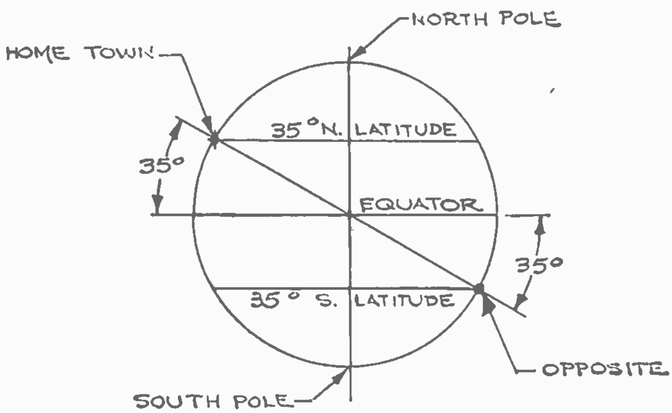


FIGURE 2

DETERMINING OPPOSITE LATITUDE

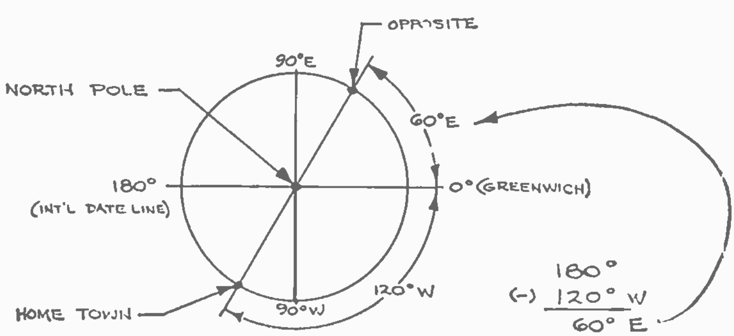


FIGURE 3

DETERMINING OPPOSITE LONGITUDE

Fig. 4: A closer view shows how the wire is first blacked and then marked in 1000 mile increments to scale in white.

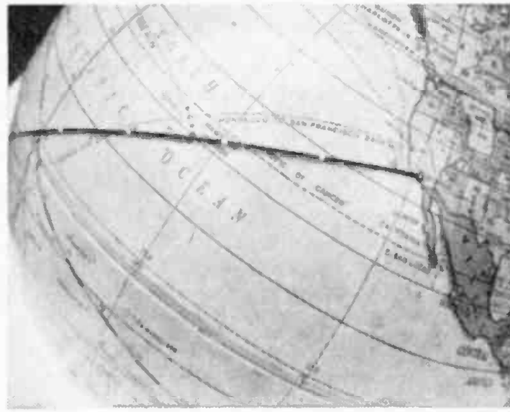


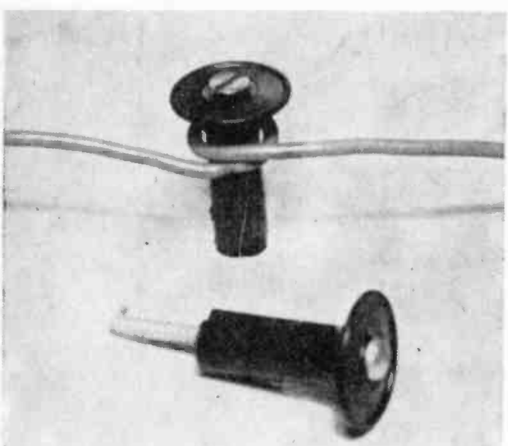
Fig. 5: If you don't carefully calculate the opposite position, here's what might happen. Author goofed two times.

measurements and workmanship, and your globe is accurately marked, you will successfully have girdled the globe. If the wire won't fit in the holes, jams when swiveled, or is too sloppy, either adjust the wire or try a new opposite hole.

The author, until realizing the ease of calculating the opposite point, made two improperly located "eyeball" holes; the calculated hole was right on target.

Marking increments of distance on the wire is another easy matter if you take advantage of the markings on the globe. It just so happens that 15° of longitude at the equator is equal to 1000 nautical miles. Using this measurement, blacken the piano wire with a felt marking pen and put a dot of white ink or paint every 1000 miles.

To determine bearings closely, you could put a compass rose of headings under the hometown pivot, but that could be considered "gilding the lily with a rose." Just swing the wire on the globe to the location of the station you're working. You'll like the Beam-Aimer . . . try it and we're sure you'll find it a worthwhile project.

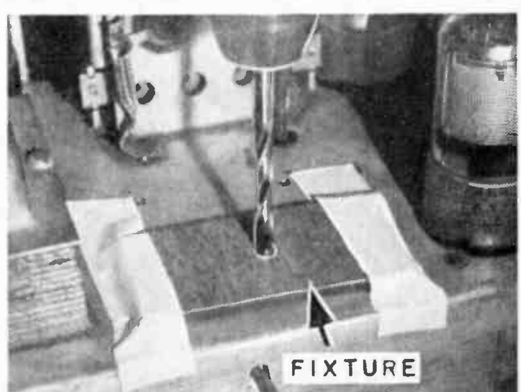


Film Spools As Wire Stand-Offs

• Those plastic spools that 120 film comes wound around can be made into low-loss, no-cost stand-off insulators for wires such as radio lead-in. Cut the spool in half, drill a hole through the inside and insert a long wood-screw. Wrap one turn of the wire around the insulator near the flange as shown.

Joltless Chassis Drilling

• When drilling a hole in a radio or TV chassis, a hammer and center punch are often used to make an indentation that will keep the drill bit from "walking" out of position. This, however, gives the set a jolt that's likely to jar something loose. To prevent this, predrill a hole in a small piece of hardboard and tape hardboard to the chassis over the spot



where the hole is to be drilled. Using this drilling fixture, there's no need for a center-punched indentation to start the drill.—J.A.C.

This attic FM or TV antenna rotator will provide top notch performance with low cost, and put that wasted crawl space to use

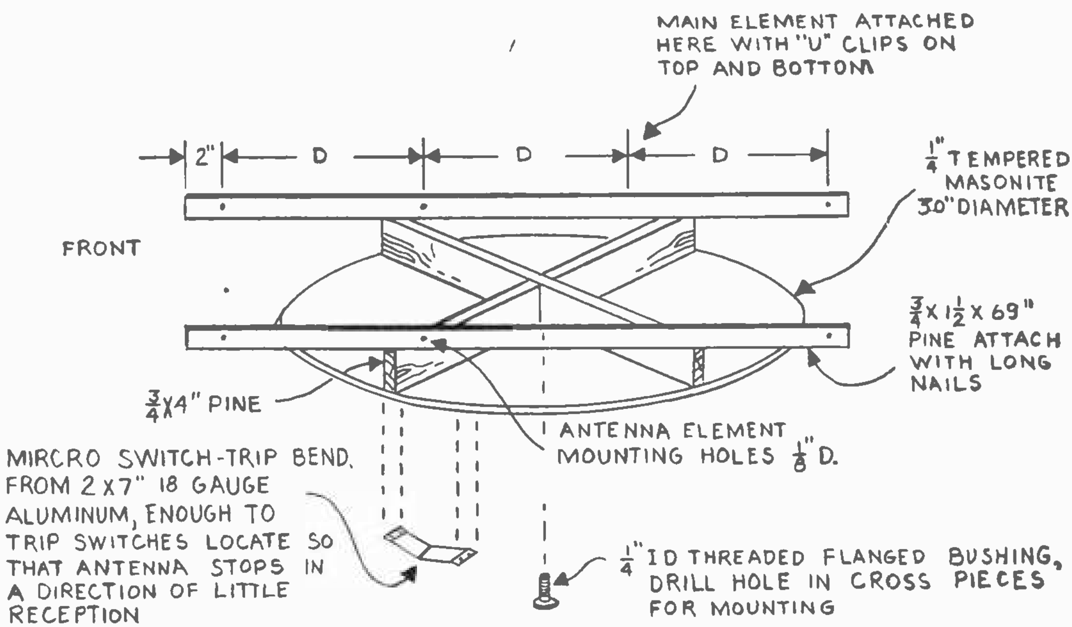
Attic Antenna System

By ALTON B. OTIS JR.

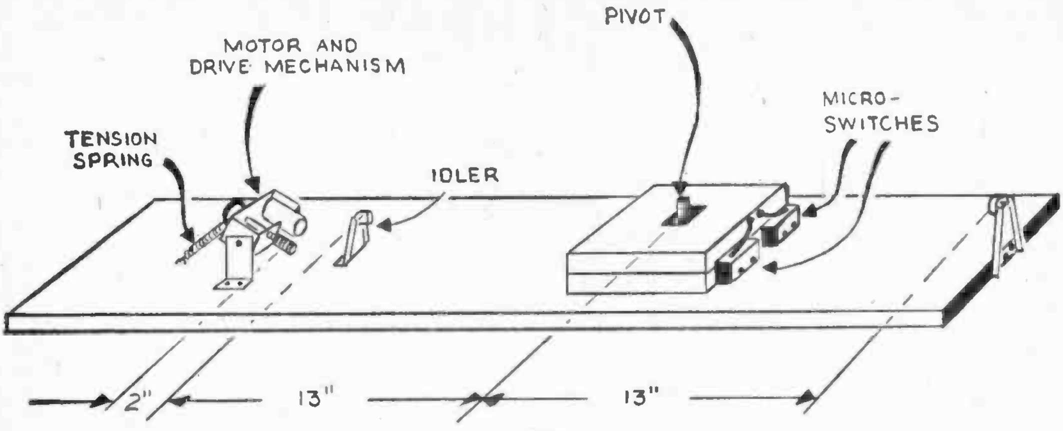
THE philosophy behind the construction is simply that if antenna and rotator are to be protected from the elements, what is the use of weatherproofing and ruggedizing? With most of the parts already in the junk box or available from a local surplus store, the cost of the unit should not exceed $7.

Construction: The only "critical" component is the motor used to drive the rotator. In the author's unit this was a miniature 28—volt dc fan motor from a piece of surplus gear. Any dc reversible motor of approximately the same voltage rating will do. The only changes will be the positioning of mounting holes and power supply requirements. It is advisable to check the motor and power supply combination before installation to insure that the system will supply enough torque to drive the antenna with the drag of the lead wires.

Before starting construction, check your attic to make sure the space requirements are available. There should be clearance with a radius of 45 in. for the antenna dimensions given. Check the rafter spacing to determine the length of the rotator base. The base is cut 8x30 in. (or longer if necessary) out of ¾-in. pine or plywood. The drive system is mounted 4 in. from one end and the pivot 15 in. from the contact point of the drive shaft. (This will be determined by the actual motor and drive set-up used.) The pivot is made by cutting out two ¾x5x5 in. pieces of plywood, screwing one to the base (its center aligned with the pivot center) and screwing another on the top. A ⅜-in. hole is drilled at the pivot center perpendicular to the surface of the pivot board, and a ¼-in. *id* threaded or knurled bushing is force fitted or screwed into the hole. The bushing should be as long as possible to provide stability. The rotor disk is cut 30 in. in diameter from ¼ in. tempered hardboard and is braced with two 4x30 in. white pine cross pieces. Before



1 ROTOR BOARD



2 MOUNTING BASE

these are attached, drill a ⅜-in. center hole and a ¼-in. *id* flanged threaded bushing (1 in. or longer) and install it from the bottom with a large washer under the flange and fastening nut. Drill a ⅜-in. hole into the center of the cross pieces and chip out the bottom to provide clearance for the washer and nut. Force fit the cross pieces over the bushing and nail or screw into place. To obtain extra support, two idler wheels are fashioned (as shown in Fig. 1) of 16-gauge sheet aluminum, aluminum spacers, and rubber grommets. Place washers between the disk and the pivot board until the disk is just touching the idler wheels.

The antenna cross bars are 70 in. long pieces of 2-in. strapping and are installed as shown with ten-penny nails. Make the motor bracket of 18- to 16-gauge aluminum as shown in Fig. 3. The antenna itself (Fig. 4) is made of No. 8 aluminum ground wire available from any local parts supplier. The antenna dimensions given are for 100 mc on the FM band. If you want to cut the antenna to some other frequency the formulas will provide the correct dimensions (Fig. 4).

To prevent more than 360° rotation, two micro-switches are installed on the back of the pivot block as shown in Fig. 5. The switches are tripped by an aluminum cam fastened to the underside of the rotor disk (Fig. 1). Wire the switches and motor to a three conductor cable which goes to the control box. Install the antenna and allow

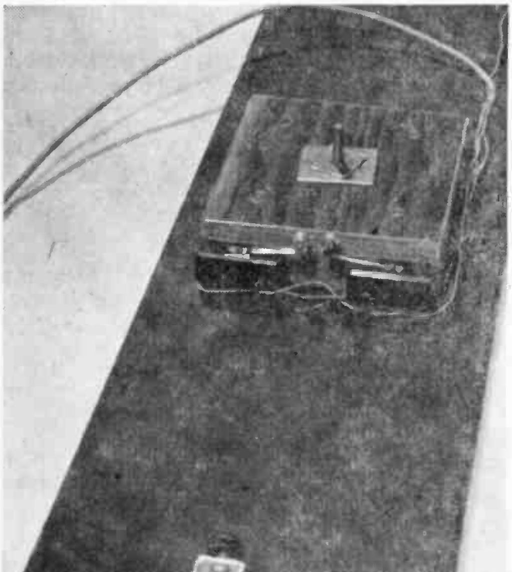


Fig. 3: Masking tape on motor shaft provides firm contact between shaft and idler. Old phonograph motor is used here.

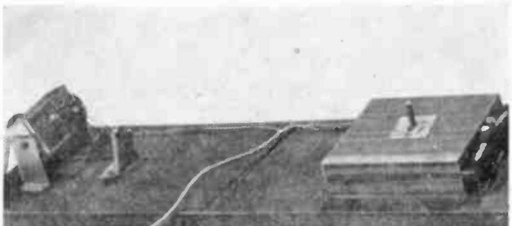
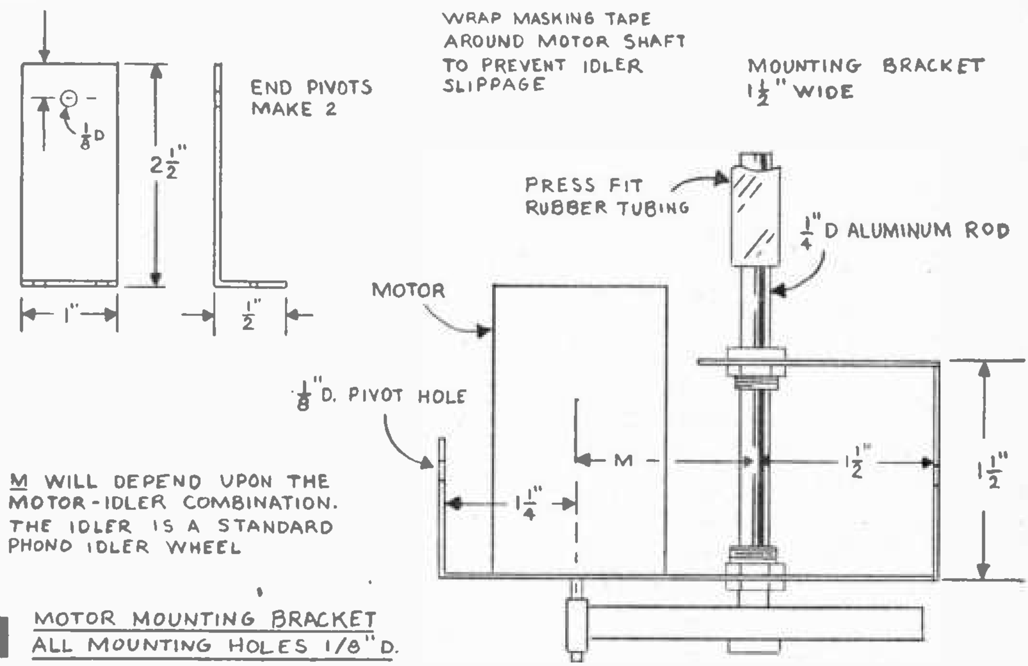
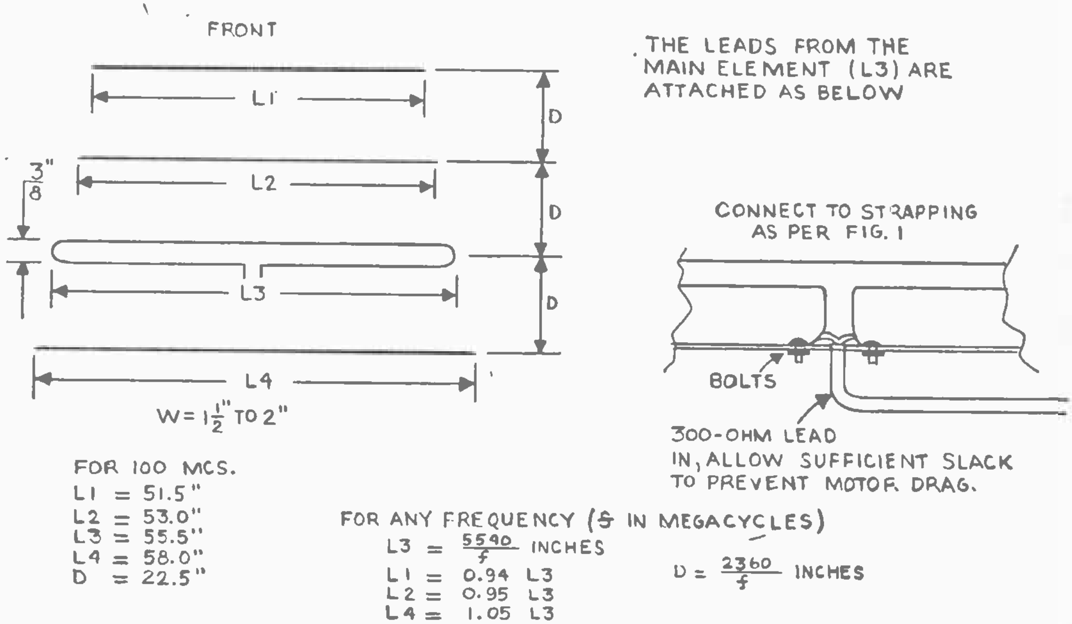


Fig. 4: On rotor base, adjust tension spring to provide firm contact but not stall the motor. Idler wheels are adjusted to provide smooth operation. Use washers on rotor.



5 MOTOR MOUNTING BRACKET
ALL MOUNTING HOLES 1/8" D.



6
ANTENNA

enough lead length to the rotor disk from the external fastening point to prevent excessive drag. Bring both the antenna lead and control cable together either through a wall or around the molding to the place where it is to be used. The external features of the control box are left entirely to the builder's imagination. The author used a 4x5x6-in. aluminum box with the switch and indicator installed on top. The components used in the

MATERIALS LIST—ATTIC ANTENNA SYSTEM

Desig.	Size and Description
C1	250 mfd, 25-v electrolytic capacitor
M1	dc fan motor—15- to 25-v operation (Burstein-Applebee Co., Kansas City, Mo. No. 18A161 or surplus. (The B-A type given is for 12vdc)
NE1	NE2H Bulb
R1	33k 1-w resistor
S1	4 PDT lever switch (Radio Shack No. 27KA5L600 with inside contacts bent inward to allow a center off position)
S2, S3	SPDT micro-switches (Radio Shack No. 25K95L158 or war surplus)
T1	12-15-vac filament transformer (Stancor No. P-8130 or surplus)

circuit are noncritical and are available from any war surplus dealer, or from your local parts supplier.

While a 12- to 15-volt transformer is specified, one supplying as high as 25 volts can be used with a dropping resistor following the rectifier or by using a lower drive ratio in the driving unit to gain the added power.

Performance: The rotor has proved extremely reliable with no breakdowns and smooth quiet operation. The antenna is very directional and more than triples the signal received over a simple folded dipole from most stations. The project is simple and provides a low cost way of improving FM or TV reception. It uses that wasted attic space as well.

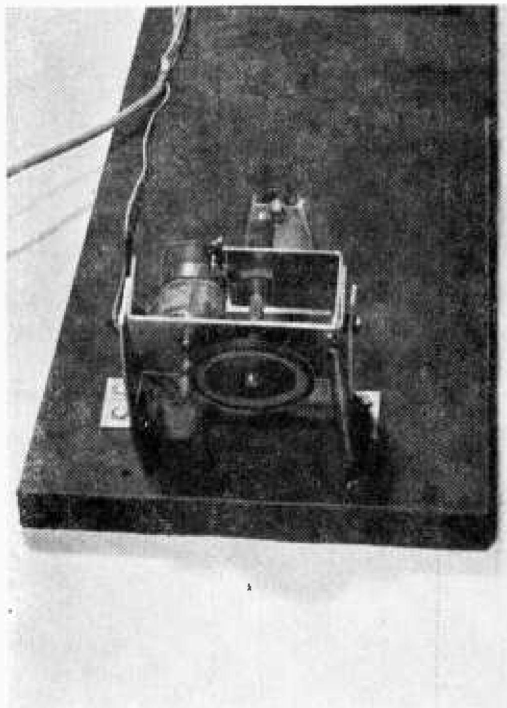
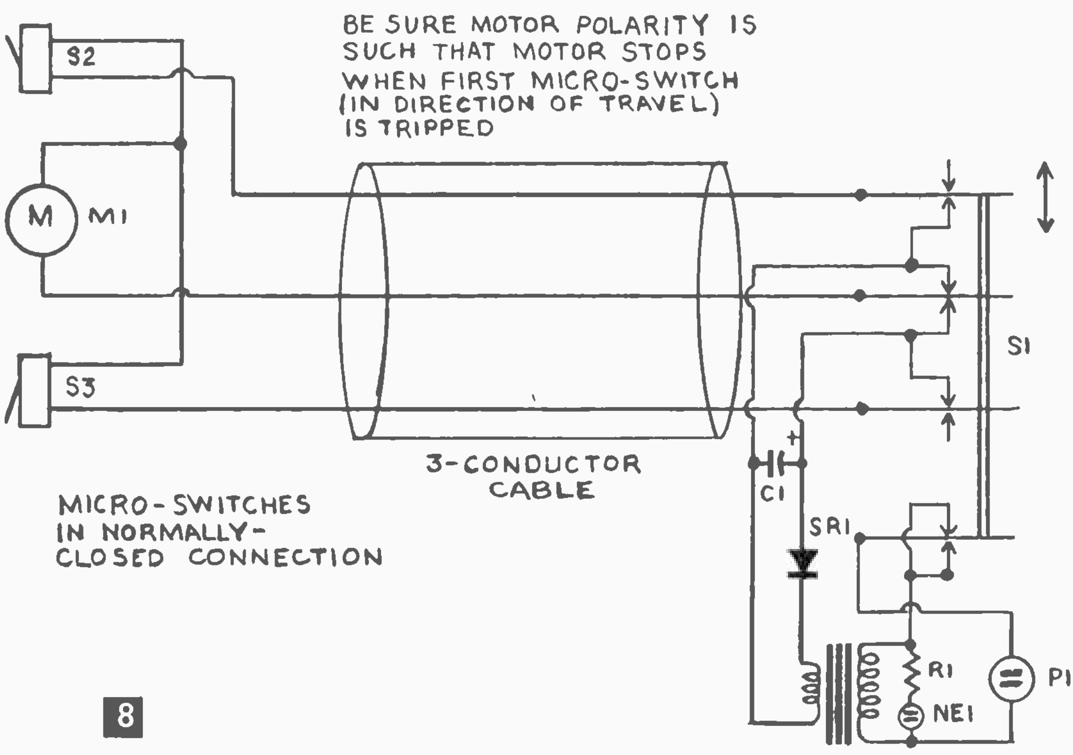


Fig. 10: On rear end of rotor base microswitches are adjusted to stop disk positively and prevent any overshoot.



WIRING SCHEMATIC

Courtesy Paul Kassay Jr.

Fig. 1: Control room at WADV (106.7 mc), Buffalo, N. Y. This new station will QSL (verify all reception reports). They broadcast entirely in stereo for the DX hounds.

FM DX: the Summer Sport

By C. M. STANBURY II

AFTER May 1 most broadcast band DXers reluctantly desert the dials. Long hours of daylight and tremendously increased static make distant reception just plain miserable. There is a solution—try the summer broadcast band. Switch to FM territory (88 thru 108 *mc* and DX American via static-free VHF. To begin, one needs an FM set. The DXer may simply hitch a pair of headphones to a "naked" tuner and he's in business. Of course the better your receiver, the more powerful the tuner, the better your DX results. Just what constitutes FM DX? How does the DXer measure his accomplishments? In order to answer these questions, the listener must know what makes distant VHF reception possible. First, there is tropospheric ducting, usually referred to simply as "trop." Here, the troposphere and ground act as a wave guide carrying signals around the Earth's curvature up to a distance of about 600 miles. Trop occurs with high pressure weather systems, usually in late spring, summer and early fall. It is best during evening but on really good nights will reach a peak between midnight and 2 a.m. Reception can extend to the boundaries of the high pressure area and a look at the newspaper's daily weather map will give you an idea of what to expect in the way of trop DX.

The second major mode of distant reception is sporadic E-layer "skip." On occasions, extremely high ionization occurs in the Ionosphere about 100 miles up (the Ionosphere is that region of gasses which reflects short wave signals back to and around the curvature of the Earth). When this abnormal amount of ionization occurs, the sporadic E-layer appears and reflection can be extended all the way up to 108 *mc* thus provid-

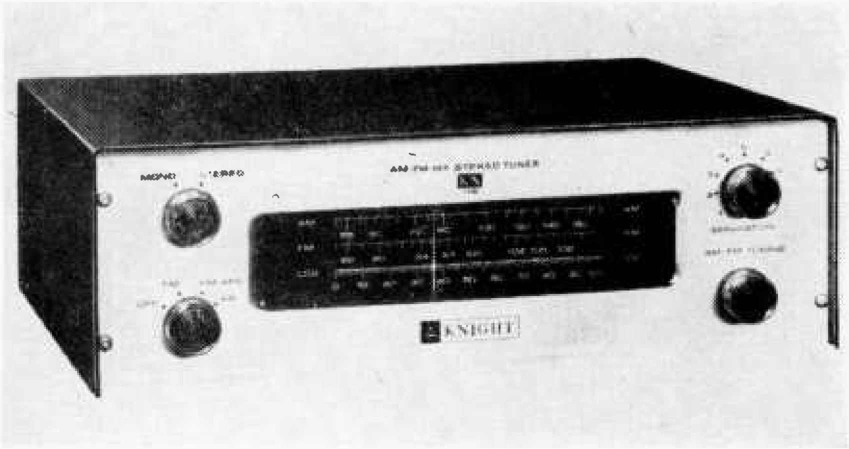


Fig. 2: An FM-AM-STEREO tuner, such as the Knight model KN-170, requires only an antenna and headphones to pull DX.

Courtesy Allied Radio Corp.

ing FM reception to between 600 and 1500 miles. Skip can occur at any time, though spring and summer have the edge.

In addition to trop and skip, there are other forms of VHF-DX. A meteor shower can produce conditions similar to skip except that reception comes in short bursts, making stations extremely difficult to identify. Extensive areas of fog produce trop-like conditions and sometimes when two extremely different weather systems meet, signals will travel along the front. Obviously, both transmitter and receiver must be located along this line.

Trop DX: To the beginner (one who has yet to experience his first skip opening), this would seem to be better DX. However, many experienced FM-DXers consider 500-mile trop superior to 1000-mile skip. While the latter does not often occur, when skip does appear it usually puts in strong signals. Signals can be heard with the simplest antenna-receiver combinations. For distant trop, high-gain directional antennas are required. You also need a receiver that can separate weak signals from adjacent channel interference. With trop, stations nearer and in the same direction are always stronger and block out the more distant targets. When there is skip, nearer stations (excluding locals and semi-locals) seldom come through.

In judging DX, there is another important factor—power. FM frequencies can actually be divided into two distinct bands. All channels below 92 *mc* are assigned to educational stations operated by universities, colleges and even public school systems with powers as low as 10 watts. Many such transmitters broadcast only in school hours and only during the school year and are silent during the best part of the DX season. Above 92 *mc* is allocated to commercial stations, although some are operated by nonprofit organizations, and powers go as high as 300 *kw* depending upon region and antenna height.

An interesting sidelight is that when skip does reach the FM band at all, it invariably affects the lower frequencies first. In other words, it may only appear on the lower power educational portion. But to receive a 10-watter via skip *does* require a pretty fair antenna. Incidentally, an all channel VHF-TV Yagi should provide good FM-DX results, especially if equipped with a rotor.

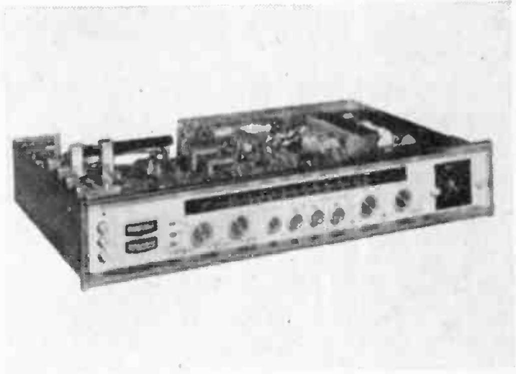
Special targets: Because FM stations broadcast to a smaller audience and many channels are still available in most areas, the DXer finds more special stations and programs. Some broadcasters feature nothing but jazz while other programs consist of the world's folk music, most of which is seldom heard on AM. Other transmissions include drama, literature or off beat political commentary.

On the other hand, FM broadcasting is really still in it's pioneer era, comparable with AM in the 1920s. Many stations are falling by the way side, but as fast as they do, others come along to take their place. Recently, WJZZ in Bridgeport, Conn. (connected with jazz musician Dave Brubeck), was taken over by AM-er WICC whose programs they now relay. At approximately the same time, WBUD-FM, Trenton, N. J., came on the air with independent programming (as one listener puts it "music that swings"). In one sense, WBUD-FM compensates for the loss of WJZZ, and regardless of your program tastes, QSLs from these "early" FM calls will, in a few years be collectors items.

Possibly the very "wildest" form of distant FM reception is stereo DX. While stereo signals travel like their monaural brethren, the stereo sub-carrier which activates the two channel mechanism has *at best* only one tenth the power of the regular carrier.

No question about it, the DXer who can bag stereo signals at a distance of 75 miles or more may consider himself a champion.

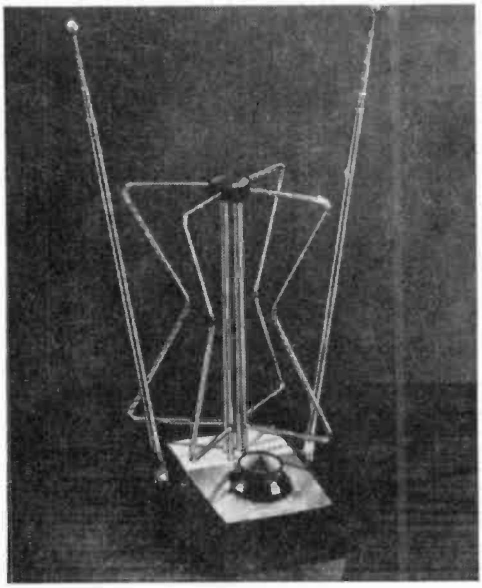
Hi-Fi Receiver



Purely experimental, is this new all-transistorized receiver. It is equipped to receive AM, FM, FM stereo, and is also a complete pre-amplifier and amplifier that provides dual 100-watt music power output!

Among other features, this unit has a timer clock control, push-button triple speaker selector, dual tuning meters and a self-contained motorized fan to cool the output transistors and power supply.

For more information, write to Sherwood Electronic Laboratories, Dept. RTE, 4300 N. California Ave., Chicago 18, Ill.



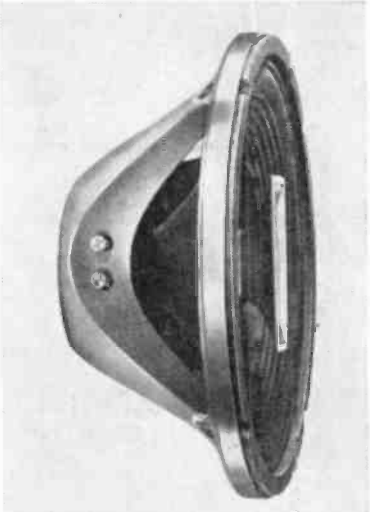
TV-FM Indoor Antenna

More than just an attractive "hunk of metal," this antenna is scientifically designed to tune to the different channels selected.

On the high band, the antenna functions as two colinear half-wave dipoles. On the low band, performance is enhanced by the long elements which are effectively 96 in. tip-to-tip.

Called the Canaveral, it sells for $9.95 from Channel Master Corp., Dept. RTE, Ellenville, N. Y.

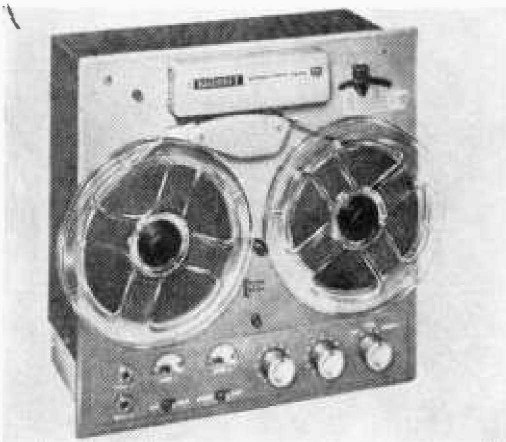
12" 3-Way Speaker



This budget-priced three way speaker system has a heavy, die cast frame and fiberglass coil form to reduce distortion. The bass cone is decoupled by a mechanical crossover from the mid-range cone. Each unit acts independently.

The compression-type tweeter provides a uniform distribution for excellent treble reproduction, vital for proper balance in stereo systems. A high-frequency level control permits simple adjustment of tweeter volume to suit room acoustics.

The unit costs $26.95, from Allied Radio Corp., Dept. RTE, 100 N. Western Ave., Chicago 80, Ill.



New Tape Deck

Called the Knight KN-4400 Tape Deck, this unit is packed with exciting features! Two speeds, four-track stereo or mono record and playback facilities, and dual v-u meters for precise level and balance control are just a few.

A single sliding lever selects the mode of operation, and built-in digital counter helps in editing and cueing. The deck can be mounted horizontally or vertically.

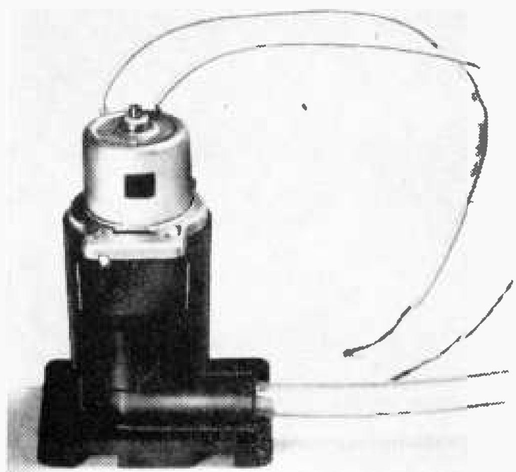
The KN-4400 is priced at $179.95 from Allied Radio Corp., Dept. RTE, 100 N. Western Ave., Chicago 80, Ill.

Miniature Hobby Pump

A tiny electric motor and water pump combination for hobby work and laboratory experiments has just been announced. The device can be used by hobbyists in operating miniature waterfalls, fountains, HO gauge railroad backdrops and in the photo lab as an agitator for developer and hypo chemicals.

The unit is self-priming and pumps a continuous flow of water at the rate of 1 pint per minute at a 12-in. head. This can be increased to a 24-in. head with two D-cells in series. It pumps in either direction.

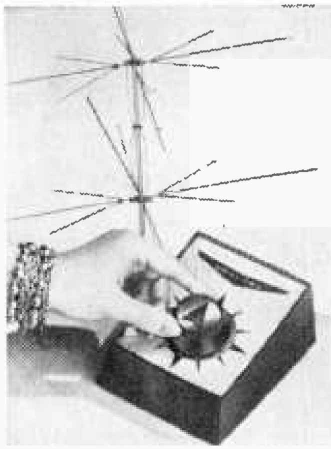
Costs $2.25 from Edmund Scientific Co., Dept. RTE, Barrington, N. J.



New Mobile Transceiver

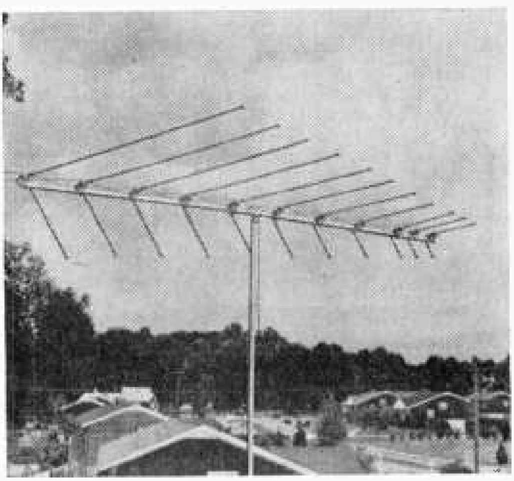
Citizens band operators will enjoy 23-channel operation at the flick of a channel selector switch. The unit is ideally suited for cars, boats, and other vehicles. The transceiver features modern panel styling and a vast array of accessories which includes a transistorized S-meter with illuminated dial, a rear deck speaker kit with an ac power supply which, when plugged in with the antenna, allows the unit to double as a base station. For more info, contact Browning Laboratories, Dept. RTE, 100 Union Ave., Laconia, N. H.

Fixed Directional Antenna



Called the "Golden Omni-Ray," this antenna provides the directional quality of a rotating beam type, but the antenna doesn't move! The reception pattern is a perfect figure eight, with deep nulls at the sides. Front-to-side interference rejection ratio is 10:1. The control switch permits rotation of the pattern in 22½° increments.

Prices start at $26.95. Channel Master Corp., Dept. RTE, Ellenville, N. Y.



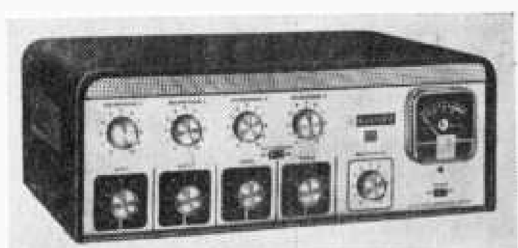
New TV Antenna

Called the Log-Periodic V antenna (LPV) this antenna eliminates the need to compromise the antenna size and the frequency of the received signal. Indeed, the manufacturer claims that the new antenna is like having a Yagi antenna tuned to each individual channel and the FM bands, too!

The new antenna looks like the skeleton of a flat fish with all the bones tilted forward. The elements each act in concert with the others, and the directional quality is such that the entire antenna is much like a funnel whose open end is pointed at the TV transmitting antenna.

For more information, contact JFD Electronics Co., Dept. RTE, 6101 16th Ave., Brooklyn, 4, N. Y.

P.A. Problem Pacifier



A professional quality 50-watt public address system, known as the Knight KN-3050 is being offered. The amplifier will meet requirements for high fidelity audio in halls, schools, churches and auditoriums.

Among the new features are balance controls for output tubes and hum, boost and cut-type tone controls, and an anti-feedback control. In addition to four mixed microphone inputs, the unit has a socket for a low impedance mike transformer and an output jack for simultaneous recording. A master gain control rides herd on the separate channel controls and the unit has separate bass and treble controls as well.

The KN-3050 sells for $129.50 at Allied Radio Corp., Dept. RTE, 100 N. Western Ave., Chicago 80, Ill.

LOOKING OVER NEW PRODUCTS

C-B Transceiver

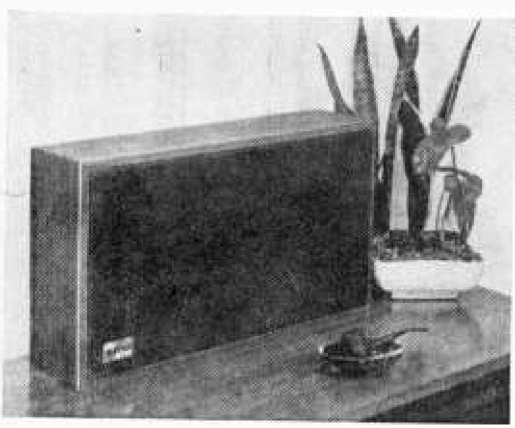
Select any six of the 23 operating channels from the front panel switch, and you are ready to operate with a full five watts. The receiver boasts six crystal-controlled positions, and is also tuneable over the 23 channels. The Nuvistor amplifier provides a sensitivity of 1 microvolt and the 3-stage IF provides razor-sharp selectivity.

The S-meter provides illuminated RF power or S-meter readings, and a spotting switch gives you positive channel location. Called the HE-90WX, it's available for $94.50 from Lafayette Radio, Dept. RTE, 111 Jericho Turnpike, Syosset, L. I., N. Y.

Six and Two Meter Converters

Operating into any shortwave receiver that tunes 7-11 *mc*/sec., these converters provide the user with six or two meter amateur reception. With the converter switch in the off position, the converter is completely out of the circuit, and the receiver operates normally.

Operating range for the HE-56 is 50-54 *mc*/sec. and the HE-71 is 144-148 *mc*/sec. The HE-56 is $29.95, the HE-71 is $31.95. Both available from Lafayette Radio, Dept. RTE, 111 Jericho Turnpike, Syosset, L. I., N. Y.



3-Way Speaker System

You can mount this speaker system on a wall, put it on a shelf, and it requires absolutely no floor space. Three speakers are employed, with carefully designed crossover and balancing networks.

The ducted port enclosure is finished in a hand-rubbed, oiled solid walnut. A brilliance control for the tweeter is included. The rated impedance is 8 ohms and the power handling capacity is 25 watts with a 10-watt minimum requirement.

Called the HFS-6, it's available in kit form for $52.50 or wired and tested at $62.50 from EICO, Dept. RTE, 33-00 Northern Blvd., Long Island City 1, N. Y.

Free Literature!

1. John Meshna Jr. offers a catalog of surplus goodies from assemblies to Zener diodes. You can buy complex units that set the government back thousands, at a fraction of the cost!

2. National Radio Institute has pamphlets that describe three new courses in marine communications, aircraft communications and guidance, and mobile communications. The pamphlets themselves are well-illustrated and educational.

3. Progressive Edu-Kits will send along a group of three pamphlets that deal with television trouble-shooting, radio trouble-shooting and high fidelity. These are very complete and easy to understand. Should answer many of your questions.

4. Lafayette Radio Electronics has a complete catalog that's far too detailed to describe here. The best bet is to circle No. 4 and see it for yourself!

5. Atlas Sound will send you a bulletin that describes a unique assortment of microphone stands and accessories, including explosion-proof loudspeakers!

6. Roanwell Corp. has a one-page circular that describes its new line of stereo headsets. This is the outfit that makes the headsets used for terminal communications by astronauts. These are high fidelity phones, not redesigned miniature loudspeakers.

7. EICO has a "plus" deal here! You'll get a complete catalog of their new electronic kits, PLUS a four-page lesson in electronic construction, PLUS a four-page course leading to a novice class amateur license, PLUS a chart of schematic symbols, and finally, for one last plus, a booklet explaining the reason for stereo!

8. Adler Electronics offers a folder which discusses educational television. Goes into detail of how it's used, microwave systems, translators, and closed circuits. There's a good science fair project here!

9. Adjustable Caster Co. has lots of information on what is called "furniture sag." Ever wonder why hi-fi cabinet doors won't stay closed? Before you try to level your turntable, you'd better level the shelf it sits on! Circle No. 9!

10. Philmore Manufacturing Co. will send you catalog sheets describing their line of UHF-TV converters, CB walkie-talkies, speaker-mikes code oscillators, and educational kits.

11. Eagle Electric will send a complete assortment of catalog sheets describing radio and TV tube protectors, fuses, light winkers, switches and outlets, etc. Circle No. 11.

12. Radio Shack Co. has its new 1963 catalog ready, and it's bulging with goodies for the electronics hobbyist. Included is its exclusive line of "*Realistic*" equipment. If you can't find what you want here, you can't find it!

13. Nationwide Tube Co. has a price list of radio and TV tubes that can save you lots of money, or are you still paying drug-store prices?

14. Olson Electronics has a catalog that comes out regularly. Lots of new and surplus items to select from. Circle No. 14, and we'll get your name on the mailing list.

15. Conar Electronics would like to send you its new catalog of kits. An assortment of everything from television kits to pocket stoves. Lots of variety and modestly priced too.

16. SONY Corp. will send you a set of beautifully printed brochures that describe the new line of imported electronic goodies. Featured is the smallest television set we've ever seen!

17. Stereosonics has a brochure describing its wireless remote control unit for your hi-fi, stereo system. They also have a wired remote, and a unique monitor that indicates phase or balance. Needs no power to operate, either!

18. Arkay Kits, Inc., would like to send you its brochure of electronic kits and full info on a new TV kit. The information includes a schematic diagram. The kits in this line are truly educational, for they are used in many electronic schools.

19. Chicago Miniature Lamp Works will send you a complete catalog of the teentsy-weenies. Compared to some of these, a No. 47 pilot lamp looks like a 100-watt house light!

20. Gulton Industries has a vast assortment of literature on everything from rechargeable batteries to ultrasonic tools and data processing and display equipment. Circle No. 20 for more info.

21. Mathew Stuart, Inc., will be happy to send you literature describing five different portable hi-fi tape recorders. They also have a hot little intercom. The sound-to-size ratio of these units is amazing!

22. Switchcraft will send out a 12-page catalog covering the latest in audio accessories. These are the little things that make hi-fi easier. Contains molded cables and junctions to mike mixers.

23. Harmon-Kardon has an assortment of literature that describes their complete line. It comes complete with technical reports from the lab, so obviously they have nothing to hide! The equipment is beautiful and sounds as good as it looks.

24. Sarkes-Tarzian has a booklet entitled "The Care and Feeding of Tape Recorders." Sixteen pages, jam-packed with info for the home recordist. Also includes a table of recording times for various tapes.

25. Dow-Key Co. has a goodly assortment of literature covering their products. These are coaxial relays and switches, connectors and preamps. The hams and CB'ers will want this one.

26. W. F. Palmer Labs has a booklet which explains what the new transistor ignition systems are all about. After reading it, if you decide that this is for you, they also have kits to build your own!

27. ALCO Electronic Sales has a 16-page catalog of new and surplus bargains in the electronics field. Circle No. 27 and we'll get your name added to the regular mailing list.

28. Century Electronics has a booklet on TV and radio servicing. Along with the booklet, they'll send along a receiving tube price list, an order blank, and an unusual through-the-mail diagnosis request form, which entitles you to an analysis of your sick set for a buck!

29. The Heath Co. has a new 100-page catalog of their 1963 kit line waiting for you! If you'd like to see the latest in highly-styled, highly versatile electronic gear for a wide variety of purposes, circle No. 29, and we'll see that a copy is sent to you with no obligation.

30. Saxton Products has some unusual delayed action switches for the home or car, something brand new in miniaturized amplifiers, a new light-dimming switch, and a circular of their other products, including assorted wire and cables.

31. Shure Brothers, Inc., provides a complete catalog of their hi-fi, stereo tone arms, cartridges and pre-amps.

32. Altec Lansing Corp. will send you a beautifully printed brochure describing their high fidelity products. They'll also include a list of studio-type microphones and two-way speaker components which permit you to build your own high quality, high fidelity speaker systems.

33. American Concertone Co. makes tape recorders. They make little tape recorders for the business man, and they make great big tape recorders for professional studio use. There's a lot that you can learn about tape recorders from the information they'll send you if you circle No. 33.

34. World Radio Laboratories has been catering to the ham for many years. They have a couple of flyers for you to look over, that cover their new transmitter and an assortment of other necessary products that deserve space in any ham shack!

35. Kodak enters the recording tape business with a classy product that they want to tell you about. If you are a serious home recordist, you'll want this technical bulletin and descriptive literature.

36. The Astatic Corp. has a handful of catalog sheets describing some of their many quality microphones. These are suitable for tape recording, the ham-shack, or the professional studio.

37. National Kits has a four-pager for you, describing the new National line. If you're interested in kit-building but don't like the tariff, here's something you should see.

38. Acoustic Research is a name well-known to the audiophiles. Here's a booklet describing their acoustic suspension loudspeakers and a fact sheet on the new AR turntable.

39. Allied Radio Corp. continues to put out a catalog that is so jammed with information that it is used as a reference book by many people employed in the electronics industry. The surprising thing is that it's free. If you really want one, circle No. 39 and we'll ask them to send one out to you.

40. Hallicrafters Corp. has for some time been building the nicest amateur and commercial radio equipment! Now they'll send you lots of info on this gear, as well as on their new citizens band equipment, and the active Hallicrafters-sponsored C-B REACT teams.

41. Antenna Specialists Co. will send you some literature on all sorts of antennas for citizens band and ham use as well as commercial installations. They also have a generator that provides for power in the field.

42. Akro-Mills will send out a small booklet describing the handy cabinet line they make. These cabinets, with the see-through drawers, will help you convert your home or shop from clutter to convenience.

43. Electro-Voice has a complete catalog of their loudspeakers, enclosures, systems and microphones. The cabinets are particularly attractive, available in fine wood finishes, or unfinished for the do-it-yourselfer.

44. The SONY Superscope Co. will send you a complete catalog and an assortment of literature covering the entire line of superscope tape recorders. Also included is a list of ways that you can use a tape machine. Some of these were new to us!

45. The Sherwood Co. has a complete assortment of high-fidelity components and cabinets that are described in a colorful brochure. The cabinets are novel, in that you practically design them yourself by selecting modules from the wide assortment offered.

46. Argos Products Co. has a wide variety of speaker systems and enclosures. They've also got a very unusual method for mounting these enclosures on a wall. To find out more, circle No. 46.

47. Edmund Scientific will send their new 1963 catalog which features unusual scientific, optical and mathematical values. War surplus equipment, including many hard-to-get items are also included. Circle No. 47.

48. PACO Kits will fill your mailbox with loads of information on new kits for everybody. Covers the very latest in hi-fi and stereo, as well as a complete line of electronic testing equipment.

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	622—Income Opportunities	594	626—Science Experimenter		630—Fisherman's Manual
	623—Gun Handbook	597	627—Garden Handbook		631—How To Buy Or Sell Your House
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569	632—Radio-TV Experimenter	584	636—Home Workshop Handbook	607	640—Boat Builder's Handbook
612	633—Car Repair Handbook	575	637—1001 How-To Ideas		641A Painting and Refinishing
618	634—Woodworker's Encyclopedia	598	638—Home Repair Handbook		642A Home Study Courses
599	635—Camping Handbook		639—Careers and Jobs		643—Auto Racing Handbook
	JULY		**AUGUST**		**SEPTEMBER**
595	644—Radio-TV Experimenter		649—Home Workshop H'book	580	654—Boat Building Handbook and Boatcraft
578	645—Car Repair Handbook	564	650—1001 How-To Ideas	585	655—Electrical Handbook
588	646—Woodworker's Encyclopedia	608	651—Science Experimenter	610	656—Junior Mechanics Handbook
	647—Home Appliance Repairs	605	652—Home Buyer's Guide to Plumbing & Heating		657—Elementary Electronics
	648—Kitchen & Bath Improvements	606	653—Surplus and Salvage Projects		658—Christmas Suggestions
	OCTOBER		**NOVEMBER**		**DECEMBER**
582	659—Radio-TV Experimenter		664—Home Workshop Handbook	574	669—Boat Building Handbook and Boatcraft
560	660—Car Repair Handbook		665—1001 How-To Ideas	619	670—Home-Built Power Tools
	661—Woodworker's Encyclopedia	616	666—Furniture Handbook	602	671—Engine Handbook
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	663—Photography Guide	615	668—Home Modernization Handbook		673—Small Home Plans

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H632

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Address.......................................

City.....................Zone.....State........

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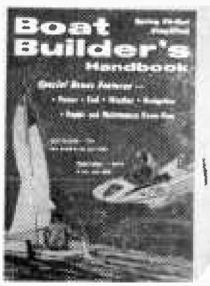
#628 Boat Builder's Handbook



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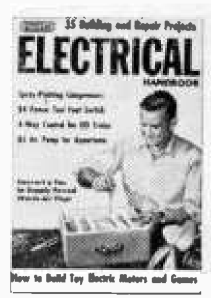
- How Many Horses?
- Fitting Out for Spring
- Weather or No
- Basic Navigation
- Build a Hydro-Kart
- Boat-Building Woods
- Aquaplane and Skies
- What's New In Boating
- Burning Issue Is Fuel
- Powerized Paddleboard

#629 Electrical Handbook

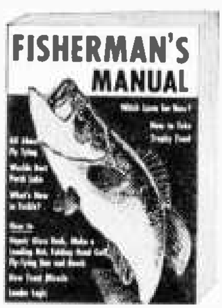
An indispensable guide to over 35 projects that pertain to electricity and how it can safely be used. This is more than just a how-to-wire your house volume, because just about everything that's powered by electricity, from science fair projects to home appliances, is covered in this inclusive book. A few of the titles are:



- Low-Cost Photo Lights
- Portable Air Compressor
- Servicing Power Tools
- Electric Alternator System
- Low-Cost Decade Box
- Microscope Micro-Illuminator
- Overhauling Motors
- Anti-Snooper Alarm
- Electric Slide Rule
- Combination Warm & Cold Air Fan

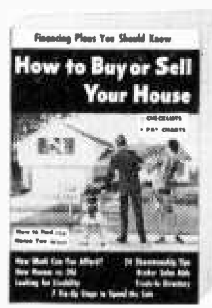
#630 Fisherman's Manual

Every rod and reel enthusiast will enjoy this how-to volume because the contents range from selecting and making fine tackle, that normally is very costly, to tested tricks used by the old pros to seek out, hook and land the elusive lunkers that seem to exist only as legends. Buy it and read about:



- Repairing Glass Rods
- Curing Outboard Overheating
- How to Take 'Em Off the Top
- The Ideal Spinning Rod
- Which Lures Catch Bass
- Leader Logic
- Study Weather for More Fish
- How Science Aids the Angler
- How Water Temperature Affects Fishing

#631 How to Buy or Sell Your House



Fact-filled guide for householders on the move and those who want to keep informed as to what's happening in the house market today. This volume gives practical tips on buying, selling and financing. It also has features explaining the advantages of building and/or buying a manufactured home. In this guide you'll read about:

- Which House for You?
- New Houses vs. Old
- Financing Responsibilities
- Seven Fix-Up Sales Steps
- Selling With or Without a Broker
- Why You Need an Attorney
- Buyers Checklist
- Trade-Ins and Exchanges
- Are Auction Houses Worth It?
- Buyer and Seller at Closing

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NEW YORK 22, NEW YORK

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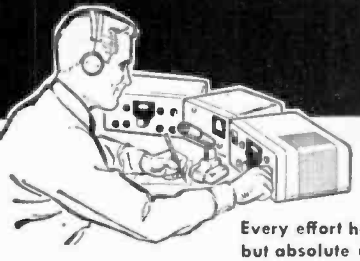

WHITE'S RADIO LOG

An up-to-date broadcasting directory
AM, FM, TV, and short wave stations

Vol. 40 No. 2

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U. S. and Canadian AM Stations by Frequency

U.S. stations listed alphabetically by states within groups, Canadian stations precede U.S.

Abbreviations: Kc., frequency in kilocycles; W.P., watt power; d—operates daytime only. Wave length is given in meters

Kc. Wave Length W.P.

540—555.5

	W.P.
CBT Grand Falls, N.F.	10000
CBK Regina, Sask.	50000
KVIP Redding, Calif.	5000d
KFMB San Diego, Calif.	5000
WGTO Cypress Gardens, Florida	50000d
WDAK Columbus, Ga.	5000
KBRV Soda Springs, Idaho	500d
KWMT Ft. Dodge, Iowa	5000d
KNOE Monroe, La.	5000
WDMV Pocomoke City, Md.	500d
WBIC Islip, N.Y.	250d
WETC Wendell-Zebulon, N.C.	250d
WARD Canonsburg, Pa.	250d
WYNN Florence, S.C.	250d
WDXN Clarksville, Tenn.	1000d
WRIC Richlands, Va.	1000d

550—545.1

	W.P.
CFNB Fredericton, N.B.	50000
CFBR Sudbury, Ont.	1000d
CHLN Three Rivers, Que.	10000
CKPG Prince George, B.C.	250
KENI Anchorage, Alaska	5000
KOY Phoenix, Ariz.	5000
KAFY Bakersfield, Calif.	1000
KRAI Craig, Colo.	1000
WAYR Orange Park, Fla.	1000d
WGGA Gainesville, Ga.	5000
KMVI Wailuku, Hawaii	1000
KFRM Concordia, Kansas	5000d
WCBI Columbus, Miss.	1000
KSD St. Louis, Mo.	5000
KOPR Butte, Mont.	1000
WGR Buffalo, N.Y.	5000
WDBM Statesville, N.C.	500d
KFYR Bismarck, N.Dak.	5000
WKRC Cincinnati, Ohio	5000
KOAC Corvallis, Oreg.	5000
WHLM Bloomsburg, Pa.	1000
WPAB Ponce, P.R.	5000
WXTR Pawtucket, R.I.	1000
KCRS Midland, Tex.	5000
KTSA San Antonio, Tex.	5000
WDEV Waterbury, Vt.	5000
WSVA Harrisonburg, Va.	5000
KARI Blaine, Wash.	500d
WSAU Wausau, Wis.	5000

560—535.4

	W.P.
CJDC Dawson Creek, B.C.	1000
CHCM Marystown, Nfld., Can.	1kw
CJKL Kirkland Lake, Ont.	5000
CFOS Owen Sound, Ont.	5000
CKCN Seven Iles, Que.	5000
WOOF Dothan, Ala.	5000d
KYUM Yuma, Ariz.	1000
KSFO San Fran., Calif.	5000
KLZ Denver, Colo.	5000
WQAM Miami, Fla.	5000
WIND Chicago, Ill.	5000
WMIK Middlesboro, Ky.	500d
WGAN Portland, Maine	5000
WFRB Frostburg, Md.	1000d
WHYN Springfield, Mass.	1000
WQTE Monroe, Mich.	500d
WEBC Duluth, Minn.	5000
KWTO Springfield, Mo.	5000
KMON Great Falls, Mont.	5000
WGAI Elizabeth City, N.C.	1000
WFIL Philadelphia, Pa.	5000
WIS Columbia, S.C.	5000
WHBQ Memphis, Tenn.	5000
KFDM Beaumont, Tex.	5000
KPQ Wenatchee, Wash.	5000
WJLS Beckley, W.Va.	5000

570—526.0

	W.P.
CKEK Cranbrook, B.C.	1000
CKCQ Quesnel, B.C.	1000
CFCB Corner Brook, N.F.	1000
CJEM Edmundston, N.B.	5000
CFWH Whitehorse, Y.T.	1000
WAAX Gadsden, Ala.	5000
KCNO Alturas, Calif.	5000
KLAC Los Angeles, Calif.	5000
WGMS Washington, D.C.	5000
WACL Waycross, Ga.	5000
WKYB Paducah, Ky.	1000
WVMI Biloxi, Miss.	1000d
KGRT Las Cruces, N.Mex.	5000d
WMCA New York, N.Y.	5000
WSYR Syracuse, N.Y.	5000
WWNC Asheville, N.C.	5000
WLLE Raleigh, N.C.	500d
WKBN Youngstown, Ohio	5000
WNAX Yankton, S.Dak.	5000
WFAA Dallas, Tex.	5000
WBAP Ft. Worth, Tex.	5000
KLUB Salt Lake City, Utah	5000
KVI Seattle, Wash.	5000
WMAM Marinette, Wis.	5000

580—516.9

	W.P.
CJFX Antigonish, N.S.	5000
CFRA Ottawa, Ont.	50000
CKEY Toronto, Ont.	5000
CKPR Ft. William, Ont.	5000
CKUA Edmonton, Alta.	10000d
CKY Winnipeg, Man.	50000
CHLC Hauterive, Que.	1000
WABT Tuskegee, Ala.	500d
KABI Ketchikan, Alaska	1000
KTAN Tucson, Ariz.	5000
KMJ Fresno, Calif.	5000
KUBC Montrose, Colo.	5000
WDBO Orlando, Fla.	5000
WGAC Augusta, Ga.	5000
KFXD Nampa, Idaho	5000
WILL Urbana, Ill.	5000d
KSAC Manhattan, Kans.	5000
WIBW Topeka, Kans.	5000
KALB Alexandria, La.	5000
WTAG Worcester, Mass.	5000
WELO Tupelo, Miss.	1000
KANA Anaconda, Mont.	1000
WAGR Lumberton, N.C.	500
KWIN Ashland, Oreg.	1000
WHP Harrisburg, Pa.	5000
WKAQ San Juan, P.R.	5000
KDBH Hot Springs, S.Dak.	500d
WRKH Rockwood, Tenn.	1000d
KDAV Lubbock, Tex.	500d
WLES Lawrenceville, Va.	500d
WCHS Charleston, W.Va.	5000
WKTY LaCrosse, Wis.	5000

590—508.2

Station	W.P.
CFAR FlinFlon, Man.	1000
CKRS Jonquiere, Que.	1000
CFTK Terrace, B.C.	1000
VOCM St. Johns, N.F.	10000
KHAR Anchorage, Alaska	5000
WRAG Carrollton, Ala.	1000d
KBHS Hot Springs, Ark.	5000d
KFXM San Bernardino, Cal.	1000
KTHO Tahoe Valley, Calif.	1000d
KCSJ Pueblo, Colo.	1000
WDLP Panama City, Fla.	1000
WPLO Atlanta, Ga.	5000
KGMB Honolulu, Hawaii	5000
KID Idaho Falls, Idaho	5000
WBBY Wood River, Ill.	500d
WVLK Lexington, Ky.	5000
WEEI Boston, Mass.	5000
WKZO Kalamazoo, Mich.	5000
KGLE Glendive, Mont.	500d
WOW Omaha, Nebr.	5000
WROW Albany, N.Y.	5000
WGTM Wilson, N.C.	5000
KUGN Eugene, Oreg.	5000
WARM Scranton, Pa.	5000
WMBS Uniontown, Pa.	1000
KTBC Austin, Tex.	5000
KSUB Cedar City, Utah	1000
WLVA Lynchburg, Va.	1000
KHQ Spokane, Wash.	5000

600—499.7

Station	W.P.
CFCF Montreal, Que.	5000
CFCH North Bay, Ont.	10000
CFQC Saskatoon, Sask.	5000
CJOR Vancouver, B.C.	10000
CKCL Truro, N.S.	1000
WIRB Enterprise, Ala.	1000
KCLS Flagstaff, Ariz.	5000
KVCV Redding, Calif.	1000
KOGO San Diego, Calif.	5000
KZIX Ft. Collins, Colo.	1000d
WICC Bridgeport, Conn.	5000
WPDQ Jacksonville, Fla.	5000
WMT Cedar Rapids, Iowa	5000
WWOM New Orleans, La.	1000d
WFST Caribou, Maine	5000d
WCAO Baltimore, Md.	5000
WLST Escanaba, Mich.	1000d
WTAC Flint, Mich.	1000
KGEZ Kalispell, Mont.	2000
WCVP Murphy, N.C.	1000d
WSJS Winston-Salem, N.C.	5000
KSJB Jamestown, N.D.	5000
WFRM Coudersport, Pa.	1000d
WAEL Mayaguez, P.R.	1000
WREC Memphis, Tenn.	5000
KROD El Paso, Tex.	5000
KERB Kermit, Tex.	1000d
KTBB Tyler, Tex.	1000

610—491.5

Station	W.P.
CKML Mont Laurier, Que.	1000
CHNC New Carlisle, Que.	5000
CJAT Trail, B.C.	1000
CKKL Thompson, Man.	1000
CKTB St. Catharines, Ont.	10000
CKYL Peace River, Alta.	10000
WSGN Birmingham, Ala.	5000
KFAR Fairbanks, Alaska	5000
KAVL Lancaster, Calif.	1000
KFRC San Francisco, Calif.	5000
WCKR Miami, Fla.	5000
WDEB Pensacola, Fla.	500d
WCEH Hawkinsville, Ga.	500d
WRUS Russellville, Ky.	500d
KDAL Duluth, Minn.	5000
WDAF Kansas City, Mo.	5000
KOJM Havre, Mont.	1000
WGIR Manchester, N.H.	5000
KGGM Albuquerque, N.Mex.	5000
WAYS Charlotte, N.C.	5000
WTVN Columbus, Ohio	5000
WIP Philadelphia, Pa.	5000
KILT Houston, Tex.	5000
KVNU Logan, Utah	5000
WSLS Roanoke, Va.	5000
WHPL Winchester, Va.	500d
KEPR Kennewick, Wash.	5000

620—483.6

Station	W.P.
CFCL Timmins, Ont.	10000
CKCK Regina, Sask.	5000
KTAR Phoenix, Ariz.	5000
KNGS Hanford, Calif.	1000
KWSD Mt. Shasta, Calif.	1000d
KSTR Grand Junction, Colo.	5000d
WSUN St. Petersburg, Fla.	5000
WTRP LaGrange, Ga.	1000d
KWAL Wallace, Idaho	1000
KMNS Sioux City, Iowa	1000
WTMT Louisville, Ky.	500d
WLBZ Bangor, Maine	5000
WJDX Jackson, Miss.	5000
WVNJ Newark, N.J.	5000
WHEN Syracuse, N.Y.	5000
WDNC Durham, N.C.	5000
KGW Portland, Oreg.	5000
WHJB Greensburg, Pa.	1000
WCAY Cayce, S.C.	500d
WATE Knoxville, Tenn.	5000
KWFT Wichita Falls, Tex.	5000
WCAX Burlington, Vt.	5000
WWNR Beckley, W.Va.	1000
WTMJ Milwaukee, Wis.	5000

630—475.9

Station	W.P.
CFCO Chatham, Ont.	1000
CKAR Huntsville, Ont.	1000
CHLT Sherbrooke, Que.	5000
CFCY Charlottetown, P.E.I.	10000
CJET Smith Falls, Ont.	1000
CKRC Winnipeg, Man.	5000
CKOV Kelowna, B.C.	1000
WAVU Albertville, Ala.	1000d
CHED Edmonton, Alta.	10000
WJDB Thomasville, Ala.	1000d
KJNO Juneau, Alaska	1000

Kc. Wave Length	W.P.
KVMA Magnolia, Ark.	1000d
KIDO Monterey, Calif.	1000
KHOW Denver, Colo.	5000
WMAL Washington, D.C.	5000
WSAV Savannah, Ga.	5000
WNEG Toccoa, Ga.	500d
KIDO Boise, Idaho	5000
WLAP Lexington, Ky.	5000
KTIB Thibodaux, La.	500d
WJMS Ironwood, Mich.	1000
KDWB So. St. Paul, Minn.	5000
KXOK St. Louis, Mo.	5000
KGVW Belgrade, Mont.	1000d
KOH Reno, Nev.	5000
KLEA Lovington, N.Mex.	500d
WIRC Hickory, N.C.	1000d
WMFD Wilmington, N.C.	1000
KWRO Coquille, Oreg.	5000d
WEJL Scranton, Pa.	500d
WKYN San Juan, P.R.	5000
WPRO Providence, R.I.	5000
KGFX Pierre, S.Dak.	250
KMAC San Antonio, Tex.	5000
KSXX Salt Lake City, Utah	1000d
KGDN Edmunds, Wash.	5000d
KZUN Opportunity, Wash.	500d

640—468.5

CBN St. John's, N.F.	10000
KFI Los Angeles, Calif.	50000
WOI Ames, Iowa	5000
WHLO Akron, Ohio	1000
WNAD Norman, Okla.	1000d

650—461.3

KORL Honolulu, Hawaii	10000
WSM Nashville, Tenn.	50000
KIKK Pasadena, Texas	250d

660—454.3

KMEO Omaha, Nebr.	500d
WNBC New York, N.Y.	50000
WESC Greenville, S.C.	10000d
KSKY Dallas, Tex.	1000

670—447.5

WMAQ Chicago, Ill.	50000

680—440.9

CHFA Edmonton, Alta.	5000d
CHLO St. Thomas, Ont.	1000
CJOB Winnipeg, Man.	10000
CKGB Timmins, Ont.	10000
KNBR San Fran., Calif.	50000
WPIN St. Petersburg, Fla.	1000d
WCTT Corbin, Ky.	1000
WCBM Baltimore, Md.	10000
WNAC Boston, Mass.	50000
WDBC Escanaba, Mich.	10000
KFEQ St. Joseph, Mo.	5000
WINR Binghamton, N.Y.	1000
WRVM Rochester, N.Y.	250d
WPTF Raleigh, N.C.	50000
WISR Butler, Pa.	250d
WAPA San Juan, P.Rico	10000
WMPS Memphis, Tenn.	10000
KENS San Antonio, Tex.	50000
KOMW Omak, Wash.	1000d
WCAW Charleston, W.Va.	10000

690—434.5

CBU Vancouver, B.C.	10000
CBF Montreal, Que.	50000
WVOK Birmingham, Ala.	50000d
KVNA Flagstaff, Ariz.	1000
KEVT Tucson, Ariz.	250d
KBBA Benton, Ark.	250d
KAPI Pueblo, Colo.	250d
WADS Ansonia, Conn.	500d
WAPE Jacksonville, Fla.	25000d
KULA Honolulu, Hawaii	10000
KBLI Blackfoot, Idaho	1000d
KGGF Coffeyville, Kans.	10000
WTIX New Orleans, La.	5000
KTCR Minneapolis, Minn.	500d
KSTL St. Louis, Mo.	1000d
KEYR Terrytown, Nebr.	1000d
KRCO Prineville, Oreg.	1000d
WXUR Media, Pa.	500
KUSD Vermillion, S.Dak.	1000d
KHEY El Paso, Tex.	10000
KPET Lamesa, Tex.	250
KZEY Tyler, Tex.	250d
WCYB Bristol, Va.	10000d
WNNT Warsaw, Va.	250d
WELO Fisher, W.Va.	500d

700—428.3

WLW Cincinnati, Ohio	50000

710—422.3

CJSP Leamington, Ont.	1000d
CFRG Gravelbourg, Sask.	5000d
CKVM Ville Marie, Que.	10000
WKRG Mobile, Ala.	1000
KMPC Los Angeles, Calif.	50000
KBTR Denver, Colo.	5000
WGBS Miami, Fla.	50000
WROM Rome, Ga.	1000d
KEEL Shreveport, La.	50000
WHB Kansas City, Mo.	10000
WOR New York, N.Y.	50000
DZRH Manila, P.I.	10000
WKJB Mayaguez, P.Rico	1000

Kc. Wave Length	W.P.
WTPR Paris, Tenn.	250d
KGNC Amarillo, Tex.	10000
KURV Edinburg, Tex.	250
KIRO Seattle, Wash.	50000
WDSM Superior, Wis.	5000

720—416.4

WGN Chicago, Ill.	50000

730—410.7

CJNR Blind River, Ont.	1000
CKAC Montreal, Que.	50000
CKDM Dauphin, Man.	10000
CKLG No. Vancouver, B.C.	10000
WJMW Athens, Ala.	1000
KFQD Anchorage, Alaska	10000
KSUD W. Memphis, Ark.	250d
WKTG Thomasville, Ga.	1000d
KLOE Goodland, Kans.	1000d
WFMW Madisonville, Ky.	500d
WMTC Van Cleve, Ky.	1000d
KTRY Bastrop, La.	250d
WARB Covington, La.	250d
WMMS Bath, Maine	1000d
WACE Chicopee, Mass.	5000d
KWRE Warrenton, Mo.	1000d
KWOA Worthington, Minn.	1000d
KURL Billings, Mont.	500d
KVOD Albuquerque, N.Mex.	1000d
WDOS Oneonta, N.Y.	1000d
WFMC Goldsboro, N.C.	1000d
WOHS Shelby, N.C.	1000d
WMGS Bowling Green, Ohio	1000d
KBOY Medford, Oreg.	1000d
WNAK Nanticoke, Pa.	1000d
WPIT Pittsburgh, Pa.	5000d
WPAL Charleston, S.C.	1000d
WLIL Lenoir, Tenn.	1000d
KPCN Grand Prairie, Tex.	500d
KSVN Ogden, Utah	1000d
WPIK Alexandria, Va.	5000d
WMNA Gretna, Va.	1000d
KULE Ephrata, Wash.	1000d
WXMT Merrill, Wis.	1000d

740—405.2

CBXA Edmonton, Alta.	50000
CBL Toronto, Ont.	50000
WBAM Montgomery, Ala.	50000d
KUEQ Phoenix, Ariz.	1000d
KBIG Avalon, Calif.	10000d
KCBS San Francisco, Calif.	50000
KSSS Colo. Springs, Colo.	1000
KVFC Cortez, Colo.	1000d
WFSG Boca Raton, Fla.	1000d
WKMK Blountston, Fla.	1000d
WKIS Orlando, Fla.	5000
KYME Boise, Idaho	500d
WVLN Olney, Ill.	250d
KBOE Oskaloosa, Iowa	250d
WNOP Newport, Ky.	1000d
WTAO Cambridge, Mass.	250d
KPBM Carlsbad, N.Mex.	1000d
WGSM Huntington, N.Y.	5000d
WMBL Morehead City, N.C.	1000d
WPAQ Mount Airy, N.C.	10000d
KRMG Tulsa, Okla.	50000
WVCH Chester, Pa.	1000d
WIAC San Juan, P.Rico	10000
WBAW Barnwell, S.C.	1000d
WIRJ Humbolt, Tenn.	250d
WJIG Tullahoma, Tenn.	250d
KTRH Houston, Tex.	50000
KCMC Texarkana, Tex.	1000
WBCI Williamsburg, Va.	500d

750—399.8

WSB Atlanta, Ga.	50000
WBMD Baltimore, Md.	1000d
KMMJ Grand Island, Neb.	10000d
WHEB Portsmouth, N.H.	1000d
KSEO Durant, Okla.	250d
KXL Portland, Oreg.	50000
WPDX Clarksburg, W.Va.	1000d

760—394.5

KGU Honolulu, Hawaii	10000
WJR Detroit, Mich.	50000
WCPS Tarboro, N.C.	1000d
WORA Mayaguez, P.R.	5000

770—389.4

KUOM Minneapolis, Minn.	5000d
WCAL Northfield, Minn.	5000d
WEW St. Louis, Mo.	1000d
KOB Albuquerque, N.Mex.	50000
WABC New York, N.Y.	50000
KXA Seattle, Wash.	1000d

780—384.4

WBBM Chicago, Ill.	50000
WJAG Norfolk, Neb.	1000d
WCKB Dunn, N.C.	1000d
WBBO Forest City, N.C.	1000d
KSPI Stillwater, Okla.	250d
WAVA Arlington, Va.	1000d

790—379.5

CFCW Camrose, Alta.	10k
CKMR Newcastle, N.B.	1000
CBH Halifax, N.S.	10000
CKSO Sudbury, Ont.	10000
WTUG Tuscaloosa, Ala.	500d
KCEE Tucson, Ariz.	5000d
KOSY Texarkana, Ark.	1000

Kc. Wave Length	W.P.
KDAN Eureka, Calif.	5000d
KABC Los Angeles, Calif.	5000
WLBE Leesburg, Fla.	5000
WFUN Miami Beach, Fla.	5000
WPFA Pensacola, Fla.	1000d
WQXI Atlanta, Ga.	5000
WGRA Cairo, Ga.	1000d
KEST Boise, Idaho	1000d
WRMS Beardstown, Ill.	500d
KXXX Colby, Kans.	5000d
WAKY Louisville, Ky.	5000
WRUM Rumford, Me.	1000d
WSGW Saginaw, Mich.	5000
WSJC Magee, Miss.	1000d
KGHL Billings, Mont.	5000
WWNY Watertown, N.Y.	1000
WLSV Wellsville, N.Y.	1000d
WTNC Thomasville, N.C.	1000d
KFGO Fargo, N.Dak.	5000
KWIL Albany, Oreg.	1000
WAEB Allentown, Pa.	500
WPIC Sharon, Pa.	1000d
WEAN Providence, R.I.	5000
WWBD Bamberg, S.C.	1000d
WETB Johnson City, Tenn.	1000d
WMC Memphis, Tenn.	5000
KTHT Houston, Tex.	5000
KFYO Lubbock, Tex.	5000
KUTA Blanding, Utah	1000d
WSIG Mount Jackson, Va.	1000d
WTAR Norfolk, Va.	5000
KGMI Bellingham, Wash.	5000
KNEW Spokane, Wash.	5000
WEAQ Eau Claire, Wis.	5000

800—374.8

CHAB Moose Jaw, Sask.	10000
CKOK Penticton, B.C.	10000
CFOB Ft. Frances, Ont.	1000
CJLX Ft. William, Ont.	10000
CJBQ Belleville, Ont.	1000
CKLW Windsor, Ont.	50000
CHRC Quebec, Que.	10000
CJAD Montreal, Que.	10000
VOWR St. Johns, N.F.	1000
WHOS Decatur, Ala.	1000d
WMGY Montgomery, Ala.	1000d
KINY Juneau, Alaska	5000
KAGH Crossett, Ark.	250d
KVOM Morrilton, Ark.	250d
KUZZ Bakersfield, Calif.	250d
KDAD Weed, Calif.	1000d
KBRN Brighton, Colo.	500d
WLAD Danbury, Conn.	250d
WSUZ Palatka, Fla.	1000d
WJAT Swainsboro, Ga.	1000d
KXIC Iowa City, Iowa	1000d
WBOK New Orleans, La.	1000d
WCCM Lawrence, Mass.	1000d
WVAL Sauk Rapids, Minn.	5000
KREI Farmington, Mo.	1000d
KDBM Dillon, Mont.	1000d
WKDN Camden, N.J.	1000d
KJEM Okla City, Okla.	250d
KPDQ Portland, Oreg.	1000d
WCHA Chambersburg, Pa.	1000d
WDSC Dillon, S.C.	1000d
WEAB Greer, S.C.	250d
WDEH Sweetwater, Tenn.	1000d
KDDD Dumas, Tex.	250d
KBUH Brigham City, Utah	250d
WSVS Crewe, Va.	5000d
WKEE Huntington, W.Va.	1000d
WDUX Waupaca, Wis.	1000d

810—370.2

KGO San Francisco, Calif.	50000
WIGO Indianapolis, Ind.	250d
WABW Annapolis, Md.	250d
KCMO Kansas City, Mo.	50000
WGY Schenectady, N.Y.	50000
WKBC N.Wilkesboro, N.C.	1000d
WCEC Rocky Mount, N.C.	1000d
WEDO McKeesport, Pa.	1000d
WKVM San Juan, P.R.	25000

820—365.6

WAIT Chicago, Ill.	5000d
WIKY Evansville, Ind.	250d
WOSU Columbus, Ohio	5000d
WFAA Dallas, Tex.	50000
WBAP Ft. Worth, Tex.	50000

830—361.2

KIKI Honolulu, Hawaii	250
WCCO Minneapolis, Minn.	50000
KBOA Kennett, Mo.	1000d
WNYC New York, N.Y.	1000

840—356.9

WTUF Mobile, Ala.	1000d
WRYM New Britain, Conn.	1000d
WHAS Louisville, Ky.	50000
WVPO Stroudsburg, Pa.	250d

850—352.7

CKVL Verdun, Que.	50000
CKRD Red Deer, Alta.	10000
CJJC Langley Prairie, B.C.	1000
WYDE Birmingham, Ala.	10000
KICY Nome, Alaska	5000
KOA Denver, Colo.	50000
WRUF Gainesville, Fla.	5000
WEAT W. Palm Beach, Fla.	1000
KIMO Hilo, Hawaii	1000
WHDH Boston, Mass.	50000

Kc. Wave Length	W.P.
WKBZ Muskegon, Mich.	1000
KFUO St. Louis, Mo.	5000d
WKIX Raleigh, N.C.	10000
WJW Cleveland, Ohio	10000
WJAC Johnstown, Pa.	10000
WEEU Reading, Pa.	1000
WABA Aguadilla, P.R.	500
WRAP Norfolk, Va.	5000
KTAC Tacoma, Wash.	1000

860—348.6

CHAK Inuvik, N.W.T.	1000
CJBC Toronto, Ont.	50000
WHRT Hartselle, Ala.	250d
WAMI Opp, Ala.	1000d
KIFN Phoenix, Ariz.	1000d
KOSE Osceola, Ark.	1000d
KWRF Warren, Ark.	250d
KTRB Modesto, Calif.	10000
WOWW Naugatuck, Conn.	250d
WAZE Clearwater, Fla.	500d
WKKO Cocoa, Fla.	1000d
WERD Atlanta, Ga.	1000
WDMG Douglas, Ga.	5000d
WMRI Marion, Ind.	250d
KWPC Muscatine, Iowa	250d
KOAM Pittsburg, Kans.	10000
WSON Henderson, Ky.	500d
WAYE Dundalk, Md.	500d
WSBS Gt. Barrington, Mass.	250d
KNUJ New Ulm, Minn.	1000d
WMAG Forest, Miss.	500d
KARS Belen, N. Mex.	250d
WFMO Fairmont, N.C.	1000d
KSHA Medford, Oreg.	1000d
WAMO Pittsburgh, Pa.	1000d
WTEL Philadelphia, Pa.	10000d
WLBG Laurens, S.C.	1000d
WIVK Knoxville, Tenn.	1000d
WMTS Murfreesboro, Tenn.	250d
KFST Ft. Stockton, Tex.	250d
KPAN Hereford, Tex.	250d
KSFA Nacogdoches, Tex.	1000d
KONO San Antonio, Tex.	5000
KWHO Salt Lake City, Utah	1000d
WEVA Emporia, Va.	1000d
WOAY Oak Hill, W.Va.	10000d
WFOX Milwaukee, Wis.	250d

870—344.6

KIEV Glendale, Calif.	250d
KAIM Kalmuki, Hawaii	5000
WWL New Orleans, La.	50000
WKAR E. Lansing, Mich.	5000d
WHCU Ithaca, N.Y.	1000d
WGTL Kannapolis, N.C.	1000d
WHOA San Juan, P.R.	5000
KJIM Ft. Worth, Tex.	250d
WFLO Farmville, Va.	1000d

880—340.7

WCBS New York, N.Y.	50000
WRRZ Clinton, N.C.	1000d
WRFO Worthington, Ohio	5000d

890—336.9

WLS Chicago, Ill.	50000
WHNC Henderson, N.C.	1000d
KBYE Okla. City, Okla.	1000d

900—333.1

CKTS Sherbrooke, Que.	1000
CHML Hamilton, Ont.	5000
CHNO Sudbury, Ont.	10000
CJBR Rimouski, Que.	10000
CKJL St. Jerome, Que.	1000
CJVI Victoria, B.C.	10000
CKBI Prince Albert, Sask.	10000
WATV Birmingham, Ala.	1000d
WGOK Mobile, Ala.	1000d
WOZK Ozark, Ala.	1000d
KPRB Fairbanks, Alaska	10000
KHOZ Harrison, Ark.	1000d
KBIF Fresno, Calif.	1000d
KGRB West Covina, Calif.	250d
WJWL Georgetown, Del.	5000d
WSWN Belle Glade, Fla.	1000d
WMOP Ocala, Fla.	1000d
WCGA Calhoun, Ga.	1000d
WCRY Macon, Ga.	250d
WEAS Savannah, Ga.	5000d
KTEE Idaho Falls, Ida.	1000d
KSIR Wichita, Kan.	250d
WKYW Louisville, Ky.	1000d
WLSI Pikeville, Ky.	5000d
KREH Oakdale, La.	250d
WCME Brunswick, Maine	1000d
WATC Gaylord, Mich.	1000d
KTIS Minneapolis, Minn.	1000d
WDDT Greenville, Miss.	1000d
KFAL Fulton, Mo.	1000d
KJSK Columbus, Nebr.	1000d
WOTW Nashau, N.H.	1000d
WBRV Boonville, N.Y.	1000d
WSPN Saratoga Sprgs., N.Y.	250d
WAYN Rockingham, N.C.	1000d
WIAM Williamston, N.C.	1000d
KFNW Fargo, N.Dak.	1000d
WCNS Canton, Ohio	500d
WFRO Fremont, Ohio	500d
WCPA Clearfield, Pa.	1000d
WFLN Philadelphia, Pa.	1000d
WKXV Knoxville, Tenn.	1000d
WCOR Lebanon, Tenn.	500d
KALT Atlanta, Tex.	1000d

Kc. Wave Length W.P.

KMCO	Conroe, Tex.	500d
KFLD	Floydada, Tex.	250d
KCLW	Hamilton, Tex.	250d
WODY	Bassett, Va.	500d
WAFC	Staunton, Va.	1000d
KUEN	Wenatchee, Wash.	1000d
WATK	Antigo, Wis.	250d

910—329.5

CJDV	Drumheller, Alta.	5000
CKLY	Lindsay, Ont.	1000
CBO	Ottawa, Ont.	5000
CFJC	Kamloops, B.C.	10000
CHRL	Roberval, Que.	1000
WDVC	Dadeville, Ala.	500d
KPHO	Phoenix, Ariz.	5000
KLCN	Blytheville, Ark.	5000d
KAMD	Camden, Ark.	1000
KDEO	El Cajon, Calif.	1000
KEWB	Oakland, Calif.	5000
KOXR	Oxnard, Calif.	1000d
KPOF	nr. Denver, Colo.	5000
WHAY	New Britain, Conn.	5000
WPLA	Plant City, Fla.	1000d
WGAF	Valdosta, Ga.	5000
KBGN	Caldwell, Ida.	1000d
WAKO	Lawrenceville, Ill.	500d
WSUI	Iowa City, Iowa	5000
WLCS	Baton Rouge, La.	1000
WABI	Bangor, Maine	5000
WFDF	Flint, Mich.	5000
WCOC	Meridian, Miss.	5000
KOYN	Billings, Mont.	1000d
KYSS	Missoula, Mont.	1000d
KBIM	Roswell, N.Mex.	5000d
WLAS	Jacksonville, N.C.	5000d
KCJB	Minot, N.Dak.	1000
WPFB	Middletown, Ohio	1000
KGLC	Miami, Okla.	1000
KURY	Brookings, Oreg.	1000d
WAVL	Apollo, Pa.	1000d
WGBI	Scranton, Pa.	1000
WSBA	York, Pa.	5000
WPRP	Ponce, P.R.	5000
WNCG	North Charleston, S.C.	500d
WORD	Spartanburg, S.C.	5000d
WJCW	Johnson City, Tenn.	5000
WEPG	S. Pittsburgh, Tenn.	500d
KNAF	Fredericksburg, Tex.	1000d
KRIO	McAllen, Tex.	5000
KRRV	Sherman, Tex.	1000
KALL	Salt Lake City, Utah	5000
WWRJ	White River Junction, Vermont	1000d
WRNL	Richmond, Va.	5000
WHYE	Roanoke, Va.	1000d
KORD	Pasco, Wash.	1000d
KIXI	Seattle, Wash.	1000
KISY	Vancouver, Wash.	1000
WHSM	Hayward, Wis.	5000d
WDOR	Sturgeon Bay, Wis.	1000d

920—325.9

CFRY	Portage La Prairie, Man.	1000
CJCH	Halifax, N.S.	10000
CJCJ	Woodstock, N.B.	1000
CKCY	Sault St. Marie, Ont.	10000
CKNX	Wingham, Ont.	2500
WCTA	Adalusia, Ala.	5000
WWWR	Russellville, Ala.	1000d
KARK	Little Rock, Ark.	5000
KDES	Palm Springs, Calif.	1000d
KVEC	San Luis Obispo, Cal.	1000
KREX	Grd. Junction, Colo.	5000
KLMR	Lamar, Colo.	1000
WMEG	Eau Gallie, Fla.	1000d
WGST	Atlanta, Ga.	5000
WVOH	Hazelhurst, Ga.	500wd
WGNU	Granite City, Ill.	500d
WMOK	Metropolis, Ill.	1000d
WBAA	W. Lafayette, Ind.	5000
KFNF	Council Bluffs, Ia.	5000
WTCW	Whitesburg, Ky.	1000d
WBOX	Bogalusa, La.	1000d
KTOC	Jonesboro, La.	1000d
WPTX	Lexington Pk., Md.	500d
WMPL	Hancock, Mich.	1000d
KDHL	Faribault, Minn.	1000
KWAD	Wadena, Minn.	1000
KRAM	Las Vegas, Nev.	1000
KOLO	Reno, Nev.	1000
KQEO	Albuquerque, N.Mex.	1000
WTTM	Trenton, N.J.	1000
WKRT	Cortland, N.Y.	1000
WGHQ	Kingston, N.Y.	5000d
WIRO	Lake Placid, N.Y.	1000
WBBB	Burlington, N.C.	5000d
WMNI	Columbus, Ohio	500
KGAL	Lebanon, Oreg.	1000
WKVA	Lewistown, Pa.	1000
WJAR	Providence, R.I.	5000
WTND	Orangeburg, S.C.	1000d
KEZU	Rapid City, S.Dak.	1000d
WLIV	Livingston, Tenn.	1000d
KELP	El Paso, Tex.	1000
KECK	Odessa, Tex.	1000
KTLW	Texas City, Tex.	1000d
KITN	Olympia, Wash.	1000d
KXLY	Spokane, Wash.	5000
WMMN	Fairmont, W.Va.	5000
WOKY	Milwaukee, Wis.	1000

930—322.4

CFBC	Saint John, N.B.	10000
CJCA	Edmonton, Alta.	10000
CJON	St. John's, N.F.	10000
WETO	Gadsden, Ala.	1000d
KTKN	Ketchikan, Alaska	1000
KAPR	Douglas, Ariz.	1000d
KFGT	Flagstaff, Ariz.	1000
KHJ	Los Angeles, Calif.	5000
KNGL	Paradise, Calif.	500d
KIUP	Durango, Colo.	5000
WKSB	Milford, Del.	500d
WHAN	Haines City, Fla.	1000
WJAX	Jacksonville, Fla.	5000
WKXY	Sarasota, Fla.	1000
WMGR	Bainbridge, Ga.	5000
WGTA	Summerville, Ga.	5000
KSEI	Pocatello, Idaho	5000
WTAD	Quincy, Ill.	5000
WKCT	Bowling Green, Ky.	1000
WFMD	Frederick, Md.	5000
WREB	Holyoke, Mass.	500d
WBCK	Battle Creek, Mich.	5000
KKIN	Aitkin, Minn.	1000d
WSLI	Jackson, Miss.	5000
KWOC	Poplar Bluff, Mo.	1000
KOFI	Kalispell, Mont.	5000d
KOGA	Ogallala, Nebr.	500d
WWNH	Rochester, N.H.	5000d
WPAT	Paterson, N.J.	5000
WBEN	Buffalo, N.Y.	5000
WIZR	Johnstown, N.Y.	1000d
WSOC	Charlotte, N.C.	5000
WITN	Washington, N.C.	5000
WEOL	Elyria, Ohio	1000
WKY	Oklahoma City, Okla.	5000
KAGI	Grants Pass, Oreg.	5000
WCNR	Bloomsburg, Pa.	1000d
KSDN	Aberdeen, S.D.	1000
WSEV	Sevierville, Tenn.	5000d
KDET	Center, Tex.	1000d
KITE	San Antonio, Tex.	5000
KENY	Bellingham-Ferndale, Wash.	1000d
WSAZ	Huntington, W.Va.	5000
KROE	Sheridan, Wyo.	1000d
WLBL	Auburndale, Wis.	5000d

940—319.0

CBM	Montreal, Que.	50000
CJGX	Yorkton, Sask.	10000
CJIB	Vernon, B.C.	1000
KOBY	Tucson, Ariz.	250
KFRE	Fresno, Calif.	50000
WINZ	Miami, Fla.	50000
WMAZ	Macon, Ga.	50000
KAHU	Waipahu, Hawaii	10000
WMIX	Mt. Vernon, Ill.	5000d
KIOA	Des Moines, Iowa	10000
WYLD	New Orleans, La.	1000
WJOR	South Haven, Mich.	1000d
KSWM	Aurora, Mo.	500d
KVSH	Valentine, Nebr.	5000d
WFNC	Fayetteville, N.C.	10000
KGRL	Bend, Oreg.	1000d
WESA	Charleroi, Pa.	250d
WGRP	Greenville, Pa.	1000d
WIPR	San Juan, P.R.	10000
KIXZ	Amarillo, Tex.	5000
KTON	Belton, Tex.	1000d
KATQ	Texarkana, Tex.	1000d
WNRG	Grundy, Va.	5000d

950—315.6

CKNB	Campbellton, N.B.	10000
CKBB	Barrie, Ont.	10000
WRMA	Montgomery, Ala.	1000d
KXJK	Forrest City, Ark.	5000d
KFSA	Ft. Smith, Ark.	1000
KAHI	Auburn, Calif.	1000d
KIMN	Denver, Colo.	5000
WNUE	Ft. Walton Sch., Fla.	1000d
WLOF	Orlando, Fla.	5000
WGTA	Summerville, Ga.	5000d
WGOV	Valdosta, Ga.	5000
KBOI	Boise, Idaho	5000
KLER	Orofino, Idaho	1000d
WAAF	Chicago, Ill.	1000d
WXLW	Indianapolis, Ind.	5000d
KOEL	Oelwein, Iowa	1000
KJRG	Newton, Kans.	500d
WBVL	Barbourville, Ky.	1000d
WAGM	Presque Isle, Maine	5000
WORL	Boston, Mass.	5000d
WWJ	Detroit, Mich.	5000
KRSI	St. Louis Park, Minn.	1000d
WBKH	Hattiesburg, Miss.	5000d
KLIK	Jefferson City, Mo.	5000d
WBER	Moncks Corner, N.C.	500d
KLHS	Lordsburg, N. Mex.	1000d
WBBF	Rochester, N.Y.	1000
WIBX	Utica, N.Y.	5000
WPET	Greensboro, N.C.	500d
KYES	Roseburg, Oreg.	1000d
WNCC	Barnesboro, Pa.	500d
WPEN	Philadelphia, Pa.	5000
WSPA	Spartanburg, S.C.	5000
KWAT	Watertown, S.Dak.	1000
WAGG	Franklin, Tenn.	1000d
KDSX	Denison, Tex.	500
KPRC	Houston, Tex.	50000
KSEL	Lubbock, Tex.	5000
WXGI	Richmond, Va.	5000d
KJR	Seattle, Wash.	5000
WERL	Eagle River, Wis.	1000d
WKAZ	Charleston, W.Va.	5000
WKTS	Sheboygan, Wis.	500d

960—312.3

CFAC	Calgary, Alta.	10000
CKNL	Fort St. John, B.C.	1000
CHNS	Halifax, N.S.	10000
CKWS	Kingston, Ont.	5000
WBRC	Birmingham, Ala.	5000
WMOZ	Mobile, Ala.	1000
WCVQ	Kodiak, Alaska	250
KOOL	Phoenix, Ariz.	5000
KAVR	Apple Valley, Calif.	5000d
KNEZ	Lompoc, Calif.	500
KABL	Oakland, Calif.	5000
WELI	New Haven, Conn.	5000
WGRO	Lake City, Fla.	500d
WJCM	Sebring, Fla.	1000d
WJAZ	Albany, Ga.	5000d
WRFC	Athens, Ga.	5000
KSRA	Salmon, Idaho	1000d
WDLM	E. Moline, Ill.	1000d
WSBT	South Bend, Ind.	5000
KMA	Shenandoah, Iowa	5000
WPRT	Prestonsburg, Ky.	5000d
KROF	Abbeville, La.	1000d
WBOC	Salisbury, Md.	5000
WFGM	Fitchburg, Mass.	1000
WHAK	Rogers City, Mich.	5000d
KLTF	Little Falls, Minn.	500d
WABG	Greenwood, Miss.	1000
KFVS	Cape Girardeau, Mo.	5000
KNEB	Scottsbluff, Nebr.	1000
KWYK	Farmington, N.Mex.	1000d
WEAV	Plattsburg, N.Y.	5000
WAAK	Dallas, N.C.	1000d
WFTC	Kinston, N.C.	5000
WWST	Wooster, Ohio	1000d
KGWA	Enid, Okla.	1000
KLAD	Klamath Falls, Oreg.	5000d
WHYL	Carlisle, Pa.	5000d
WADP	Kane, Pa.	1000d
WATS	Sayre, Pa.	1000d
WBEU	Beaufort, S.C.	1000d
WBMC	McMinnville, Tenn.	500d
KIMP	Mt. Pleasant, Tex.	1000d
KGKL	San Angelo, Tex.	5000
KOVO	Provo, Utah	5000
WDBJ	Roanoke, Va.	5000
KALE	Richland, Wash.	1000
WTCH	Shawano, Wis.	1000

970—309.1

CKCH	Hull, Que.	5000
WERH	Hamilton, Ala.	5000d
WTBF	Troy, Ala.	5000
KNEA	Jonesboro, Ark.	1000d
KBIS	Bakersfield, Calif.	1000
KCHV	Coachella, Calif.	5000
KBEE	Modesto, Calif.	1000
KFEL	Pueblo, Colo.	1000d
WFLA	Tampa, Fla.	5000
WIIN	Atlanta, Ga.	5000d
WVOP	Vidalia, Ga.	5000d
KHBC	Hilo, Hawaii	1000
KAYT	Rupert, Idaho	1000d
WMAY	Springfield, Ill.	1000
WAVE	Louisville, Ky.	5000
KSYL	Alexandria, La.	1000
WCSH	Portland, Maine	5000
WAMD	Aberdeen, Md.	500
WESO	Southbridge, Mass.	1000d
WJAN	Ishpeming, Mich.	5000d
WKHM	Jackson, Mich.	1000
KQAQ	Austin, Minn.	5000d
KDDK	Billings, Mont.	5000
KJLT	No. Platte, Nebr.	5000d
KVEG	Las Vegas, Nev.	500d
WJRZ	Newark, N.J.	5000
WEBR	Buffalo, N.Y.	5000
WCHN	Norwich, N.Y.	500d
WRCS	Ahoskie, N.C.	1000d
WWIT	Canton, N.C.	1000d
WDAY	Fargo, N.Dak.	5000
WRED	Ashtabula, Ohio	5000
WATH	Athens, Ohio	1000d
KAKC	Tulsa, Okla.	1000
KOIN	Portland, Oreg.	5000
WWSW	Pittsburgh, Pa.	5000
WJMX	Florence, S.C.	5000
KASE	Austin, Tex.	1000d
KNOK	Ft. Worth, Tex.	1000d
WIVI	Christiansted, V.I.	1000
WYPR	Danville, Va.	1000d
WBVA	Waynesboro, Va.	500d
KREM	Spokane, Wash.	5000
WWYO	Pineville, W.Va.	1000d
WHA	Madison, Wis.	5000d
WIGL	Superior, Wis.	500d

980—305.9

CKNW	New Westminster, Brit. Columbia	10000
CFPL	London, Ont.	10000
CKGM	Montreal, Que.	10000
CBV	Quebec, Que.	5000
CHEX	Peterboro, Ont.	5000
CKRM	Regina, Sask.	10000
WKLF	Clanton, Ala.	1000d
WXLL	Big Delta, Alaska	100
KINS	Eureka, Calif.	5000
KEAP	Fresno, Calif.	500d
KFWB	Los Angeles, Calif.	5000
KCTY	Salinas, Calif.	1000d
KGLN	Glenwood Sprgs., Colo.	1000d
WSUB	Groton, Conn.	1000d
WRC	Washington, D.C.	5000
WDVH	Gainesville, Fla.	5000d
WTOT	Marianna, Fla.	1000d
WBOP	Pensacola, Fla.	1000d
WLOD	Pompano Beach, Fla.	1000d
WKLY	Hartwell, Ga.	1000d
WPGA	Perry, Ga.	500d
WRIP	Rossville, Ga.	500d
KUPI	Idaho Falls, Idaho	1000d
KSGM	Chester, Ill.	500
WITY	Danville, Ill.	1000
KREB	Shreveport, La.	5000d
WCAP	Lowell, Mass.	1000d
WDMC	Otsego, Mich.	500
WPBC	Minneapolis, Minn.	1000d
WAPF	McComb, Miss.	1000d
KMBC	Kansas City, Mo.	5000
KLYQ	Hamilton, Mont.	1000d
KVLV	Fallon, Nev.	5000d
KICA	Clovis, N. Mex.	1000
KMIN	Grants, N. Mex.	1000d
WTRY	Troy, N.Y.	5000
WKLM	Wilmington, N.C.	5000d
WAAA	Win.-Salem, N.C.	1000d
WONE	Dayton, Ohio	5000
WILK	Wilkes-Barre, Pa.	5000
WAZS	Summerville, S.C.	500d
WRBI	Winnsboro, S.C.	500d
KDSJ	Deadwood, S.Dak.	1000
WSIX	Nashville, Tenn.	5000
KFRD	Rosenberg, Tex.	1000d
KSVC	Richfield, Utah	5000
WFHG	Bristol, Va.	5000
WMEK	Chase City, Va.	500d
KUTI	Yakima, Wash.	5000d
WHAW	Weston, W.Va.	1000d
WCUB	Manitowoc, Wis.	1000d
WPRE	Prairie du Chien, Wis.	1000

990—302.8

CBW	Winnipeg, Man.	50000
CBY	Corner Brook, Nfld.	10000
WEIS	Center, Ala.	250
WWWF	Fayette, Ala.	1000d
WTCB	Flomaton, Ala.	500d
KTKT	Tucson, Ariz.	10000
KKIS	Pittsburg, Calif.	5000
KGUO	Santa Barbara, Calif.	1000d
KLIR	Denver, Colo.	1000d
WBZY	Torrington, Conn.	1000d
WFAB	Miami, Fla.	5000
WHOO	Orlando, Fla.	10000
WDWD	Dawson, Ga.	1000d
WGML	Hinesville, Ga.	250d
KTRG	Honolulu, Hawaii	5000
WCAZ	Carthage, Ill.	1000d
WITZ	Jasper, Ind.	1000d
KAYL	Storm Lake, Iowa	250d
KRSL	Russell, Kans.	250d
WJMR	New Orleans, La.	250d
KRIH	Rayville, La.	250d
WCRM	Clare, Mich.	250d
WABO	Waynesboro, Miss.	250d
KRMO	Monett, Mo.	250d
KSVP	Artesia, N.Mex.	1000
WEEB	Southern Pines, N.C.	5000d
WJEH	Gallipolis, Ohio	1000d
WTIG	Massillon, Ohio	250d
KRKT	Albany, Oreg.	250d
WIBG	Philadelphia, Pa.	50000
WVSC	Somerset, Pa.	250d
WPRA	Mayaguez, P.R.	10000
WLKW	Providence, R.I.	50000
WAKN	Aiken, S.C.	1000d
WNOX	Knoxville, Tenn.	10000
KWAM	Memphis, Tenn.	1000d
KTRM	Beaumont, Tex.	1000
KAML	Kenedy, Tex.	250d
KNIN	Wichita Falls, Tex.	10000
KDYL	Tooele, Utah	1000d
WNRV	Narrows, Va.	1000d
WANT	Richmond, Va.	1000d
WKLJ	Sparta, Wis.	250

1000—299.8

CKBW	Bridgewater, N.S.	10000
WCFL	Chicago, Ill.	50000
KTOK	Okla. City, Okla.	5000
KSTA	Coleman, Tex.	250d
KGRI	Henderson, Tex.	250d
WHWB	Rutland, Vt.	1000d
WBNB	Charlotte Amalie, Virgin Islands	1000
KOMO	Seattle, Wash.	50000

1010—296.9

CBX	Calgary, Alta.	50000d
CFRB	Toronto, Ont.	50000
KCAC	Phoenix, Ariz.	500d
KVNC	Winslow, Ariz.	1000
KLRA	Little Rock, Ark.	10000
KCHJ	Delano, Calif.	5000
KCMJ	Palm Sprgs., Calif.	1000
KSAY	San Fran., Calif.	10000d
WCNU	Crestview, Fla.	1000d
WZRO	Jacksonville Beach, Florida	2500d
WINQ	Tampa, Fla.	50000d
WGUN	Decatur, Ga.	50000d
KATN	Boise, Idaho	1000d
WCSI	Columbus, Ind.	500d
KSMN	Mason City, Iowa	1000d
KIND	Independence, Kans.	250d
KOLA	DeRidder, La.	1000d
WSID	Baltimore, Md.	1000d
WMRT	Lansing, Mich.	500d
WMOX	Meridian, Miss.	10000
KCHI	Chillicothe, Mo.	250d
KXEN	Festus, Mo.	50000d
KRVN	Lexington, Nebr.	25000d
WCNL	Newport, N.H.	250d
WINS	New York, N.Y.	50000

Kc. Wave Length W.P.

WABZ Albermarle, N.C. 1000d
WFGW Black Mountain, N.C. 10000d
WELS Kinston, N.C. 1000d
WIOI New Boston, Ohio 1000d
KBEV Portland, Oreg. 1000d
WUNS Lewisburg, Pa. 250d
WHIN Gallatin, Tenn. 1000d
WORM Savannah, Tenn. 250d
KBUY Amarillo, Tex. 5000
KODA Houston, Tex. 1000d
KAWA Waco, Tex. 10000d
WELK Charlottesville, Va. 1000d
WMEV Marion, Va. 1000d
WPMH Portsmouth, Va. 5000d
WCST Berkeley Sprgs., W.Va. 250d
WSPT Stevens Pt., Wis. 1000d

1020—293.9

KGBS Los Angeles, Calif. 50000
WCIL Carbondale, Ill. 1000d
WPEO Peoria, Ill. 1000d
KDKA Pittsburgh, Pa. 50000

1030—291.1

WBZ Boston, Mass. 50000
WBZA Springfield, Mass. 1000
KCTA Corpus Christi, Tex. 50000d

1040—288.3

KHVH Honolulu, Hawaii 5000
WHO Des Moines, Iowa 50000
KIXL Dallas, Tex. 1000d

1050—285.5

CFGP Grande Prairie, Alta. 10000
CKSB St. Boniface, Man. 10000
CJIC Sault Ste. Marie, Ont. 10000
CHUM Toronto, Ont. 5000
WRFS Alexander City, Ala. 1000d
WCRI Scottsboro, Ala. 250d
KVWM Show Low, Ariz. 250d
KVLC Little Rock, Ark. 1000d
KOFY San Mateo, Calif. 1000d
KWSO Wasco, Calif. 1000d
KLMO Longmont, Colo. 250d
WJSB Crestview, Fla. 1000d
WIVY Jacksonville, Fla. 1000d
WHBO Tampa, Fla. 250d
WRMF Titusville, Fla. 500d
WAUG Augusta, Ga. 5000d
WBIE Marietta, Ga. 500d
WMNZ Montezuma, Ga. 250d
WDZ Decatur, Ill. 1000d
KNCO Garden City, Kans. 1000d
WNES Central City, Ky. 500d
KLPL Lake Providence, La. 250d
KCIJ Shreveport, La. 250d
KVPI Villa Platte, La. 250d
WQMR Silver Sprg., Md. 1000d
WPAG Ann Arbor, Mich. 5000d
KLOH Pipestone, Minn. 1000d
WACR Columbus, Miss. 1000d
KMIS Portageville, Mo. 250d
KSIS Sedalia, Mo. 1000d
KLVC Las Vegas, Nev. 500d
WBNC Conway, N.H. 1000d
WSEN Baldwinsville, N.Y. 250d
WSTS Massena, N.Y. 1000d
WHN New York, N.Y. 50000
WFSC Franklin, N.C. 1000d
WLON Lincolnton, N.C. 1000d
WWGP Sanford, N.C. 1000d
KCCO Lawton, Okla. 250d
KFMJ Tulsa, Okla. 1000d
KUBE Pendleton, Oreg. 1000d
KEED Springfield, Oreg. 1000d
WBUT Butler, Pa. 1000d
WLYC Williamsport, Pa. 1000d
WSMT Sparta, Tenn. 1000d
KLEN Killeen, Tex. 250d
KWLD Liberty, Tex. 250d
KPLA Plainview, Tex. 1000d
KCAS Slaton, Tex. 250d
WGAT Gate City, Va. 250d
WBRG Lynchburg, Va. 1000d
WCMS Norfolk, Va. 1000d
KNBX Kirkland, Wash. 1000d
WCEF Parkersburg, W.Va. 1000d
WECL Eau Claire, Wis. 1000d
WLIP Kenosha, Wis. 250d
KWIV Douglas, Wyo. 250d

1060—282.8

CFCN Calgary, Alta. 10000
CJLR Quebec, Que. 10000
KUPD Tempe, Ariz. 500
KPAY Chico, Calif. 10000
WNOE New Orleans, La. 50000
WHFB Benton Harbor, Mich. 1000d
WMAP Monroe, N.C. 250d
WHOF Canton, Ohio 1000d
WRCV Philadelphia, Pa. 50000

1070—280.2

CFAX Victoria, B.C. 10000
CBA Sackville, N.B. 50000
CHOK Sarnia, Ont. 5000
WAPI Birmingham, Ala. 50000
KNX Los Angeles, Calif. 50000
WVCG Coral Gables, Fla. 1000d
WIBC Indianapolis, Ind. 50000
KFDI Wichita, Kans. 10000

Kc. Wave Length W.P.

KHMO Hannibal, Mo. 5000
WHPE High Point, N.C. 1000d
WMIA Arecibo, P.R. 500
WFLI Lookout Mtn., Tenn. 10000
WDIA Memphis, Tenn. 50000
KOPY Alice, Tex. 1000
WKOW Madison, Wis. 10000

1080—277.6

KSCO Santa Cruz, Calif. 10000
WTIC Hartford, Conn. 50000
WKLO Louisville, Ky. 5000
WOAP Owosso, Mich. 250d
WUFO Amherst, N.Y. 1000
WEWO Laurinburg, N.C. 1000d
KWJJ Portland, Oreg. 10000
WYRE Pittsburgh, Pa. 1000d
KRLD Dallas, Tex. 50000

1090—275.1

CHEC Lethbridge, Alta. 5000
CHIC Brampton, Ont. 250
CHRS St. Jean, Que. 1000
KAAY Little Rock, Ark. 50000
WCRA Effingham, Ill. 250d
KHAI Honolulu, Hawaii 5000
KNWS Waterloo, Iowa 1000d
WBAL Baltimore, Md. 50000
WILD Boston, Mass. 1000d
WMUS Muskegon, Mich. 1000d
WAJS San German P.R. 250
KING Seattle, Wash. 50000

1100—272.6

KFAX San Francisco, Calif. 50000
WLBB Carrollton, Ga. 250d
WHLI Hempstead, N.Y. 10000d
KYW Cleveland, Ohio 50000
WGPA Bethlehem, Pa. 250d

1110—270.1

CFML Cornwall, Ont. 1000
CFTJ Galt, Ont. 250
WALT Tampa, Fla. 50000d
KIPA Hilo, Hawaii 1000
WMBI Chicago, Ill. 5000d
KFAB Omaha, Nebr. 50000
WBT Charlotte, N.C. 50000
KBND Bend, Oreg. 5000
WNAR Norristown, Pa. 500d
WVJP Caguas, P.R. 250
WHIM Providence, R.I. 1000d

1120—267.7

WUST Bethesda, Md. 250d
KMOX St. Louis, Mo. 50000
WWOL Buffalo, N.Y. 1000d
KCLE Cleburne, Tex. 250d

1130—265.3

CKWX Vancouver, B.C. 50000
KROU Dinuba, Calif. 1000
KSDO San Diego, Calif. 5000
KLEI Kailua, Hawaii 1000
KWKH Shreveport, La. 50000
WCAR Detroit, Mich. 50000
WDGY Minneapolis, Minn. 50000
WNEW New York, N.Y. 50000

1140—263.0

CKXL Calgary, Alta. 10000
CBI Sydney, N.S. 5000
KRAK Sacramento, Calif. 50000
WMIE Miami, Fla. 10000
KGEM Boise, Idaho 10000
WSIV Pekin, Ill. 1000d
KLPR Oklahoma City, Okla. 1000d
WITA San Juan, P.R. 500
KSOO Sioux Falls, S.Dak. 10000
KORC Mineral Wells, Tex. 250d
WRVA Richmond, Va. 50000

1150—260.7

CKSA Lloydminister, Alta. 10000
CHSJ Saint John, N.B. 10000
CKOC Hamilton, Ont. 10000
CKX Brandon, Man. 10000
CKTR Three Rivers, Que. 10000
WBCA Bay Minette, Ala. 1000d
WGEA Geneva, Ala. 1000d
WJRD Tuscaloosa, Ala. 5000
KCKY Coolidge, Ariz. 1000
KXLR No. Little Rock, Ark. 5000
KFSG Los Angeles, Calif. 2500
KRKD Los Angeles, Calif. 5000
KJAX Santa Rosa, Calif. 5000
KGMC Englewood, Colo. 1000d
WCNX Middletown, Conn. 500d
WDEL Wilmington, Del. 5000
WNDB Daytona Bch., Fla. 1000
WTMP Tampa, Fla. 5000d
WFPM Fort Valley, Ga. 1000d
WJEM Valdosta, Ga. 1000d
WGGH Marion, Ill. 5000d
WJRL Rockford, Ill. 500d
KWKY Des Moines, Iowa 1000
KSAL Salina, Kans. 5000
WMST Mt. Sterling, Ky. 500d
WLOC Mumfordville, Ky. 1000d
WJBO Baton Rouge, La. 5000
WGHM Skowhegan, Maine 5000d
WHMC Gaithersburg, Md. 1000
WCOP Boston, Mass. 5000
WCEN Mt. Pleasant, Mich. 1000

Kc. Wave Length W.P.

KASM Albany, Minn. 1000d
WXTN Lexington, Miss. 500d
KRMS Osage Beach, Mo. 1000d
KSEN Shelby, Mont. 1000
KDEF Albuquerque, N.Mex. 1000
WRUN Utica, N.Y. 5000
WBAG Burlington, N.C. 1000d
WGBR Goldsboro, N.C. 5000
WCUE Cuyahoga Falls, Ohio 1000d
WIMA Lima, Ohio 1000
KNED McAlester, Okla. 1000
KAGO Klamath Falls, Oreg. 5000
WHUN Huntingdon, Pa. 5000d
WYNS Lehighton, Pa. 1000d
WKPA New Kensington, Pa. 1000d
WDIX Orangeburg, S.C. 5000
WTYC Rock Hill, S.C. 1000d
WSNW Seneca Township, South Carolina 1000d
KIMM Rapid City, S.Dak. 5000d
WAPO Chattanooga, Tenn. 5000
WCRK Morristown, Tenn. 1000
WTAW Bryan, Tex. 1000d
KCCT Corpus Christi, Tex. 1000d
KIZZ El Paso, Tex. 1000d
KVIL Highland Park, Tex. 1000d
KJBC Midland, Tex. 1000d
KPNG Port Neches, Tex. 500d
KOLJ Quanah, Tex. 500d
KBER San Antonio, Tex. 1000d
KOFE Pullman, Wash. 1000d
KAYO Seattle, Wash. 5000
KKEY Vancouver, Wash. 1000d
WABH Deerfield, Va. 1000d
WELC Welch, W.Va. 1000d
WAXX Chippewa Falls, Wis. 5000d
WISN Milwaukee, Wis. 5000

1160—258.5

WJJD Chicago, Ill. 50000
KSL Salt Lake City, Utah 50000

1170—256.3

CFNS Saskatoon, Sask. 1000
WCOV Montgomery, Ala. 10000
KCBQ San Diego, Calif 50000
KLOK San Jose, Calif. 10000
KOHO Honolulu, Hawaii 1000
WLBH Mattoon, Ill. 250d
KSTT Davenport, Iowa 1000
KVOO Tulsa, Okla. 50000
WLEO Ponce, P.R. 250
KPUG Bellingham, Wash. 1000
WWVA Wheeling, W.Va. 50000

1180—254.1

WLDS Jacksonville, Ill. 1000d
WHAM Rochester, N.Y. 50000

1190—252.0

KZON Tolleson, Ariz. 250
KEZY Anaheim, Calif. 1000
KNBA Vallejo, Calif. 250d
WOWO Ft. Wayne, Ind. 50000
WANN Annapolis, Md. 10000d
WKOX Fram'gham, Mass. 1000d
WLIB New York, N.Y. 1000d
KEX Portland, Oreg. 50000
KLIF Dallas, Tex. 50000

1200—249.9

WOAI San Antonio, Tex. 50000

1210—247.8

KZOO Honolulu, Hawaii 1000
WCNT Centralia, Ill. 1000d
WKNX Saginaw, Mich. 10000d
WADE Wadesboro, N.C. 1000d
WAVI Dayton, Ohio 250d
WCAU Philadelphia, Pa. 50000

1220—245.8

CJOC Lethbridge, Alta. 10000
CKDA Victoria, B.C. 10000
CJRL Kenora, Ont. 1000
CKCW Moncton, N.B. 10000
CJSS Cornwall, Ont. 10000
CKSM Shawinigan, Quebec 1000
WEZB Birmingham, Ala. 1000d
WPRN Butler, Ala. 1000d
WABF Fairhope, Ala. 1000
KVSA McGehee, Ark. 1000d
KLIP Fowler, Calif. 250d
KIBE Palo Alto, Calif. 1000d
KKAR Pomona, Calif. 250d
KFSC Denver, Colo. 1000d
WDEE Hamden, Conn. 1000d
WQTY Arlington, Fla. 1000d
WKBX Kissimmee, Fla. 1000d
WMET Miami, Fla. 250d
WSAF Sarasota, Fla. 1000d
WCLB Camilla, Ga. 1000d
WPLK Rockmart, Ga. 500d
WSFT Thomaston, Ga. 250d
WLPO LaSalle, Ill. 1000d
WKRS Waukegan, Ill. 1000d
WSLM Salem, Ind. 1000d
KJAN Atlantic, Iowa 250d
KOUR Independence, Iowa 250d
KOFO Ottawa, Kans. 250d
WFKN Franklin, Ky. 250d
KBCL Shreveport, La. 250d
WLBI Denham Springs, La. 250d
WSME Sanford, Maine 1000d
WBCH Hastings, Mich. 250d
WAVN Stillwater, Minn. 5000d

Kc. Wave Length W.P.

WMDC Hazlehurst, Miss. 250d
KBHM Branson, Mo. 1000d
KLPW Union, Mo. 1000d
WKBK Keene, N.H. 1000d
WGNY Newburgh, N.Y. 5000d
WSOQ N. Syracuse, N.Y. 1000d
WKMT Kings Mtn., N.C. 1000d
WREV Reidsville, N.C. 1000d
WENC Whiteville, N.C. 1000d
KEYD Oakes, N.Dak. 1000d
WGAR Cleveland, Ohio 50000
WERT Van Wert, Ohio 250d
KGYN Guymon, Okla. 1000d
KBLY Goldbeach, Oreg. 1000d
KAPT Salem, Ore. 1000
WJUN Mexico, Pa. 1000d
WRIB Providence, R.I. 1000d
WALD Walterboro, S.C. 1000d
WFWL Camden, Tenn. 250d
WCPH Etowah, Tenn. 1000d
WHEY Millington, Tenn. 250d
KVLL Livingston, Tex. 250d
KZEE Weatherford, Tex. 250d
WLSD Big Stone Gap, Va. 1000d
WFAX Falls Church, Va. 5000d
KASY Auburn, Wash. 250d
KOZI Chelan, Wash. 1000d
WRNE Wis. Rapids, Wis. 500d

1230—243.8

CHFC Churchill, Man. 250
CFKL Schefferville, Que. 250
CFGR Gravelbourg, Sask. 250
CFHR Hay River, Nwt. 100
CFYT Dawson City, Yukon T. 100
CFPA Port Arthur, Ont. 1000
CKLD Thetford Mines, Que. 250
CKMP Midland, Ont. 250
VOAR St. John's, Nfld. 100
CKVD Val D'Or, Que. 1000
WAUD Auburn, Ala. 1000
WJBB Haleyville, Ala. 1000
WBHP Huntsville, Ala. 1000
WOLS Florence, Ala. 1000
WNUZ Talledega, Ala. 250
WTBC Tuscaloosa, Ala. 250
KIFW Sitka, Alaska 250
KSUN Bisbee, Ariz. 250
KAAA Kingman, Ariz. 250
KRIZ Phoenix, Ariz. 250
KATO Safford, Ariz. 250
KINO Winslow, Ariz. 250
KCON Conway, Ark. 250
KFPW Ft. Smith, Ark. 1000
KBTM Jonesboro, Ark. 250
KGEE Bakersfield, Calif. 500
KWTC Barstow, Calif. 1000
KIBS Bishop, Calif. 1000
KXO El Centro, Calif. 250
KDAC Ft. Bragg, Calif. 250
KGFJ Los Angeles, Calif. 250
KPRL Paso Robles, Calif. 1000
KRDG Redding, Calif. 250
KWG Stockton, Calif 1000
KEXO Grand Junc., Colo. 250
KBRR Leadville, Colo. 250
KDZA Pueblo, Colo. 250
KGEK Sterling, Colo. 1000d
WINF Manchester, Conn. 1000
WGGG Gainesville, Fla. 1000
WONN Lakeland, Fla. 250
WMAF Madison, Fla. 1000
WSBB New Smyrna Bch., Florida 1000
WNVY Pensacola, Fla. 250
WCNH Quincy, Fla. 1000d
WJNO W. Palm Beach, Fla. 250
WBIA Augusta, Ga. 1000d
WBLJ Dalton, Ga. 1000
WXLI Dublin, Ga. 250
WFOM Marietta, Ga. 1000
WSOK Savannah, Ga. 250
WAYX Waycross, Ga. 1000
KBAR Burley, Idaho 250
KORT Grangeville, Idaho 250
KRXK Rexburg, Idaho 1000
WJBC Bloomington, Ill. 1000
WQUA Moline, Ill. 1000
WHCO Sparta, Ill. 250
WJOB Hammond, Ind. 1000
WSAL Logansport, Ind. 1000
WTCJ Tell City, Ind. 1000
WBOW Terre Haute, Ind. 1000d
KFJB Marshalltown, Iowa 1000
WHIR Danville, Ky. 1000d
WHOP Hopkinsville, Ky. 1000
WMLF Pineville, Ky. 1000d
KLIC Monroe, La. 1000d
WSHO New Orleans, La. 1000
KSLO Opelousas, La. 250
WQDY Calais, Maine 250
WITH Baltimore, Md. 1000d
WCUM Cumberland, Md. 1000
WMNB No. Adams, Mass. 1000d
WESX Salem, Mass. 1000
WNEB Worcester, Mass. 1000
WJEF Grand Rapids, Mich. 1000
WIKB Iron River, Mich. 1000
WMPC Lapeer, Mich. 250
WSOO Sit. Ste. Marie, Mich. 1000
WSTR Sturgis, Mich. 1000d
WKLK Cloquet, Minn. 1000
KGHS Internat'l Falls, Minn. 100
KYSM Mankato, Minn. 250
KMRS Morris, Minn. 250
KTRF Thief Riv. Flls., Minn. 250
KWNO Winona, Minn. 1000d
WCMA Corinth, Miss. 1000

Kc.	Wave Length	W.P.
WHSY	Hattiesburg, Miss.	1000
WSSO	Starkville, Miss.	250
WAZF	Yazoo City, Miss.	250
KODE	Joplin, Mo.	1000
KLWT	Lebanon, Mo.	250
KNCM	Moberly, Mo.	1000
KBMN	Bozeman, Mont.	1000d
KXLO	Lewiston, Mont.	1000
KLCB	Libby, Mont.	250
KTNC	Falls City, Nebr.	100
KHAS	Hastings, Nebr.	250
KELY	Ely, Nev.	250
KLAS	Las Vegas, Nev.	250
KDOT	Reno, Nev.	250
WMOU	Berlin, N.H.	1000d
WTSV	Claremont, N.H.	1000
WCMC	Wildwood, N.J.	100
KALG	Alamogordo, N.Mex.	250
KOTS	Deming, N.Mex.	250
KYVA	Gallup, N.Mex.	250
KFUN	Las Vegas, N.Mex.	250
KRSY	Roswell, N.Mex.	250
WNIA	Cheektowaga, N.Y.	500
WENY	Elmira, N.Y.	1000
WHUC	Hudson, N.Y.	250
WLFH	Little Falls, N.Y.	250
WFAS	White Plains, N.Y.	250
WSKY	Asheville, N.C.	1000
WFAI	Fayetteville, N.C.	1000d
WMFR	High Point, N.C.	1000
WISP	Kinston, N.C.	1000d
WNNC	Newton, N.C.	250
WCBT	Roanoke Rap., N.C.	250
KDIX	Dickinson, N.Dak.	250
WCPO	Cincinnati, Ohio	250
WCOL	Columbus, Ohio	250
WIRO	Ironton, Ohio	250
WTOL	Toledo, Ohio	1000d
KADA	N. of Ada, Okla.	250
WBBZ	Ponca City, Okla.	250
KIAL	Astoria, Oreg.	250
KRNS	Burns, Oreg.	250
KOOS	Coos Bay, Oreg.	250
KGRO	Gresham, Oreg.	1000
KYJC	Medford, Oreg.	1000
KQIK	Lakeview, Oreg.	250
KTDO	Toledo, Oreg.	250
WBVP	Beaver Falls, Pa.	1000
WEEX	Easton, Pa.	250
WKBO	Harrisburg, Pa.	1000
WCRO	Johnstown, Pa.	1000
WBPZ	Lock Haven, Pa.	250
WTIV	Titusville, Pa.	500d
WNIK	Arecibo, P.R.	250
WERI	Westerly, R.I.	1000
WAIM	Anderson, S.C.	1000
WNOK	Columbia, S.C.	1000d
WOLS	Florence, S.C.	1000
KISD	Sioux Falls, S.Dak.	1000d
WAKI	McMinnville, Tenn.	1000
KSIX	Corpus Christi, Tex.	250
KDLK	Del Rio, Tex.	250
KNUZ	Houston, Tex.	1000
KERV	Kerrville, Tex.	250
KLVT	Levelland, Tex.	250
KEEE	Nacogdoches, Tex.	1000
KOSA	Odessa, Tex.	250
KHHH	Pampa, Tex.	250
KSEY	Seymour, Tex.	1000
KSST	Sulphur Sprgs., Tex.	250
KWTX	Waco, Tex.	1000d
KMUR	Murray, Utah	250
KOAL	Price, Utah	250
WJOY	Burlington, Vt.	1000
WBBI	Abingdon, Va.	1000d
WCFV	Clifton Forge, Va.	1000
WFVA	Fredericksburg, Va.	1000
WNOR	Norfolk, Va.	1000
KWYZ	Everett, Wash.	1000
KLYK	Spokane, Wash.	250
KREW	Sunnyside, Wash.	1000
WLOG	Logan, W.Va.	1000
WTAP	Parkersburg, W.Va.	1000
WHBY	Appleton, Wis.	250
WCLO	Janesville, Wis.	1000
WHVF	Wausau, Wis.	1000d
KVOC	Casper, Wyo.	1000

1240—241.8

Kc.	Wave Length	W.P.
CFLM	La Tuque, Que.	1000
CFNW	Norman Wells, Northwest Terr.	100
CFPR	Prince Rupert, B.C.	250
CJAV	Port Alberni, B.C.	250
CJCS	Stratford, Ont.	1000
CJRW	Summerside, P.E.I.	250
CKBS	St. Hyacinthe, Que.	250
CKCQ-1	Williams Lake, B.C.	250
CKLS	LaSarre, Que.	250
WEBJ	Brewton, Ala.	250
WULA	Eufaula, Ala.	250
WOWL	Florence, Ala.	1000
WARF	Jasper, Ala.	1000
KVRD	Cottonwood, Ariz.	250
KZOW	So. of Globe, Ariz.	1000
KOFA	Yuma, Ariz.	250
KVRC	Arkadelphia, Ark.	250
KWAK	Stuttgart, Ark.	250
KPLY	Crescent City, Calif.	250
KMBY	Monterey, Calif.	1000
KPPC	Pasadena, Calif.	100
KLOA	Ridgecrest, Calif.	250
KROY	Sacramento, Calif.	1000
KRNO	San Bernardino, California	1000d
KSON	San Diego, Calif.	250
KSMA	Santa Maria, Calif.	250
KSUE	Susanville, Calif.	1000
KRDD	Colo. Sprgs., Colo.	250
KDGO	Durango, Colo.	250
KSLV	Monte Vista, Colo.	1000
KCRT	Trinidad, Colo.	250
WWCO	Waterbury, Conn.	1000
WBGC	Chipley, Fla.	250
WLCO	Eustis, Fla.	250
WINK	Fort Myers, Fla.	250
WMMB	Melbourne, Fla.	1000
WFOY	St. Augustine, Fla.	1000
WBHB	Fitzgerald, Ga.	250
WDUN	Gainesville, Ga.	1000
WLAG	LaGrange, Ga.	1000
WBML	Macon, Ga.	1000
WWNS	Statesboro, Ga.	1000
WPAX	Thomasville, Ga.	250
WTWA	Thomson, Ga.	250
KLEI	Kailua, Hawaii	250
KVNI	Coeur d'Alene, Idaho	250
KFLT	Mountain Home, Idaho	250
KWIK	Pocatello, Idaho	250
WCRW	Chicago, Ill.	1000
WEDC	Chicago, Ill	1000d
WSBC	Chicago, Ill.	1000
WEBQ	Harrisburg, Ill.	250
WTAX	Springfield, Ill.	1000
WSDR	Sterling, Ill.	500d
WHBU	Anderson, Ind.	1000d
KDEC	Decorah, Iowa	250
KWLC	Decorah, Iowa	250
KBIZ	Ottumwa, Iowa	1000
KICD	Spencer, Iowa	1000
KIUL	Garden City, Kans.	1000
KAKE	Wichita, Kans.	250
WINN	Louisville, Ky.	250
WFTM	Maysville, Ky.	1000
WPKE	Pikeville, Ky.	1000d
WSFC	Somerset, Ky.	1000
KASO	Minden, La.	250
KANE	New Iberia, La.	250
WCOU	Lewiston, Maine	1000
WCEM	Cambridge, Md.	250
WJEJ	Hagerstown, Md.	1000
WHAI	Greenfield, Mass.	250
WOCB	W. Yarmouth, Mass.	1000
WATT	Cadillac, Mich.	250
WCBY	Cheboygan, Mich.	250
WJPD	Ishpeming, Mich.	1000
WJIM	Lansing, Mich.	1000d
WMFG	Hibbing, Minn.	1000
WJON	St. Cloud, Minn.	1000
WMPA	Aberdeen, Miss.	250
WGRM	Greenwood, Miss.	250
WGCM	Gulfport, Miss.	250
WMIS	Natchez, Miss.	250
KFMO	Flat River, Mo.	250
KWOS	Jefferson City, Mo.	1000d
KODE	Joplin, Mo.	1000d
KNEM	Nevada, Mo.	250
KBMY	Billings, Mont.	1000
KLTZ	Glasgow, Mont.	250
KBLL	Helena, Mont.	250
KFOR	Lincoln, Nebr.	1000
KODY	North Platte, Nebr.	1000
KELK	Elko, Nev.	1000
WSNJ	Bridgeton, N.J.	250
KAVE	Carlsbad, N.Mex.	250
KCLV	Clovis, N.Mex.	1000
WGBB	Freeport, N.Y.	250
WGVA	Geneva, N.Y.	1000d
WJTM	Jamestown, N.Y.	500d
WVOS	Liberty, N.Y.	250
WNBZ	Saranac Lake, N.Y.	1000
WSNY	Schenectady, N.Y.	1000d
WATN	Watertown, N.Y.	250
WPNF	Brevard, N.C.	250
WIST	Charlotte, N.C.	1000
WCNC	Elizabeth City, N.C.	1000d
WJNC	Jacksonville, N.C.	1000
WRAL	Raleigh, N.C.	1000
KDLR	Devils Lake, N.Dak.	250
WBBW	Youngstown, Ohio	1000
WHIZ	Zanesville, Ohio	250
KVSO	Ardmore, Okla.	250
KBEK	Elk City, Okla.	250
KBEL	Idabel, Okla.	250
KOKL	Okmulgee, Okla.	250
KFLY	Corvallis, Oreg.	1000d
KKID	Pendleton, Oreg.	1000
KPRB	Redmond, Oreg.	250
WRTA	Altoona, Pa.	1000
WHUM	Reading, Pa.	250
WKOK	Sunbury, Pa.	250
WBAX	Wilkes-Barre, Pa.	250
WALO	Humacao, P.R.	1000
WWON	Woonsocket, R.I.	1000
WKOK	Newberry, S.C.	250
WDXY	Sumter, S.C.	250
WBEJ	Elizabethton, Tenn.	1000
WEKR	Fayetteville, Tenn.	1000
WBIR	Knoxville, Tenn.	1000
WKDA	Nashville, Tenn.	1000
WENK	Union City, Tenn.	1000
KVLF	Alpine, Tex.	1000
KEAN	Brownwood, Tex.	1000
KORA	Bryan, Tex.	250
KOCA	Kilgore, Tex.	250
KSOX	Raymondville, Tex.	250
KCKG	Sonora, Tex.	250
KXOX	Sweetwater, Tex.	250
WSKI	Montpelier, Vt.	1000
WSSV	Petersburg, Va.	1000
WROV	Roanoke, Va.	1000
WTON	Staunton, Va.	1000
KXLE	Ellensburgh, Wash.	250
KGY	Olympia, Wash.	1000
WKOY	Bluefield, W.Va.	1000
WTIP	Charleston, W.Va.	1000
WDNE	Elkins, W.Va.	1000
WOMT	Manitowoc, Wis.	1000d
WIBU	Poynette, Wis.	1000d
WOBT	Rhinelander, Wis.	1000
WJMC	Rice Lake, Wis.	1000
KFBC	Cheyenne, Wyo.	1000
KLUK	Evanston, Wyo.	1000
KASL	Newcastle, Wyo.	250
KRAL	Rawlins, Wyo.	1000
KTHE	Thermopolis, Wyo.	1000

1250—239.9

Kc.	Wave Length	W.P.
CHWO	Oakville, Ont.	1000
CKBL	Matane, Que.	5000
CKOM	Saskatoon, Sask.	10000
WZOB	Ft. Payne, Ala.	1000d
WETU	Wetumpka, Ala.	5000d
KAKA	Wickenburg, Ariz.	500d
KWCX	Willcox, Ariz.	1000d
KFAY	Fayetteville, Ark.	1000d
KAJI	Little Rock, Ark.	1000
KHOT	Madera, Calif.	500d
KTMS	Santa Barbara, Calif.	1000
KDHI	Twenty-Nine Palms, California	1000d
KMSL	Ukiah, Calif.	500d
KICM	Golden, Colo.	1000d
WNER	Live Oak, Fla.	1000d
WRIM	Pahokee, Fla.	500d
WDAE	Tampa, Fla.	5000
WLYB	Albany, Ga.	1000d
WYTH	Madison, Ga.	1000d
WIZZ	Streator, Ill.	500d
WGL	Ft. Wayne, Ind.	1000
WRAY	Princeton, Ind.	1000d
KCFI	Cedar Falls, Iowa	500d
KFKU	Lawrence, Kans.	5000
WREN	Topeka, Kans.	5000
WNVL	Nicholasville, Ky.	500
WLCK	Scottsville, Ky.	500d
WGUY	Bangor, Maine	5000d
WARE	Ware, Mass.	1000
WWBC	Bay City, Mich.	1000d
KOTE	Fergus Falls, Minn.	1000
KCUE	Red Wing, Minn.	1000d
WHNY	McComb, Miss.	5000
KBTC	Houston, Mo.	500d
KHTN	Houston, Mo.	500d
WKBR	Manchester, N.H.	5000
WMTR	Morristown, N.J.	5000d
WIPS	Ticonderoga, N.Y.	1000d
WFAG	Farmville, N.C.	500d
WBRM	Marion, N.C.	1000d
WCHO	Washington Court House, Ohio	500d
KQEN	Roseburg, Oreg.	5000d
WLEM	Emporium, Pa.	1000d
WPEL	Montrose, Pa.	1000d
WRYT	Pittsburgh, Pa.	5000
WNOW	York, Pa.	1000d
WTMA	Charleston, S.C.	5000
WCKM	Winnsboro, S.C.	500d
WKBL	Covington, Tenn.	1000d
WNTT	Tazewell, Tenn.	500d
KFTV	Paris, Tex.	500d
KPAC	Port Arthur, Tex.	5000
KUKA	San Antonio, Tex.	500d
KTFO	Seminole, Tex.	1000d
KANN	Ogden, Utah	1000d
KVEL	Vernal, Utah	5000d
WDVA	Danville, Va.	5000
WYSR	Franklin, Va.	1000d
KWSC	Pullman, Wash.	5000
KTW	Seattle, Wash.	1000
WEMP	Milwaukee, Wis.	5000

1260—238.0

Kc.	Wave Length	W.P.
CFRN	Edmonton, Alta.	50000
DYBU	Cebu, P.I.	1000
WCRT	Birmingham, Ala.	5000d
KPIN	Casa Grande, Ariz.	1000d
KCCB	Corning, Ark.	500d
KBHC	Nashville, Ark.	500d
KGIL	San Fernando, Calif.	5000
KYA	San Francisco, Calif.	5000
KSNO	Aspen, Colo.	5000d
WMMM	Westport, Conn.	1000d
WNRK	Newark, Del.	500d
WWDC	Washington, D.C.	5000
WFTW	Fort Walton Beach, Florida	1000d
WAME	Miami, Fla.	5000d
WWPF	Palatka, Fla.	1000
WHAB	Baxley, Ga.	5000d
WBBK	Blakely, Ga.	1000d
WTJH	East Point, Ga.	5000d
KIFI	Idaho Falls, Idaho	5000
KWEI	Weiser, Ida.	1000d
WIBV	Belleville, Ill.	1000d
WFBM	Indianapolis, Ind.	5000
KFGQ	Boone, Iowa	1000d
KWHK	Hutchinson, Kans.	1000
WXOK	Baton Rouge, La.	1000d
WEZE	Boston, Mass.	5000
WALM	Albion, Mich.	1000
WJBL	Holland, Mich.	5000d
KRDX	Crookston, Minn.	1000
KDUZ	Hutchinson, Minn.	1000d
WGVM	Greenville, Miss.	5000d
WNSL	Laurel, Miss.	5000d
KGBX	Springfield, Mo.	5000
KIMB	Kimball, Nebr.	1000d
WBUD	Trenton, N.J.	5000
KVSF	Santa Fe, N.Mex.	1000
WBNR	Beacon, N.Y.	1000d
WNDR	Syracuse, N.Y.	5000
WGWR	Asheboro, N.C.	5000d
WCDJ	Edenton, N.C.	1000d
WDOK	Cleveland, Ohio	5000
WNXT	Portsmouth, Ohio	5000
KWSH	Wewoka-Seminole, Oklahoma	1000
KMCM	McMinnville, Oreg.	1000
WWYN	Erie, Pa.	5000
WPHB	Philipsburg, Pa.	5000d
WISO	Ponce, P.R.	1000
WMUU	Greenville, S.C.	5000d
WJOT	Lake City, S.C.	1000d
KWYR	Winner, S.Dak.	5000d
WNOO	Chattanooga, Tenn.	1000d
WMCH	Church Hill, Tenn.	1000d
WDKN	Dickson, Tenn.	1000d
WCLC	Jamestown, Tenn.	1000d
KSPL	Diboll, Tex.	1000d
KPSO	Falfurrias, Tex.	500d
KWFR	San Angelo, Tex.	1000d
KTUE	Tulia, Tex.	1000d
KTAE	Taylor, Tex.	1000d
WCHV	Charlottesville, Va.	5000
WBCR	Christiansburg, Va.	1000d
KWIQ	Moses Lake, Wash.	1000d
WVVW	Grafton, W.Va.	500d
WWIS	Black River Falls, Wis.	1000d
WEKZ	Monroe, Wis.	1000d
KPOW	Powell, Wyo.	5000

1270—236.1

Kc.	Wave Length	W.P.
CHAT	Medicine Hat, Alta.	10000
CHWK	Chilliwack, B.C.	10000
CJCB	Sydney, N.S.	5000
CFGT	St. Joseph d'Alma, Quebec	1000
WGSV	Guntersville, Ala.	1000d
WSIM	Prichard, Ala.	1000d
KBYR	Anchorage, Alaska	1000
KDJI	Holbrook, Ariz.	1000d
KADL	Pine Bluff, Ark.	5000d
KCOK	Tulare, Calif.	5000d
WNOG	Naples, Fla.	500d
WHIY	Orlando, Fla.	5000d
WTAL	Tallahassee, Fla.	5000
WKRW	Cartersville, Ga.	500d
WGBA	Columbus, Ga.	5000d
WJJC	Commerce, Ga.	1000d
KNDI	Honolulu, Hawaii	5000
KTFI	Twin Falls, Idaho	5000
WEIC	Charleston, Ill.	1000d
WHBF	Rock Island, Ill.	5000
WCMR	Elkhart, Ind.	5000
WWCA	Gary, Ind.	1000
WORX	Madison, Ind.	1000d
KSCB	Liberal, Kans.	1000
WAIN	Columbia, Ky.	1000d
WFUL	Fulton, Ky.	1000d
KVCL	Winnfield, La.	1000d
WSPR	Springfield, Mass.	5000
WXYZ	Detroit, Mich.	5000
KWEB	Rochester, Minn.	500d
WVOM	Iuka, Miss.	1000d
WLSM	Louisville, Miss.	1000d
KUSN	St. Joseph, Mo.	1000d
KBUB	Sparks, Nev.	1000d
WTSN	Dover, N.H.	5000
WDVL	Vineland, N.J.	500d
KRAC	Alamogordo, N.Mex.	1000d
WHLD	Niagara Falls, N.Y.	5000d
WDLA	Walton, N.Y.	1000d
WCGC	Belmont, N.C.	1000
WMPM	Smithfield, N.C.	5000d
KBOM	Mandan, N.Dak.	1000
WILE	Cambridge, Ohio	1000d
KWPR	Claremore, Okla.	500d
KAJO	Grants Pass, Oreg.	5000d
WLBR	Lebanon, Pa.	1000
WBHC	Hampton, S.C.	1000d
KNWC	Sioux Falls, S.Dak.	1000
WLIK	Newport, Tenn.	5000d
KIOX	Bay City, Tex.	1000
KHEM	Big Spring, Tex.	1000d
KEPS	Eagle Pass, Tex.	1000d
KFJZ	Fort Worth, Tex.	5000
WTID	Newport News, Va.	1000d
WHEO	Stuart, Va.	1000d
KCVL	Colville, Wash.	1000d
KBAM	Longview, Wash.	5000d
WKYR	Keyser, W.Va.	5000d
WRJC	Mauston, Wis.	500d

1280—234.2

Kc.	Wave Length	W.P.
CHIQ	Hamilton, Ont.	5000
CJMS	Montreal, Que.	10000
CKCV	Quebec, Que.	10000
CJSL	Estevan, Sask.	1000
WPID	Piedmont, Ala.	1000d
WNPT	Tuscaloosa, Ala.	5000
KHEP	Phoenix, Ariz.	1000d
KNBY	Newport, Ark.	1000d
KCGH	Arroyo Grande, Calif.	500d
KFOX	Long Beach, Calif.	1000
KCJH	San Luis Obispo, Cal.	500d
KJOY	Stockton, Calif.	1000
KTLN	Denver, Colo.	5000
WSUX	Seaford, Del.	1000d
WDSP	DeFuniak Springs, Florida	5000d
WQIK	Jacksonville, Fla.	5000d
WIPC	Lake Wales, Fla.	1000d
WYND	Sarasota, Fla.	500d
WIBB	Macon, Ga.	5000d
WMRO	Aurora, Ill.	1000d
WGBF	Evansville, Ind.	5000

Kc.	Wave Length	W.P.
KCDB	Newton, Iowa	1000d
KSDK	Arkansas City, Kans.	1000
WCPM	Cumberland, Ky.	1000d
WDSU	New Orleans, La.	5000
KWCL	Oak Grove, La.	500d
WEIM	Fitchburg, Mass.	5000
WFYC	Alma, Mich.	1000d
WTCN	Minneapolis, Minn.	5000
KVOX	Moorhead, Minn.	1000
KDKD	Clinton, Mo.	1000d
KYRO	Potosi, Mo.	500d
KCNI	Broken Bow, Nebr.	1000d
KTOO	Henderson, Nev.	5000d
KRZE	Farmington, N.Mex.	5000d
WADO	New York, N.Y.	5000
WROC	Rochester, N.Y.	5000d
WSAT	Salisbury, N.C.	1000
WYAL	Scotland Neck, N.C.	5000d
WONW	Defiance, Ohio	1000
WLMJ	Jackson, Ohio	1000d
KLCO	Poteau, Okla.	1000d
KERG	Eugene, Oreg.	5000
WBRX	Berwick, Pa.	500d
WHVR	Hanover, Pa.	5000
WKST	New Castle, Pa.	1000
WCMN	Arecibo, P.R.	5000
WANS	Anderson, S.C.	5000
WJAY	Mullins, S.C.	5000d
WMCP	Columbia, Tenn.	1000d
WDNT	Dayton, Tenn.	1000d
KNIT	Abilene, Tex.	500d
KWHI	Brenham, Tex.	1000d
KLUE	Longview, Tex.	1000d
KRAN	Morton, Tex.	500
KVWG	Pearsall, Tex.	500d
KNAK	Salt Lake City, Utah	5000
WKDE	Altavista, Va.	500d
WYVE	Wytheville, Va.	1000d
KUDY	Spokane, Wash.	5000d
KIT	Yakima, Wash.	5000
WVAR	Richwood, W.Va.	1000d
WNAM	Neenah, Wis.	5000

1290—232.4

CFAM	Altona, Man.	10000
CKSL	London, Ont.	5000
WTHG	Jackson, Ala.	1000d
WSHF	Sheffield, Ala.	1000d
WMLS	Sylacauga, Ala.	1000d
KEOS	Flagstaff, Ariz.	1000
KCUB	Tucson, Ariz.	1000
KDMS	El Dorado, Ark.	5000d
KUOA	Siloam Sprgs., Ark.	5000d
KHSL	Chico, Calif.	5000
KPER	Gilroy, Calif.	5000d
KMEN	San Bernardino, California	5000
KACL	Santa Barbara, Calif.	5000d
WCCC	Hartford, Conn.	500d
WTUX	Wilmington, Del.	1000d
WTMC	Ocala, Fla.	5000
WSCM	Panama City Beach, Florida	500d
WIRK	W. Palm Bch., Fla.	5000
WDEC	Americus, Ga.	1000d
WCHK	Canton, Ga.	1000d
WOKA	Douglas, Ga.	1000d
WTOC	Savannah, Ga.	5000
KSNN	Pocatello, Idaho	1000d
WIRL	Peoria, Ill.	5000
KPRT	Pratt, Kansas	5000
WCBL	Benton, Ky.	5000d
KJEF	Jennings, La.	1000d
WHGR	Houghton Lake, Mich.	5000
WNIL	Niles, Mich.	500d
WOIA	Saline, Mich.	500d
KBMO	Benson, Minn.	500d
WBLE	Batesville, Miss.	1000d
KALM	Thayer, Mo.	1000d
KGVO	Missoula, Mont.	5000
KOIL	Omaha, Nebr.	5000
WKNE	Keene, N.H.	5000
KSRC	Socorro, N.M.	1000d
WGLI	Babylon, N.Y.	1000
WNBF	Binghamton, N.Y.	5000
WHKY	Hickory, N.C.	5000
WEYE	Sanford, N.C.	1000d
WOMP	Bellaire, Ohio	1000d
WHIO	Dayton, Ohio	5000
KUMA	Pendleton, Oreg.	5000
KLIQ	Portland, Oreg.	5000d
WFBG	Altoona, Pa.	5000
WICE	Providence, R.I.	5000
WFIG	Sumter, S.C.	1000
WATO	Oak Ridge, Tenn.	5kw
KBLT	Big Lake, Tex.	1000d
KIVY	Crockett, Tex.	500d
KRGV	Weslaco, Tex.	5000
KTRN	Wichita Falls, Tex.	5000
WPVA	Colonial Hgts., Va.	5000d
WAGE	Leesburg, Va.	1000d
WKWS	Rocky Mount, Va.	1000d
WVOW	Logan, W.Va.	5000
KAPY	Port Angeles, Wash.	1000d
WMIL	Milwaukee, Wis.	1000d
WCOW	Sparta, Wis.	5000d
KOWB	Laramie, Wyo.	5000

1300—230.6

CBAF	Moncton, N.B.	5000
CJME	Regina, Sask.	1000
WBSA	Boaz, Ala.	1000d
WTLS	Tallassee, Ala.	1000d
WEZQ	Winfield, Ala.	5000
KWCB	Searcy, Ark.	1000d
KRDP	Brawley, Calif.	1000
KYNO	Fresno, Calif.	5000
KWKW	Pasadena, Calif.	1000
KVDR	Colo. Sprgs., Colo.	1000
WAVZ	New Haven, Conn.	1000
WRKT	Cocoa Beach, Fla.	500d
WFFG	Marathon, Fla.	500d
WSOL	Tampa, Fla.	5000d
WMTM	Moultrie, Ga.	5000d
WNEA	Newman, Ga.	500
WIMO	Winder, Ga.	1000d
KOZE	Lewiston, Idaho	5000
WTAQ	LaGrange, Ill.	1000
WFRX	W. Frankfort, Ill.	1000d
WHLT	Huntington, Ind.	500d
WMFT	Terre Haute, Ind.	500d
KGLO	Mason City, Iowa	5000
WBLG	Lexington, Ky.	1000
WIBR	Baton Rouge, La.	1000
KANB	Shreveport, La.	1000d
WFBR	Baltimore, Md.	5000
WJDA	Quincy, Mass.	1000d
WOOD	Grand Rapids, Mich.	5000
WRBC	Jackson, Miss.	5000
KMMO	Marshall, Mo.	1000d
KBRL	McCook, Nebr.	1000d
KPTL	Carson City, Nev.	5000
WAAT	Trenton, N.J.	250d
WDSC	Fulton, N.Y.	1000d
WEEE	Rensselaer, N.Y.	5000d
WGOL	Goldsboro, N.C.	1000d
WLNC	Laurensburg, N.C.	500
WSYD	Mt. Airy, N.C.	5000
WERE	Cleveland, Ohio	5000
WMVO	Mt. Vernon, Ohio	500
KOME	Tulsa, Okla.	5000
KDDV	Medford, Oreg.	5000d
KACI	The Dalles, Oreg.	1000d
WWCH	Clarion, Pa.	500d
WTHT	Hazleton, Pa.	1000d
WTIL	Mayaguez, P.R.	1000
WLOW	Aiken, S.C.	500wd
WCKI	Greer, S.C.	1000d
WKSC	Kershaw, S.C.	500d
WQIZ	St. George, S.C.	500d
KOLY	Mobridge, S.Dak.	1000d
WMTN	Morristown, Tenn.	5000d
WMAK	Nashville, Tenn.	5000
KVET	Austin, Tex.	1000
KTFY	Brownfield, Tex.	1000d
KGNS	Laredo, Tex.	500d
KKAS	Silsbee, Tex.	500d
KSTU	Logan, Utah	1000
KOL	Seattle, Wash.	5000
WCLG	Morgantown, W.Va.	1000d
WKLC	St. Albans, W.Va.	1000d

1310—228.9

CKDY	Ottawa, Ont.	50000
CFGM	Richmond Hill, Ont.	10000
WHEP	Foley, Ala.	1000d
CHGB	St. Anne-de-la-Pocatiere, Quebec	5000d
WJAM	Marion, Ala.	5000d
KBUZ	Mesa, Ariz.	5000
KBOK	Malvern, Ark.	1000d
KIOT	Barstow, Calif.	500d
KPOD	Crescent City, Calif.	1000d
KDIA	Oakland, Calif.	1000
KTKR	Taft, Calif.	1000d
KFKA	Greeley, Colo.	1000
WICH	Norwich, Conn.	5000
WDOO	Deland, Fla.	5000d
WAUC	Wauchula, Fla.	500d
WBRO	Waynesboro, Ga.	1000d
WBMK	West Point, Ga.	1000d
KNUI	Makawao, Hawaii	1000
KLIX	Twin Falls, Idaho	5000
WISH	Indianapolis, Ind.	5000
KDLS	Perry, Iowa	500d
KOKX	Keokuk, Iowa	1000d
WTTL	Madisonville, Ky.	500d
WDOC	Prestonsburg, Ky.	5000d
KIKS	Sulphur, La.	500d
KUZN	W. Monroe, La.	1000d
WLOB	Portland, Maine	1000d
WORC	Worcester, Mass.	5000
WKMH	Dearborn, Mich.	5000
WCCW	Traverse City, Mich.	1000d
KRBI	St. Peter, Minn.	1000d
WXXX	Hattiesburg, Miss.	1000d
KFSB	Joplin, Mo.	5000
KFBB	Great Falls, Mont.	5000
KGMT	Fairbury, Nebr.	500d
WJLK	Asbury Park, N.J.	250
WCAM	Camden, N.J.	250
KARA	Albuquerque, N.M.	1000d
WVIP	Mt. Kisco, N.Y.	5000d
WTLB	Utica, N.Y.	1000
WISE	Asheville, N.C.	5000
WKTC	Charlotte, N.C.	1000
WTIK	Durham, N.C.	1000
KNOX	Grand Forks, N.Dak.	5000
WFAH	Alliance, Ohio	1000d
KNPT	Newport, Oreg.	5000
WBFD	Bedford, Pa.	5000d
WGSA	Ephrata, Pa.	5000d
WNAE	Warren, Pa.	5000d
WDKD	Kingstree, S.C.	5000d
WDOD	Chattanooga, Tenn.	5000
WDXI	Jackson, Tenn.	5000
WBNT	Oneida, Tenn.	1000d
KZIP	Amarillo, Tex.	1000d
WRR	Dallas, Tex.	5000
KOYL	Odessa, Tex.	1000d
KUBO	San Antonio, Tex.	5000d
WEEL	Fairfax, Va.	1000
WGH	Newport News, Va.	5000
KARY	Prosser, Wash.	1000d
WIBA	Madison, Wis.	5000

1320—227.1

CHQM	Vancouver, B.C.	10000
CKEC	New Glasgow, N.S.	5000
CJSO	Sorel, P.Q.	1000
CKKW	Kitchener, Ont.	1000
WAGF	Dothan, Ala.	1000
WENN	Birmingham, Ala.	5000d
KBLU	Yuma, Ariz.	500d
KWHN	Fort Smith, Ark.	5000
KRLW	Walnut Ridge, Ark.	1000d
KHSJ	Hemet, Calif.	500d
KLAN	Lemoore, Calif.	1000d
KUDE	Oceanside, Calif.	500
KCRA	Sacramento, Calif.	5000
KAVI	Rocky Ford, Colo.	1000d
WATR	Waterbury, Conn.	5000
WGMA	Hollywood, Fla.	1000d
WZOK	Jacksonville, Fla.	5000
WAMR	Venice, Fla.	500d
WHIE	Griffin, Ga.	5000d
WKAN	Kankakee, Ill.	1000
KNIA	Knoxville, Iowa	500d
KMAQ	Maquoketa, Iowa	500d
KLWN	Lawrence, Kans.	500d
WBRT	Bardstown, Ky.	1000d
WNGO	Mayfield, Ky.	1000d
KHAL	Homer, La.	1000d
WICO	Salisbury, Md.	1000d
WARA	Attleboro, Mass.	1000
WILS	Lansing, Mich.	5000
WDMJ	Marquette, Mich.	1000
WRJW	Picayune, Miss.	5000d
KXLW	Clayton, Mo.	1000d
KDLT	Scottsbluff, Nebr.	5000
WWHG	Hornell, N.Y.	5000d
WQSR	Solvay, N.Y.	500d
WAGY	Forest City, N.C.	1000
WCOG	Greensboro, N.C.	5000
WKRK	Murphy, N.C.	5000d
WEEW	Washington, N.C.	500d
KQDY	Minot, N.Dak.	1000d
WHOK	Lancaster, Ohio	1000d
KWDE	Clinton, Okla.	1000d
KATR	Eugene, Ore.	1000d
WKAP	Allentown, Pa.	5000
WGET	Gettysburg, Pa.	1000
WJAS	Pittsburgh, Pa.	5000
WSCR	Scranton, Pa.	1000
WUNO	Rio Piedras, P.R.	5000
WOIC	Columbia, S.C.	1000
KELO	Sioux Falls, S.Dak.	5000
WKIN	Kingsport, Tenn.	5000d
WMSR	Manchester, Tenn.	5000d
KVMC	Colo. City, Tex.	1000d
KXYZ	Houston, Tex.	5000
KCPX	Salt Lake City, Utah	5000
WDMS	Lynchburg, Va.	1000
WEET	Richmond, Va.	1000d
KXRO	Aberdeen, Wash.	5000
KHIT	Walla Walla, Wash.	1000d
WQMN	Superior, Wis.	1000d
WFHR	Wisconsin Rapids, Wis.	5000

1330—225.4

WROS	Scottsboro, Ala.	1000d
KMOP	Tucson, Ariz.	500d
KVEE	Conway, Ark.	500d
KLPC	Lompoc, Calif.	1kd
KFAC	Los Angeles, Calif.	5000
KLBS	Los Banos, Calif.	500d
KAHR	Redding, Calif.	5000d
WARN	Ft. Pierce, Fla.	1000
WYSE	Lakeland, Fla.	1000d
WEBY	Milton, Fla.	5000d
WMEN	Tallahassee, Fla.	5000d
WMLT	Dublin, Ga.	5000d
WEAW	Evanston, Ill.	5000d
WRAM	Monmouth, Ill.	1000d
WRRR	Rockford, Ill.	1000d
WJPS	Evansville, Ind.	5000
KWWL	Waterloo, Iowa	5000
KFH	Wichita, Kans.	5000
WYGO	Corbin, Ky.	5000d
WMOR	Morehead, Ky.	1000d
KVOL	Lafayette, La.	1000
WASA	Havre de Grace, Md.	1000d
WCRB	Waltham, Mass.	5000
WTRX	Flint, Mich.	5000
WLOL	Minneapolis, Minn.	5000
WJPR	Greenville, Miss.	1000
WDAL	Meridian, Miss.	1000d
KUKU	Willow Springs, Mo.	1000d
KGAK	Gallup, N.Mex.	5000
WEVD	New York, N.Y.	5000
WPOW	New York, N.Y.	5000
WEBO	Owego, N.Y.	1000d
WHAZ	Troy, N.Y.	1000
WUSM	Havelock, N.C.	1000d
WHOT	Campbell, Ohio	500
WFIN	Findlay, Ohio	1000d
WKOV	Wellston, Ohio	500d
WELW	Willoughby, O.	500wd
KPOJ	Portland, Oreg.	5000
WBLF	Bellefonte, Pa.	500
WICU	Erie, Pa.	5000
WLAT	Conway, S.C.	5000d
WFBC	Greenville, S.C.	5000
WAEW	Crossville, Tenn.	1000d
WTRD	Dyersburg, Tenn.	500d
KMIL	Cameron, Tex.	500d
KSWA	Graham, Tex.	500d
KINE	Kingsville, Tex.	1000d
KVKM	Monahans, Tex.	5000
KDOK	Tyler, Tex.	1000d
WBTM	Danville, Va.	5000
WRAA	Luray, Va.	1000d
WOLD	Marion, Va.	1000d
WESR	Tasley, Va.	1000d
KFKF	Bellevue, Wash.	5000d
KCFA	Spokane, Wash.	5000d
WETZ	New Martinsville, W.Va.	1000d
WHBL	Sheboygan, Wis.	1000
KDVE	Lander, Wyo.	5000

1340—223.7

CFGB	Goose Bay, Nfld.	1000
CJAF	Cabano, Que.	250
CFSL	Weyburn, Sask.	1000
CFYK	Yellow Knife, N.W.T.	250
CHAD	Amos, Que.	250
CJLS	Yarmouth, N.S.	250
CHRD	Drummondville, Que.	250
CJQC	Quebec, Que.	250
CKAR-1	Parry Sound, Ont.	250
CKOX	Woodstock, Ont.	250
WKUL	Cullman, Ala.	250
WJOI	Florence, Ala.	1000
WGWC	Selma, Ala.	250
WFEB	Sylacauga, Ala.	250
KIBH	Seward, Alaska	250
KIKO	Miami, Ariz.	250
KKIT	Taos, N.M.	250
KNOG	Nogales, Ariz.	250
KPGE	Page, Ariz.	250
KENT	Prescott, Ariz.	250
KBTA	Batesville, Ark.	1000
KAAB	Hot Springs, Ark.	500
KBRS	Springdale, Ark.	250
KENL	Arcata, Calif.	250
KMAK	Fresno, Calif	1000
KDDL	Mojave, Calif.	100
KSFE	Needles, Calif.	250
KAOR	Oroville, Calif.	250
KATY	San Luis Obispo, California	1000
KIST	Santa Barbara, Calif.	1000
KOMY	Watsonville, Calif.	1000
KDEN	Denver, Colo.	250
KWSL	Grand Junction, Colo.	250
KVRH	Salida, Colo.	250
WNHC	New Haven, Conn.	1000
WOOK	Washington, D.C.	250
WSLC	Clermont, Fla.	250
WTAN	Clearwater, Fla.	250
WROD	Daytona Bch., Fla.	1000
WDSR	Lake City, Fla.	1000
WTYS	Marianna, Fla.	1000
WQXT	Palm Beach, Fla.	250
WSEB	Sebring, Fla.	250
WNSM	Valparaiso-Niceville, Fla.	250
WAKE	Atlanta, Ga.	1000
WGAU	Athens, Ga.	1000
WBBQ	Augusta, Ga.	1000
WGAA	Cedartown, Ga.	1000
WOKS	Columbus, Ga.	1000
WBBT	Lyons, Ga.	250
WTIF	Tifton, Ga.	1000
KAIN	Nampa, Idaho	1000
KPST	Preston, Idaho	250
KSKI	Sun Valley, Idaho	1000
WSOY	Decatur, Ill.	1000
WJPF	Herrin, Ill.	250
WJOL	Joliet, Ill.	250
WBIW	Bedford, Ind.	1000
WTRC	Elkhart, Ind.	1000
WLBC	Muncie, Ind.	1000
KROS	Clinton, Iowa	250
KLIL	Estherville, Iowa	100
KCKN	Kansas City, Kans.	1000d
KSEK	Pittsburg, Kans.	250
WCMI	Ashland, Ky.	250
WBGN	Bowling Green, Ky.	250
WNBS	Murray, Ky.	1000d
WEKY	Richmond, Ky.	250
KVOB	Bastrop, La.	250
KRMD	Shreveport, La.	250
WFAU	Augusta, Maine	1000
WHOU	Houlton, Maine	1000
WGAW	Gardner, Mass.	1000
WNBH	New Bedford, Mass.	1000
WBRK	Pittsfield, Mass.	1000
WLEW	Bad Axe, Mich.	250
WLAV	Grand Rap., Mich.	1000
WCSR	Hillsdale, Mich.	1000
WMTE	Manistee, Mich.	1000
WAGN	Menominee, Mich.	250
WMBN	Petoskey, Mich.	1000
WEXL	Royal Oak, Mich.	250
KDLM	Detroit Lakes, Minn.	1000
WEVE	Eveleth, Minn.	1000
KROC	Rochester, Minn.	1000
KWLM	Willmar, Minn.	1000
WJMB	Brookhaven, Miss.	250
WAML	Laurel, Miss.	250
KXEO	Mexico, Mo.	1000d
KLID	Poplar Bluff, Mo.	1000d
KSMO	Salem, Mo.	250
KICK	Springfield, Mo.	250
KCAP	Helena, Mont.	250
KPRK	Livingston, Mont.	250
KATL	Miles City, Mont.	1000
KQTE	Missoula, Mont.	250
KHUB	Fremont, Nebr.	500
KGFW	Kearney, Nebr.	1000
KSID	Sidney, Nebr.	1000
KORK	Las Vegas, Nev.	250
KBET	Reno, Nev.	1000

Kc.	Wave Length	W.P.
WDCR	Hanover, N.H.	1000
WMID	Atlantic City, N.J.	1000
KNDE	Aztec, N.Mex.	1000
KRRR	Ruidoso, N.Mex.	250
KKIT	Taos, N.Mex.	250
KSIL	Silver City, N.Mex.	1000
WMBO	Auburn, N.Y.	1000
WENT	Gloversville, N.Y.	1000
WXYJ	Jamestown, N.Y.	250
WUSJ	Lockport, N.Y.	250
WMSA	Massena, N.Y.	1000
WALL	Middletown, N.Y.	1000
WIRY	Plattsburgh, N.Y.	1000
WJRI	Lenoir, N.C.	1000
WTSB	Lumberton, N.C.	1000
WDXF	Oxford, N.C.	1000
WOOW	Greenville, N.C.	1000
WGNI	Wilmington, N.C.	1000
WAIR	Winston-Salem, N.C.	250
KGPC	Grafton, N.Dak.	1000
WNCO	Ashland, Ohio	250
WOUB	Athens, Ohio	250
WIZE	Springfield, Ohio	250
WSTV	Steubenville, Ohio	1000
KIHN	Hugo, Okla.	250
KOCY	Okla. City, Okla.	250
KTOW	Sand Springs, Okla.	250
KWVR	Enterprise, Oreg.	250
KIHR	Hood River, Oreg.	250
KFIR	North Bend, Oreg.	1000
WCVI	Connellsville, Pa.	1000d
WSAJ	Grove City, Pa.	100
WKRZ	Oil City, Pa.	1000
WHAT	Philadelphia, Pa.	1000
WRAW	Reading, Pa.	1000
WTRN	Tyrone, Pa.	250
WBRE	Wilkes-Barre, Pa.	1000
WWPA	Williamsport, Pa.	250
WGRF	Aguadilla, P.R.	250
WOKE	Charleston, S.C.	1000
WRHI	Rock Hill, S.C.	1000
WSSC	Sumter, S.C.	1000
KIJV	Huron, S.D.	250
KRSD	Rapid City, S.Dak.	1000
WBAC	Cleveland, Tenn.	250
WKRM	Columbia, Tenn.	1000
WGRV	Greeneville, Tenn.	250
WKGN	Knoxville, Tenn.	1000
WHHM	Memphis, Tenn.	1000d
WCDT	Winchester, Tenn.	1000
KWKC	Abilene, Tex.	250
KTSL	Burnett, Tex.	250
KAND	Corsicana, Tex.	250
KSET	El Paso, Tex.	250
KLBK	Lubbock, Tex.	250
KRBA	Lufkin, Tex.	250
KPDN	Pampa, Tex.	250
KOLE	Port Arthur, Tex.	250
KTEO	San Angelo, Tex.	250
WTWN	St. Johnsbury, Vt.	1000
WSTA	Charlotte Amalie, V.I.	250
WKEY	Covington, Va.	1000
WHAP	Hopewell, Va.	1000
WJMA	Orange, Va.	1000
KAGT	Anacortes, Wash.	250
KGRS	Pasco, Wash.	250
KAPA	Raymond, Wash.	250
KMEL	Wenatchee, Wash.	250
WHAR	Clarksburg, W.Va.	250
WEPM	Martinsburg, W.Va.	250
WMON	Montgomery, W.Va.	250
WOVE	Welch, W.Va.	1000
WLDY	Ladysmith, Wis.	1000
WRIT	Milwaukee, Wis.	1000d
KSGT	Jackson, Wyo.	250
KYCN	Wheatland, Wyo.	250
KWOR	Worland, Wyo.	250

1350—222.1

CHOV	Pembroke, Ont.	1000
CJLM	Joliette, Que.	1000
CKLB	Oshawa, Ont.	10000
CKEN	Kentville, N.S.	1000
WJWT	Demopolis, Ala.	5000d
WELB	Elba, Ala.	1000d
WGAD	Gadsden, Ala.	5000
KLYD	Bakersfield, Calif.	1000d
KCKC	San Bernardino, Calif.	500
KSRO	Santa Rosa, Calif.	5000
KGHF	Pueblo, Colo.	5000
WNLK	Norwalk, Conn.	1000
WINY	Putnam, Conn.	1000d
WEZY	Cocoa, Fla.	1000
WDCF	Dade City, Fla.	1000d
WBSG	Blackshear, Ga.	500d
WRWH	Cleveland, Ga.	1000d
WRPB	Warner Robins, Ga.	5000d
KRLC	Lewiston, Idaho	5000
WAAP	Peoria, Ill.	1000
WJBD	Salem, Ill.	500d
WIOU	Kokomo, Ind.	5000
KRNT	Des Moines, Iowa	5000
KMAN	Manhattan, Kans.	500d
WLOU	Louisville, Ky.	5000d
WSMB	New Orleans, La.	5000
WDEA	Ellsworth, Me.	1000d
WHMI	Howell, Mich.	500
KDIO	Ortonville, Minn.	1000d
WCMP	Pine City, Minn.	1000d
WKOZ	Kosciusko, Miss.	5000d
KCHR	Charleston, Mo.	1000d
KBRX	O'Neill, Nebr.	1000d
WLNH	Laconia, N.H.	5000d
WHWH	Princeton, N.J.	5000
KABQ	Albuquerque, N.M.	5000
WCBA	Corning, N.Y.	1000d
WRNY	Rome, N.Y.	500d
WBMT	Black Mountain, N.C.	500d
WHIP	Mooresville, N.C.	1000d
WLLY	Wilson, N.C.	1000d
KQDI	Bismarck, N.D.	500d
WADC	Akron, Ohio	5000
WCSM	Celina, Ohio	500d
WCHI	Chillicothe, Ohio	500d
KRHD	Duncan, Okla.	250
KTLQ	Tahlequah, Okla.	1000d
KRVC	Ashland, Oreg.	1000d
KLOO	Corvallis, Oreg.	1000d
WORK	York, Pa.	5000
WDAR	Darlington, S.C.	1000d
WGSW	Greenwood, S.C.	1000d
WRKM	Carthage, Tenn.	1000d
KCAR	Clarksville, Tex.	500d
KTXJ	Jasper, Tex.	1000d
KCOR	San Antonio, Tex.	5000
WBLT	Bedford, Va.	1000d
WFLS	Fredericksburg, Va.	500d
WNVA	Norton, Va.	5000d
WAVY	Portsmouth, Va.	5000
WPDR	Portage, Wis.	5000d

1360—220.4

WWWB	Jasper, Ala.	1000d
WLIQ	Mobile, Ala.	5000d
WMFC	Monroeville, Ala.	1000d
WELR	Roanoke, Ala.	1000d
KRUX	Glendale, Ariz.	5000
KLYR	Clarksville, Ark.	500d
KFFA	Helena, Ark.	1000
KFIV	Modesto, Calif.	1000
KRCK	Ridgecrest, Calif.	1000d
KGB	San Diego, Calif.	5000
KDEY	Boulder, Colo.	5000d
WDRC	Hartford, Conn.	5000
WOBS	Jacksonville, Fla.	5000d
WKAT	Miami Beach, Fla.	5000
WSFR	Sanford, Fla.	500d
WINT	Winter Haven, Fla.	1000d
WAZA	Bainbridge, Ga.	1000d
WLAW	Lawrenceville, Ga.	1000d
WMAC	Metter, Ga.	500d
WIYN	Rome, Ga.	500d
WLBK	DeKalb, Ill.	1000d
WVMC	Mt. Carmel, Ill.	500d
WGFA	Watseka, Ill.	1000d
KXGI	Ft. Madison, Iowa	1000d
KSCJ	Sioux City, Iowa	5000
KBTO	El Dorado, Kans.	500d
WFLW	Monticello, Ky.	1000d
KDBC	Mansfield, La.	1000d
KVIM	New Iberia, La.	1000d
KTLD	Tallulah, La.	500d
WEBB	Dundalk, Md.	5000d
WLYN	Lynn, Mass.	1000d
WWRO	Caro, Mich.	5000
WKMI	Kalamazoo, Mich.	5000
KLRS	Mountain Grove, Mo.	1000d
KWRV	McCook, Nebr.	1000d
WNNJ	Newton, N.J.	1000d
WWBZ	Vineland, N.J.	1000
WKOP	Binghamton, N.Y.	5000
WMNS	Olean, N.Y.	1000d
WCHL	Chapel Hill, N.C.	1000d
KEYZ	Williston, N.D.	5000
WSAI	Cincinnati, Ohio	5000
WWOW	Conneaut, Ohio	500d
KUIK	Hillsboro, Oreg.	1000d
WPQR	McKeesport, Pa.	5000
WPPA	Pottsville, Pa.	1000
WELP	Easley, S.C.	1000d
WLCM	Lancaster, S.C.	1000d
WNAH	Nashville, Tenn.	1000d
KRAY	Amarillo, Tex.	500d
KACT	Andrews, Tex.	1000d
KWBA	Baytown, Tex.	1000
KRYS	Corpus Christi, Tex.	1000
KXOL	Ft. Worth, Tex.	5000
WBOB	Galax, Va.	1000d
WHBG	Harrisonburg, Va.	5000d
KFDR	Grand Coulee, Wash.	1000d
KMO	Tacoma, Wash.	5000
WHJC	Matawan, W.Va.	1000d
WMOV	Ravenswood, W.Va.	1000d
WBAY	Green Bay, Wis.	5000
WISV	Viroqua, Wis.	1000
WMNE	Menomonie, Wis.	1000d
KVRS	Rock Springs, Wyo.	1000

1370—218.8

WBYE	Calera, Ala.	1000d
CFLV	Valleyfield, P.Q.	1000
KTPA	Prescott, Ark.	500d
KBUC	Corona, Calif.	1000
KEEN	San Jose, Calif.	5000
KGEN	Tulare, Calif.	1000d
WKMK	Blountstown, Fla.	500d
WKOS	Ocala, Fla.	5000d
WCOA	Pensacola, Fla.	5000
WAXE	Vero Beach, Fla.	1000d
WBGR	Jesup, Ga.	5000
WFDR	Manchester, Ga.	1000d
WKLE	Washington, Ga.	1000d
WPRC	Lincoln, Ill.	1000d
WTTS	Bloomington, Ind.	5000
WGRY	Gary, Ind.	1000d
KDTH	Dubuque, Iowa	5000
KGNO	Dodge City, Kans.	5000
KALN	Iola, Kans.	500d
WGOH	Grayson, Ky.	5000d
WTKY	Tompkinsville, Ky.	1000d
KAPB	Marksville, La.	1000d
WMHI	Braddocks Hts., Md.	500d
WKIK	Leonardtown, Md.	1000d
WGHN	Grand Haven, Mich.	500d
KSUM	Fairmont, Minn.	1000
WDOB	Canton, Miss.	1000d
KWRT	Boonville, Mo.	1000d
KCRV	Caruthersville, Mo.	1000d
KXLF	Butte, Mont.	5000
KAWL	York, Nebr.	500d
WFEA	Manchester, N.H.	5000
WALK	Patchogue, N.Y.	500d
WSAY	Rochester, N.Y.	5000
WLTC	Gastonia, N.C.	5000d
WTAB	Tabor City, N.C.	5000d
KFJM	Grand Forks, N.D.	1000d
WSPD	Toledo, Ohio	5000
KAST	Astoria, Oreg.	1000
WOTR	Corry, Pa.	1000
WPAZ	Pottstown, Pa.	1000d
WKMC	Roaring Sprgs., Pa.	1000d
WIVV	Vieques, P.R.	1000
WKFD	Wickford, R.I.	500d
WDEF	Chattanooga, Tenn.	5000
WDXE	Lawrenceburg, Tenn.	1000d
WRGS	Rogersville, Tenn.	1000d
KOKE	Austin, Tex.	1000d
KFRO	Longview, Tex.	1000
KUKO	Post, Tex.	500d
KSOP	Salt Lake City, Utah	1000d
WBTN	Bennington, Vt.	1000d
WHEE	Martinsville, Va.	5000d
WJWS	South Hill, Va.	5000d
KPOR	Quincy, Wash.	1000d
WMOD	Moundsville, W.Va.	1000d
WCCN	Neillsville, Wis.	5000d
KVWO	Cheyenne, Wyo.	1000

1380—217.3

CFDA	Victoriaville, Que.	1000
CKPC	Brantford, Ont.	10000
CKLC	Kingston, Ont.	5000
WRAB	Arab, Ala.	1000d
WGYV	Greenville, Ala.	1000d
KDXE	N. Little Rock, Ark.	1000d
KBVM	Lancaster, Calif.	1000d
KGMS	Sacramento, Calif.	1000
KSBW	Salinas, Calif.	5000
KFLJ	Walsenburg, Colo.	1000d
WAMS	Wilmington, Del.	5000
WLIZ	Lake Worth, Fla.	500d
WQXQ	Ormond Bch., Fla.	1000d
WLCY	St. Petersburg, Fla.	5000
WAOK	Atlanta, Ga.	5000
WSIZ	Ocilla, Ga.	5000d
KPOI	Honolulu, Hawaii	5000
WBEL	South Beloit, Ill.	5000
WBZI	Brazil, Ind.	500d
WKJG	Ft. Wayne, Ind.	5000
KCIM	Carroll, Iowa	1000
KHAK	Cedar Rapids, Iowa	1000
KCII	Washington, Iowa	500d
WMTA	Central City, Ky.	500d
WWKY	Winchester, Ky.	1000d
WYNK	Baton Rouge, La.	500d
WKTJ	Farmington, Me.	1000d
WTTH	Port Huron, Mich.	1000
WPLB	Greenville, Mich.	500d
KLIZ	Brainerd, Minn.	1000d
KAGE	Winona, Minn.	1000
WDLT	Indianola, Miss.	500d
KUDL	Kansas City, Mo.	5000
KWK	St. Louis, Mo.	5000
KUVR	Holdredge, Nebr.	500
WBBX	Portsmouth, N.H.	1000
WAWZ	Zarephath, N.J.	5000
WFSR	Bath, N.Y.	500d
WBNX	New York, N.Y.	5000
WLOS	Asheville, N.C.	5000
WTOB	Winston-Salem, N.C.	5000
WWIZ	Lorain, Ohio	500d
WPKO	Waverly, Ohio	1000d
KSWO	Lawton, Okla.	1000
KMUS	Muskogee, Okla.	1000
KBCH	Ocean Lake, Oreg.	1000d
KSRV	Ontario, Oreg.	5000
WACB	Kittanning, Pa.	1000d
WMLP	Milton, Pa.	1000d
WAYZ	Waynesboro, Pa.	1000d
WNRI	Woonsocket, R.I.	1000d
WAGS	Bishopville, S.C.	1000d
WGUS	N. Augusta, S.C.	1000d
KOTA	Rapid City, S.Dak.	5000
KFCB	Redfield, S.Dak.	500d
WYSH	Clinton, Tenn.	1000d
WGMM	Millington, Tenn.	500d
KJET	Beaumont, Tex.	1000
KBWD	Brownwood, Tex.	1000
KCRM	Crane, Tex.	1000d
KTSM	El Paso, Tex.	5000
KMUL	Muleshoe, Tex.	1000d
KBOP	Pleasanton, Tex.	1000d
WSYB	Rutland, Vt.	5000
WMBG	Richmond, Va.	5000
KRKO	Everett, Wash.	5000
KPEG	Spokane, Wash.	5000d
WMTD	Hinton, W.Va.	1000d
WBEL	Beloit, Wis.	5000

1390—215.7

CKLN	Nelson, B.C.	1000
WHMA	Anniston, Ala.	5000
KDQN	DeQueen, Ark.	500d
KAMO	Rogers, Ark.	1000d
KGER	Long Beach, Calif.	5000
KCEY	Turlock, Calif.	5000
KFML	Denver, Colo.	1000d
WAVP	Avon Park, Fla.	1000d
WPUP	Gainesville, Fla.	5000d
WGES	Chicago, Ill.	5000
WYNR	Chicago, Ill.	5000
WFIW	Fairfield, Ill.	1000
WJCD	Seymour, Ind.	1000d
KCLN	Clinton, Iowa	1000d
KCBC	Des Moines, Iowa	1000
KNCK	Concordia, Kans.	500d
WANY	Albany, Ky.	1000d
WKIC	Hazard, Ky.	5000d
KFRA	Franklin, La.	500d
WEGP	Presque Isle, Me.	5000d
KJPW	Waynesville, Mo.	1000d
WCAT	Orange, Mass.	1000d
WPLM	Plymouth, Mass.	5000
WCER	Charlotte, Mich.	1000d
KAOH	Duluth, Minn.	500
KRFO	Owatonna, Minn.	500d
WROA	Gulfport, Miss.	1000d
WQIC	Meridian, Miss.	5000d
KJPW	Waynesville, Mo.	1000d
KENN	Farmington, N.Mex.	5000
KHOB	Hobbs, N.Mex.	5000d
WEOK	Poughkeepsie, N.Y.	5000d
WRIV	Riverhead, N.Y.	1000d
WFBL	Syracuse, N.Y.	5000
WEED	Rocky Mount, N.C.	5000
WADA	Shelby, N.C.	500d
WJRM	Troy, N.C.	500d
KLPM	Minot, N.Dak.	5000
WOHP	Bellefontaine, Ohio	500d
WMPO	Middleport-Pomroy, Ohio	1000d
WFMJ	Youngstown, Ohio	5000
KCRC	Enid, Okla.	1000
KSLM	Salem, Oreg.	5000
WLAN	Lancaster, Pa.	5000
WRSC	State College, Pa.	1000d
WISA	Isabella, P.R.	1000
WHPB	Belton, S.C.	500d
WCSC	Charleston, S.C.	5000
KJAM	Madison, S.D.	500d
WTJS	Jackson, Tenn.	5000
KULP	El Campo, Tex.	500d
KBEC	Waxahachie, Tex.	500d
KLGN	Logan, Utah	1000
WEAM	Arlington, Va.	5000
WWOD	Lynchburg, Va.	5000
KBBO	Yakima, Wash.	1000

1400—214.2

CKDH	Amherst, N.S.	250
CJFP	Riviere-du-Loup, Que.	1000
CKRN	Rouyn, Que.	250
CKSW	Swift Current, Sask.	1000
WMSL	Decatur, Ala.	250
WXAL	Demopolis, Ala.	1000d
WFPA	Ft. Payne, Ala.	250
WJLD	Homewood, Ala.	1000
WJHO	Opelika, Ala.	1000
KSEW	Sitka, Alaska	250
KCLF	Clifton, Ariz.	250
KJKJ	Flagstaff, Ariz.	250
KXIV	Phoenix, Ariz.	250
KTUC	Tucson, Ariz.	250
KVOY	Yuma, Ariz.	250
KELD	El Dorado, Ark.	1000
KCLA	Pine Bluff, Ark.	1000
KWYN	Wynne, Ark.	1000
KRE	Berkeley, Calif.	1000
KREO	Indio, Calif.	250
KQMS	Redding, Calif.	250
KSLY	San Luis Obispo, Cal.	250
KSPA	Santa Paula, Calif.	250
KHOE	Truckee, Calif.	1000
KUKI	Ukiah, Calif.	1000
KONG	Visalia, Calif.	250
KRLN	Canon City, Colo.	250
KDTA	Delta, Colo.	250
KFTM	Ft. Morgan, Colo.	250
KBZZ	La Junta, Colo.	250
WSTC	Stamford, Conn.	1000
WILI	Willimantic, Conn.	1000
WFTL	Ft. Lauderdale, Fla.	250
WIRA	Ft. Pierce, Fla.	250
WRHC	Jacksonville, Fla.	250
WPRY	Perry, Fla.	250
WTRR	Sanford, Fla.	1000
WZRH	Zephyr Hills, Fla.	250
WCQS	Alma, Ga.	1000
WSGC	Elberton, Ga.	1000
WNEX	Macon, Ga.	1000
WMGA	Moultrie, Ga.	1000
WCOH	Newnan, Ga.	1000
WGSA	Savannah, Ga.	1000
KART	Jerome, Idaho	250
KRPL	Moscow, Idaho	250
KSPT	Sandpoint, Idaho	250
WDWS	Champaign, Ill.	1000
WGIL	Galesburg, Ill.	1000
WROZ	Evansville, Ind.	1000
WBAT	Marion, Ind.	500
KCOG	Centerville, Iowa	100
KVFD	Fort Dodge, Iowa	250
KVOE	Emporia, Kans.	250
KAYS	Hays, Kans.	250
WCYN	Cynthiana, Ky.	250
WIEL	Elizabethtown, Ky.	1000
WFTG	London, Ky.	250
WFPR	Hammond, La.	250
KAOK	Lake Charles, La.	1000
WRDO	Augusta, Maine	1000d
WIDE	Biddeford, Maine	1000
WWIN	Baltimore, Md.	250
WALE	Fall River, Mass.	5000
WLLH	Lowell, Mass.	500
WHMP	Northampton, Mass.	1000
WELL	Battle Creek, Mich.	1000
WJLB	Detroit, Mich.	1000d

Kc. Wave Length W.P.

WHDF Houghton, Mich. 250
WMAB Munising, Mich. 250
WSAM Saginaw, Mich. 250
WSJM St. Joseph, Mich. 1000
WTCM Traverse City, Mich. 250
KEYL Long Prairie, Minn. 250
KMHL Marshall, Minn. 250
KTWN Mpls.-St. Paul, Minn. 1000
WHLB Virginia, Minn. 1000
WBIP Booneville, Miss. 250
WNAG Grenada, Miss. 250
WFOR Hattiesburg, Miss. 250
WJQS Jackson, Miss. 250
WMBC Macon, Miss. 250
KFRU Columbia, Mo. 1000
KJCF Festus, Mo. 250
KSIM Sikeston, Mo. 250
KTTS Springfield, Mo. 1000
KXGN Glendive, Mont. 250
KARR Great Falls, Mont. 1000
KCOW Alliance, Nebr. 1000
KLIN Lincoln, Nebr. 250
KBMI Henderson, Nev. 250
KWNA Winnemucca, Nev. 1000
WBRL Berlin, N.H. 250
WTSL Hanover, N.H. 1000
KTRC Santa Fe, N.Mex. 250
KCHS Truth or Consequences, New Mexico 250
KTNM Tucumcari, N.Mex. 250
WOND Pleasantville, N.J. 1000
WABY Albany, N.Y. 250
WYSL Buffalo, N.Y. 1000d
WSLB Ogdensburg, N.Y. 1000
WBMA Beaufort, N.C. 250
WGBG Greensboro, N.C. 1000
WSIC Statesville, N.C. 1000
WLSE Wallace, N.C. 250
WHCC Waynesville, N.C. 1000
WCNF Weldon, N.C. 1000d
KEYJ Jamestown, N.Dak. 1000
WMAN Mansfield, Ohio 1000d
WPAY Portsmouth, Ohio 1000
KWON Bartlesville, Okla. 250
KTMC McAlester, Okla. 250
KNOR Norman, Okla. 250
KNND Cottage Grove, Oreg. 1000d
WEST Easton, Pa. 1000
WJET Erie, Pa. 250
WHGB Harrisburg, Pa. 1000d
WKBI St. Marys, Pa. 1000
WICK Scranton, Pa. 250
WRAK Williamsport, Pa. 1000
WCOS Columbia, S.C. 1000
WGTN Georgetown, S.C. 250
WZOO Spartanburg, S.C. 1000d
WJZM Clarksville, Tenn. 1000
WHUB Cookeville, Tenn. 1000
WLSB Copper Hill, Tenn. 250
WGAP Maryville, Tenn. 1000d
WHAL Shelbyville, Tenn. 1000
KRUN Ballinger, Tex. 250
KBYG Big Spring, Tex. 250
KUNO Corpus Christi, Tex. 250
KILE nr. Galveston, Tex. 250
KGVL Greenville, Tex. 250
KEBE Jacksonville, Tex. 250
KIUN Pecos, Tex. 250
KEYE Perryton, Tex. 250
KVOP Plainview, Tex. 250
KDWT Stamford, Tex. 250
KTEM Temple, Tex. 250
KTFS Texarkana, Tex. 250
KVOU Uvalde, Tex. 250
KIXX Provo, Utah 250
WDOT Burlington, Vt. 250
WINA Charlottesville, Va. 1000
WHHV Hillsville, Va. 250
WHIH Portsmouth, Va. 250
WHLF So. Boston, Va. 1000
WINC Winchester, Va. 1000
KEDO Longview, Wash. 250
KRSC Othello, Wash. 250
KTNT Tacoma, Wash. 1000
WBOY Clarksburg, W.Va. 1000
WRON Ronceverte, W.Va. 1000
WSPZ Spencer, W.Va. 1000
WKWK Wheeling, W.Va. 250
WBTH Williamson, W.Va. 1000
WATW Ashland, Wis. 1000
WBIZ Eau Claire, Wis. 1000
WDUZ Green Bay, Wis. 1000
WRJN Racine, Wis. 1000
WRDB Reedsburg, Wis. 1000
WRIG Wausau, Wis. 1000
KATI Casper, Wyo. 1000
KODI Cody, Wyo. 1000

1410—212.6

CFUN Vancouver, B.C. 10000
CHLP Montreal, Que. 10000
WALA Mobile, Ala. 5000
WRCK Tuscumbia, Ala. 500d
KTCS Fort Smith, Ark. 1000
KERN Bakersfield, Calif. 1000
KRML Carmel, Calif. 500d
KKOK Lompoc, Calif. 500d
KMYC Marysville, Calif. 5000
KCAL Redlands, Calif. 1000d
KCOL Ft. Collins, Colo. 1000
WPOP Hartford, Conn. 5000
WDOV Dover, Del. 5000d
WMYR Fort Myers, Fla. 5000
WBIL Leesburg, Fla. 1000d
WRFB Tallahassee, Fla. 5000d

Kc. Wave Length W.P.

WRIX Griffin, Ga. 1000d
WSNE Cummings, Ga. 1000d
WDAX McRae, Ga. 1000d
WLAQ Rome, Ga. 1000
WRMN Elgin, Ill. 1000d
WTIM Taylorville, Ill. 1000d
WAZY Lafayette, Ind. 1000d
KGRN Grinnell, Iowa 500d
KLEM LeMars, Iowa 1000d
KCLO Leavenworth, Kans. 5000d
KWBB Wichita, Kans. 5000
WLBJ Bowling Green, Ky. 5000
WHLN Harlan, Ky. 5000d
KDBS Alexandria, La. 1000d
WDDW Halfway, Md. 1000d
WHAG Halfway, Md. 1000d
WOKW Brockton, Mass. 1000d
WGRD Grand Rap., Mich. 1000d
KLFD Litchfield, Minn. 500d
WDSK Cleveland, Miss. 1000d
WBKN Newton, Miss. 500d
KNOP N. Platte, Nebr. 1000d
WHTG Eatontown, N.J. 500d
WDOE Dunkirk, N.Y. 1000
WELM Elmira, N.Y. 1000
WSET Glen Falls, N.Y. 1000d
WOTT Watertown, N.Y. 5000
WEGO Concord, N.C. 1000d
WSRC Durham, N.C. 1000d
WING Dayton, Ohio 5000
KPAM Portland, Oreg. 5000d
WLSH Lansford, Pa. 5000d
KQV Pittsburgh, Pa. 5000
WPCC Clinton, S.C. 1000d
WYMB Manning, S.C. 1000d
WCMT Martin, Tenn. 1000d
KBUD Athens, Tex. 1000d
KBAN Bowie, Tex. 500d
KVLB Cleveland, Tex. 500
KXIT Dalhart, Tex. 500d
KADO Marshall, Tex. 500
KRIG Odessa, Tex. 1000
KBAL San Saba, Tex. 500d
KNAL Victoria, Tex. 500
WRIS Roanoke, Va. 5000d
WKBH LaCrosse, Wis. 5000
KWYO Sheridan, Wyo. 1000

1420—211.1

CKPT Peterborough, Ont. 1000
CJMT Chicoutimi, Que. 1000
WACT Tuscaloosa, Ala. 5000d
KHFH Sierra Vista, Ariz. 1000d
KPOC Pocahontas, Ark. 1000d
KSTN Stockton, Calif. 5000
WLIS Old Saybrook, Conn. 500d
WBRD Bradenton, Fla. 1000
WDBF Delray Beach, Fla. 5000d
WETH St. Augustine, Fla. 1000d
WRFB Tallahassee, Fla. 5000d
WAVO Avondale Estates, Ga. 1000d
WRBL Columbus, Ga. 5000
WPEH Louisville, Ga. 1000d
WLET Toccoa, Ga. 5000d
WINI Murphysboro, Ill. 500d
WIMS Michigan City, Ind. 5000d
WOC Davenport, Iowa 5000
KJCK Junction City, Kans. 1000d
WTCR Ashland, Ky. 5000d
WHBN Harrodsburg, Ky. 1000d
WVJS Owensboro, Ky. 5000
KPEL Lafayette, La. 1000
WOKW Brockton, Mass. 1000d
WBSM New Bedford, Mass. 5000
WBEC Pittsfield, Mass. 1000
WAMM Flint, Mich. 1000d
WKPR Kalamazoo, Mich. 1000d
KTOE Mankato, Minn. 5000
WSUH Oxford, Miss. 1000d
WQBC Vicksburg, Miss. 1000
KBTN Neosho, Mo. 500d
KOOO Omaha, Nebr. 1000d
KSYX Santa Rosa, N.Mex. 1000d
WALY Herkimer, N.Y. 1000d
WACK Newark, N.Y. 500
WLNA Peekskill, N.Y. 1000d
WMYN Mayodan, N.C. 500
WGAS S. Gastonia, N.C. 500d
WVOT Wilson, N.C. 1000
WHK Cleveland, Ohio 5000
KTJS Hobart, Okla. 1000d
KYNG Coos Bay, Oreg. 1000d
WCOJ Coatesville, Pa. 5000
WCED DuBois, Pa. 5000
WEUC Ponce, P.R. 1000
WCRE Cheraw, S.C. 1000d
KABR Aberdeen, S.D. 1000d
WEMB Erwin, Tenn. 5000d
WKSR Pulaski, Tenn. 1000
KFYN Bonham, Tex. 250d
KTRE Lufkin, Tex. 1000
KGNB New Braunfels, Tex. 1000d
KPEP San Angelo, Tex. 1000d
WWSR St. Albans, Vt. 1000d
WDDY Gloucester, Va. 1000d
WKCW Warrenton, Va. 5000d
KITI Chehalis, Wash. 1000d
KUJ Walla Walla, Wash. 5000
WPLY Plymouth, Wis. 500d

1430—209.7

CKFH Toronto, Ont. 10000
WFHK Pell City, Ala. 1000d
KHBM Monticello, Ark. 1000d
KAMP El Centro, Calif. 1000d
KARM Fresno, Calif. 5000
KALI Pasadena, Calif. 5000

Kc. Wave Length W.P.

KJAY Sacramento, Calif. 500d
KOSI Aurora, Colo. 5000
WSDB Homestead, Fla. 500d
WLAK Lakeland, Fla. 5000
WPCF Panama City, Fla. 5000
WGFS Covington, Ga. 1000d
WRCD Dalton, Ga. 1000d
WWGS Tifton, Ga. 5000
WNSH Highland Park, Ill. 1000d
WCMY Ottawa, Ill. 500d
WIRE Indianapolis, Ind. 5000
KASI Ames, Iowa 1000d
KMRC Morgan City, La. 500d
WNAV Annapolis, Md. 5000
WHIL Medford, Mass. 5000d
WION Ionia, Mich. 5000d
WBRB Mt. Clemens, Mich. 500d
WLAU Laurel, Miss. 5000d
KAOL Carrollton, Mo. 500d
WIL St. Louis, Mo. 5000
KRGI Grand Island, Nebr. 5000
WNJR Newark, N.J. 5000
KGFL Roswell, N.M. 5000d
WENE Endicott, N.Y. 5000
WMNC Morganton, N.C. 5000d
WDJS Mt. Olive, N.C. 1000d
WRXO Roxboro, N.C. 1000d
WFOB Fostoria, Ohio 1000
WCLT Newark, Ohio 500d
KALV Alva, Okla. 500
KELI Tulsa, Okla. 5000
KGAY Salem, Oreg. 5000d
WVAM Altoona, Pa. 1000
WFRA Franklin, Pa. 500d
WNEL Caguas, P.R. 1000
WBLR Batesburg, S.C. 5000d
WATP Marion, S.C. 1000d
KBRK Brookings, S. Dak. 1000d
WFCT Fountain City, Tenn. 1000d
WENO Madison, Tenn. 5000d
WHER Memphis, Tenn. 1000
KSTB Breckenridge, Tex. 1000d
KEES Gladewater, Tex. 1000d
KCOH Houston, Tex. 1000d
KLO Ogden, Utah 5000
WIVE Ashland, Va. 1000d
WDIC Clincho, Va. 1000d
KBRC Mt. Vernon, Wash. 5000
WEIR Weirton, W.Va. 1000
WBEV Beaver Dam, Wis. 1000d

1440—208.2

CFCP Courtenay, B.C. 1000
WHHY Montgomery, Ala. 5000
KWBY Scottsdale, Ariz. 5000d
KHOG Fayetteville, Ark. 1000d
KOKY Little Rock, Ark. 5000d
KVON Napa, Calif. 500
KPRO Riverside, Calif. 1000
KCOY Santa Maria, Calif. 1000
WBIS Bristol, Conn. 500d
WABR Winter Park, Fla. 5000
WWCC Bremen, Ga. 1000d
WGIG Brunswick, Ga. 5000
WRAJ Anna, Ill. 500d
WIOK Normal, Ill. 1000
WPRS Paris, Ill. 1000d
WGEM Quincy, Ill. 5000
WROK Rockford, Ill. 5000
WPGW Portland, Ind. 500d
KCHE Cherokee, Iowa 500d
KEWI Topeka, Kans. 5000
WCDS Glasgow, Ky. 1kwd
WKLX Paris, Ky. 1000d
WEZJ Williamsburg, Ky. 1000d
KMLB Monroe, La. 5000
WJAB Westbrook, Me. 5000d
WAAB Worcester, Mass. 5000
WBCM Bay City, Mich. 1000
WDOW Dowagiac, Mich. 1000d
WCHB Inkster, Mich. 1000d
KEVE Golden Valley, Minn. 5000
WHHT Lucedale, Miss. 1000d
WSEL Pontotoc, Miss. 1000d
WMVB Millville, N.J. 1000d
WBAB Babylon, N.Y. 1000d
WJJL Niagara Falls, N.Y. 1000d
WSGO Oswego, N.Y. 1000d
WBLA Elizabethtown, N.C. 1000d
WBUY Lexington, N.C. 5000d
KILO Grand Forks, N.D. 1000
WHHH Warren, Ohio 5000
KMED Medford, Oreg. 5000
KODL The Dalles, Oreg. 1000
WCDL Carbondale, Pa. 5000d
WNPV Lansdale, Pa. 500d
WGCB Red Lion, Pa. 1000d
WQOK Greenville, S.C. 5000
WHHL Holly Hill, S.C. 1kwd
WZYX Cowan, Tenn. 1000d
WHDM McKenzie, Tenn. 500d
KFDA Amarillo, Tex. 5000
KEYS Corpus Christi, Tex. 1000
KDNT Denton, Tex. 5000
KETX Livingston, Tex. 5000d
WKLV Blackstone, Va. 5000d
WHIS Bluefield, W.Va. 5000
WAJR Morgantown, W.Va. 5000
WJPG Green Bay, Wis. 5000

1450—206.8

CFBM Brochet, Man. 100
CBG Gander, Nfld. 250
CFAB Windsor, N.S. 250
CFJR Brockville, Ont. 1000
CHEF Granby, P.Q. 1000
WDNG Anniston, Ala. 1000

Kc. Wave Length W.P.

WYAM Bessemer, Ala. 1000
WDIG Dothan, Ala. 1000
WFIX Huntsville, Ala. 1000
WLAY Muscle Shoals City, Alabama 1000
KLAM Cordova, Alaska 250
KAWT Douglas, Ariz. 250
KNOT Prescott, Ariz. 250
KOLD Tucson, Ariz. 250
KENA Mena, Ark. 250
KYOR Blythe, Calif. 250
KOWN Escondido, Calif. 250
KPAL Palm Springs, Calif. 250
KTIP Porterville, Calif. 1000
KSAN San Francisco, Calif. 1000
KVML Sonora, Calif. 250
KVEN Ventura, Calif. 1000
KAGR Yuba City, Calif. 100
KGIW Alamosa, Colo. 250
KYOU Greeley, Colo. 1000
WNAB Bridgeport, Conn. 250
WILM Wilmington, Del. 250
WOL Washington, D.C. 250
WWJB Brooksville, Fla. 250
WMFJ Daytona Beach, Fla. 1000
WSKP Miami, Fla. 250
WBSR Pensacola, Fla. 1000
WSPB Sarasota, Fla. 1000
WSTU Stuart, Fla. 250
WTNT Tallahassee, Fla. 1000
WGPC Albany, Ga. 250
WBHF Cartersville, Ga. 1000
WCON Cornelia, Ga. 250
WKEU Griffin, Ga. 1000
WMVG Milledgeville, Ga. 1000
WBYG Savannah, Ga. 1000
WVLD Valdosta, Ga. 1000
KEOK Payette, Idaho 250
KEEP Twin Falls, Idaho 250
WHFC Cicero, Ill. 1000
WKEI Kewanee, Ill. 100
WCVS Springfield, Ill. 1000
WANE Ft. Wayne, Ind. 500
WXVW Jeffersonville, Ind. 250
WASK Lafayette, Ind. 1000
WAOV Vincennes, Ind. 250
KLWN Cedar Rapids, Iowa 250
KWBW Hutchinson, Kans. 1000
WTCO Campbellsville, Ky. 1000
WWXL Manchester, Ky. 1000
WPAD Paducah, Ky. 1000
KSIG Crowley, La. 1000
KNOC Natchitoches, La. 1000
WNPS New Orleans, La. 250
WRKD Rockland, Maine 250
WKTQ South Paris, Maine 250
WTBO Cumberland, Md. 1000
WMAS Springfield, Mass. 1000
WATZ Alpena Township, Michigan 1000
WHTC Holland, Mich. 1000
WMIQ Iron Mtn., Mich. 250
WIBM Jackson, Mich. 1000
WKLA Ludington, Mich. 250
WHLS Port Huron, Mich. 250
KATE Albert Lea, Minn. 250
KBUN Bemidji, Minn. 1000
KBMW Breckenridge, Minn. 250
WELY Ely, Minn. 1000
KFAM St. Cloud, Minn. 1000
WROX Clarksdale, Miss. 250
WCJU Columbia, Miss. 250
WJXN Jackson, Miss. 250
WOKK Meridian, Miss. 1000
WNAT Natchez, Miss. 250
WROB West Point, Miss. 250
KFTW Fredericktown, Mo. 250
WMBH Joplin, Mo. 1000
KIRX Kirksville, Mo. 1000
KOKO Warrensburg, Mo. 250
KWPM West Plains, Mo. 1000
KXXL Bozeman, Mont. 1000
KUDI Great Falls, Mont. 1000
KXLL Missoula, Mont. 250
KRBN Red Lodge, Mont. 1000
KVCK Wolf Point, Mont. 1000
KWBE Beatrice, Nebr. 250
KCSR Chadron, Nebr. 250
KONE Reno, Nev. 250
WKXL Concord, N.H. 1000
WEMJ Laconia, N.H. 250
WFPG Atlantic City, N.J. 1000
WCTC New Brunswick, N.J. 250
KLOS Albuquerque, N.Mex. 250
KLMX Clayton, N.Mex. 1000d
KOBE Las Cruces, N.Mex. 250
KENM Portales, N.Mex. 1000
WCLI Corning, N.Y. 1000
WWSC Glen Falls, N.Y. 1000d
WHDL Olean, N.Y. 1000
WKIP Poughkeepsie, N.Y. 250
WKAL Rome, N.Y. 250
WATA Boone, N.C. 250
WGNC Gastonia, N.C. 1000
WIZS Henderson, N.C. 1000
WHKP Hendersonville, N.C. 1000
WHIT New Bern, N.C. 250
KGCA Rugby, N.Dak. 250
WJER Dover, Ohio 250
WMOH Hamilton, Ohio 1000d
WLEC Sandusky, Ohio 1000
KWHW Altus, Okla. 250
KGFF Shawnee, Okla. 1000
KSIW Woodward, Okla. 1000
KORE Eugene, Oreg. 1000
KFLW Klamath Falls, Oreg. 250
KLBM La Grande, Oreg. 1000
KBPS Portland, Oreg. 250

Kc.	Wave Length	W.P.
WLEU	Erie, Pa.	1000d
WDAD	Indiana, Pa.	250
WPAM	Pottsville, Pa.	1000
WMPT	So. Williamsport, Pa.	250
WMAJ	State College, Pa.	1000d
WJPA	Washington, Pa.	250
WWRI	W. Warwick, R.I.	1000
WQSN	Charleston, S.C.	1000
WCRS	Greenwood, S.C.	1000
WMYB	Myrtle Beach, S.C.	1000
WHSC	Hartsville, S.C.	1000
KBFS	Belle Fourche, S.Dak.	250
KYNT	Yankton, S.Dak.	250
WLAR	Athens, Tenn.	250
WMOC	Chattanooga, Tenn.	250
WDSG	Dyersburg, Tenn.	250
WSMG	Greeneville, Tenn.	250
WLAF	LaFollette, Tenn.	100
WGNS	Murfreesboro, Tenn.	1000
KAYC	Beaumont, Tex.	1000
KBEN	Carrizo Sprgs., Tex.	250
KCTI	Gonzales, Tex.	250
KMBL	Junction, Tex.	250
KCYL	Lampasas, Tex.	250
KMHT	Marshall, Tex.	1000
KAMY	McCamey, Tex.	250
KNET	Palestine, Tex.	250
KSNY	Snyder, Tex.	1000
KURA	Moab, Utah	1000
KEYY	Provo, Utah	250
KDXU	St. George, Utah	250
WSNO	Barre, Vt.	1000
WTSA	Brattleboro, Vt.	1000
WFTR	Front Royal, Va.	250
WENZ	Highland Springs, Va.	250
WREL	Lexington, Va.	250
WMVA	Martinsville, Va.	1000
KBKW	Aberdeen, Wash.	1000
KCLX	Colfax, Wash.	1000
KONP	Port Angeles, Wash.	250
KAYE	Puyallup, Wash.	1000
WPAR	Parkersburg, W.Va.	250
KFIZ	Fond du Lac, Wis.	250
WDLB	Marshfield, Wis.	1000
WPFP	Park Falls, Wis.	1000
WRCO	Richland Center, Wis.	1000
KBBS	Buffalo, Wyo.	250
KVOW	Riverton, Wyo.	250

1460—205.4

Kc.	Wave Length	W.P.
CJOY	Guelph, Ont.	10000
CKRB	Ville St. Georges, Quebec	10000
CJNB	N. Battleford, Sask.	10000
WFMH	Cullman, Ala.	5000d
WPNX	Phenix City, Ala.	5000
KZOT	Marianna, Ark.	500
KCCL	Paris, Ark.	500d
KTYM	Inglewood, Calif.	5000d
KDON	Salinas, Calif.	5000
KVRE	Santa Rosa, Calif.	1000d
KYSN	Colo. Sprgs., Colo.	1000
WBAR	Bartow, Fla.	1000d
WZEP	DeFuniak Springs, Florida	1000d
WMBR	Jacksonville, Fla.	5000
WDMF	Buford, Ga.	1000d
WROY	Carmi, Ill.	1000d
WIXN	Dixon, Ill.	1000d
WRTL	Rantoul, Ill.	250d
WKAM	Goshen, Ind.	1000d
WOCH	North Vernon, Ind.	1000d
KSO	Des Moines, Iowa	5000
KCRB	Chanute, Kans.	1000d
WRVK	Mt. Vernon, Ky.	500d
WAIL	Baton Rouge, La.	5000
KBSF	Springhill, La.	1000d
WEMD	Easton, Md.	500d
WBET	Brockton, Mass.	5000
WBRN	Big Rapids, Mich.	1000d
WPON	Pontiac, Mich.	1000
KDMA	Montevideo, Minn.	1000
WELZ	Belzoni, Miss.	1000d
KADY	St. Charles, Mo.	5000d
KRNY	Kearney, Nebr.	5000d
KENO	Las Vegas, Nev.	1000
WOKO	Albany, N.Y.	5000
WVOX	New Rochelle, N.Y.	500d
WHEC	Rochester, N.Y.	5000
WFVG	Fuquay Sprgs., N.C.	1000d
WRKB	Kannapolis, N.C.	500d
WMMH	Marshall, N.C.	500d
WBNS	Columbus, Ohio	5000
WPVL	Painesville, Ohio	500d
KELR	El Reno, Okla.	500
KROW	Dallas, Oreg.	1000
WMBA	Ambridge, Pa.	500d
WCMB	Harrisburg, Pa.	5000
WBCU	Union, S.C.	1000
WGOG	Walhalla, S.C.	500d
WJAK	Jackson, Tenn.	5000d
WEEN	Lafayette, Tenn.	1000d
KBRZ	Freeport, Tex.	500d
KLLL	Lubbock, Tex.	1000d
WACO	Waco, Tex.	1000
WPRW	Manassas, Va.	500d
WRAD	Radford, Va.	5000
WLPM	Suffolk, Va.	1000
KCDI	Kirkland, Wash.	5000d
KIMA	Yakima, Wash.	5000
WBUC	Buckhannon, W.Va.	5000d
WRAC	Racine, Wis.	500d
WTMB	Tomah, Wis.	1000d

1470—204.0

Kc.	Wave Length	W.P.
CHOW	Welland, Ontario	1000
CFOX	Pointe Claire, Que.	10000
WBLO	Evergreen, Ala.	1000d
KZNG	Hot Springs, Ark.	1000d
KBMX	Coalinga, Calif.	500d
KUTY	Palmdale, Calif.	5000
KXOA	Sacramento, Calif.	5000
WMMW	Meriden, Conn.	1000d
WPOM	Pompano Beach, Fla.	5000
WRBB	Tarpon Sprgs., Fla.	5000d
WAAG	Adel, Ga.	1000d
WDOL	Athens, Ga.	1000d
WCLA	Claxton, Ga.	1000
WRGA	Rome, Ga.	5000
WMPP	Chicago Heights, Ill.	1000d
WMBD	Peoria, Ill.	5000
WHUT	Anderson, Ind.	1000d
KTRI	Sioux City, Iowa	5000
KWVY	Waverly, Iowa	1000d
KARE	Atchison, Kans.	1000
KLIB	Liberal, Kans.	500d
WSAC	Fort Knox, Ky.	1000d
KPLC	Lake Charles, La.	5000
WLAM	Lewiston, Maine	5000
WJDY	Salisbury, Md.	5000d
WTTR	Westminster, Md.	1000d
WSRO	Marlborough, Mass.	1000d
WNBP	Newburyport, Mass.	500d
WKMF	Flint, Mich.	5000
WKLZ	Kalamazoo, Mich.	500d
KANO	Anoka, Minn.	1000d
WCHJ	Brookhaven, Miss.	1000d
WNAU	New Albany, Miss.	500d
KGHM	Brookfield, Mo.	500d
KTCB	Malden, Mo.	1000d
WTKO	Ithaca, N.Y.	1000d
WPDM	Potsdam, N.Y.	1000d
WBIG	Greensboro, N.C.	5000
WPNC	Plymouth, N.C.	1000d
WTOE	Spruce Pine, N.C.	1000d
WOHO	Toledo, Ohio	1000
KVLH	Pauls Valley, Okla.	250d
KVIN	Vinita, Okla.	500d
KRAF	Reedsport, Oreg.	5000d
WSAN	Allentown, Pa.	5000
WFAR	Farrell, Pa.	1000d
WWML	Portage, Pa.	500d
WQXL	Columbia, S.C.	5000d
WEAG	Alcoa, Tenn.	1000d
WVOL	Berry Hill, Tenn.	5000
KRBC	Abilene, Tex.	5000
KWRD	Henderson, Tex.	500d
KCNY	San Marcos, Tex.	250d
KELA	Centralia, Wash.	5000
KSEM	Moses Lake, Wash.	5000
KAPS	Mount Vernon, Wash.	500d
WWHY	Huntington, W.Va.	5000d
WBZE	Wheeling, W.Va.	500d
WBKV	West Bend, Wis.	1000d
KTWO	Casper, Wyo.	5000

1480—202.6

Kc.	Wave Length	W.P.
WARI	Abbeville, Ala.	1000
WBTS	Bridgeport, Ala.	1000d
WIXI	Irondale, Ala.	5000d
WABB	Mobile, Ala.	5000
KHAT	Phoenix, Ariz.	500
KGLU	Safford, Ariz.	1000
KTHS	Berryville, Ark	1000
KWUN	Concord, Calif.	500d
KRED	Eureka, Calif.	5000
KYOS	Merced, Calif.	5000
KWIZ	Santa Ana, Calif.	5000
KSEE	Santa Maria, Calif.	1000
KTUX	Pueblo, Colo.	1000d
WSOR	Windsor, Conn.	500d
WAPG	Arcadia, Fla.	1000d
WTHR	Panama Beach, Fla.	500d
WXIV	Windemere, Fla.	1000d
WYZE	Atlanta, Ga.	5000d
WRDW	Augusta, Ga.	5000
WGSB	Geneva, Ill.	1000
WJBM	Jerseyville, Ill.	500d
WTHI	Terre Haute, Ind.	1000
WRSW	Warsaw, Ind.	1000
KLEE	Ottumwa, Iowa	500d
KBEA	Mission, Kans.	1000d
KLEO	Wichita, Kans.	5000
WKOA	Hopkinsville, Ky.	1000d
WNKY	Neon, Ky.	1000d
WTLO	Somerset, Ky.	1000d
KCKW	Jena, La.	500
KANV	Jonesville, La.	500d
KJOE	Shreveport, La.	1000d
WSAR	Fall River, Mass.	5000
WMAX	Grand Rapids, Michigan	1000d
WIDS	Tawas City, Mich.	1000d
WYSI	Ypsilanti, Mich.	500wd
KAUS	Austin, Minn.	1000
KGCX	Sidney, Mont.	5000
KLMS	Lincoln, Nebr.	1000
KWEW	Hobbs, N. Mex.	5000
WLEA	Hornell, N.Y.	1000d
WHOM	New York, N.Y.	5000
WREM	Remsen, N.Y.	5000d
WWOK	Charlotte, N.C.	5000
WYRN	Louisburg, N.C.	500d
WMSJ	Sylva, N.C.	500d
WHBC	Canton, Ohio	5000
WCIN	Cincinnati, Ohio	5000
WTRA	Latrobe, Pa.	500d
WDAS	Philadelphia, Pa.	5000
WISL	Shamokin, Pa.	1000
WSHP	Shippensburg, Pa.	500d
WMDD	Fajardo, P.R.	5000
KSDR	Waterton, S.D.	1000d
WJFC	Jefferson City, Tenn.	500
WLOK	Memphis, Tenn.	5000d
KBOX	Dallas, Tex.	5000
KLVL	Pasadena, Tex.	1000
KAPE	San Antonio, Tex.	500d
KONI	Spanish Fork, Utah	1000d
WCFR	Springfield, Vt.	1000d
WBBL	Richmond, Va.	5000
WLEE	Richmond, Va.	5000
WBLU	Salem, Va.	5000d
KFHA	Lakewood, Wash.	1000d
KVAN	Vancouver, Wash.	1000d
WISM	Madison, Wis.	5000
KRAE	Cheyenne, Wyo.	1000d

1490—201.2

Kc.	Wave Length	W.P.
CKAD	Wilmot Station, N.S.	1000
CFMR	Fort Simpson, NWT.	250
CFRC	Kingston, Ont.	100
CKCR	Kitchener, Ont.	1000
CKBM	Montmagny, Que.	1000
WANA	Anniston, Ala.	250
WAJF	Decatur, Ala.	1000
WRLD	Lanett, Ala.	250
WHBB	Selma, Ala.	250
KYCA	Prescott, Ariz.	1000
KAIR	Tucson, Ariz.	250
KXAR	Hope, Ark.	250
KTLO	Mtn. Home, Ark.	250
KDRS	Paragould, Ark.	250
KOTN	Pine Bluff, Ark.	250
KXRJ	Russellville, Ark.	1000
KWAC	Bakersfield, Calif.	1000
KPAS	Banning, Calif.	250
KBLA	Burbank, Calif.	250
KICO	Calexico, Calif.	250
KOWL	Lake Tahoe, Calif.	250
KTOB	Petaluma, Calif.	1000
KBLF	Red Bluff, Calif.	1000
KDB	Santa Barbara, Calif.	1000
KSYC	Yreka, Calif.	1000
KBOL	Boulder, Colo.	1000
KGUC	Gunnison, Colo.	250
KCMS	Manitou Sprgs., Colo.	100
KOLR	Sterling, Colo.	250
WTOR	Torrington, Conn.	250
WTRL	Bradenton, Fla.	250
WJBS	DeLand, Fla.	250
WMBM	Miami Beach, Fla.	250
WSRA	Milton, Fla.	250
WRGR	Starke, Fla.	250
WTTB	Vero Beach, Fla.	250
WSIR	Winter Haven, Fla.	250
WMOG	Brunswick, Ga.	250
WMJM	Cordele, Ga.	1000
WMRE	Monroe, Ga.	1000d
WSFB	Quitman, Ga.	250
WSNT	Sandersville, Ga.	500
WSYL	Sylvania, Ga.	250
KTOH	Lihue, Hawaii	250
KCID	Caldwell, Idaho	1000
WKRO	Cairo, Ill.	250
WDAN	Danville, Ill.	1000
WBBR	East St. Louis, Ill.	500
WOPA	Oak Park, Ill.	1000
WZOE	Princeton, Ind.	1000
WKBV	Richmond, Ind.	1000
WNDU	South Bend, Ind.	250
KBUR	Burlington, Iowa	1000
WDBQ	Dubuque, Iowa	1000
KRIB	Mason City, Iowa	250
KKAN	Phillipsburg, Kans.	250
KTOP	Topeka, Kans.	250
WFKY	Frankfort, Ky.	1000d
WKAY	Glasgow, Ky.	1000
WOMI	Owensboro, Ky.	1000
WSIP	Paintsville, Ky.	1000
WIKC	Bogalusa, La.	1000
KEUN	Eunice, La.	250
KCIL	Houma, La.	1000
KRUS	Ruston, La.	250
WPOR	Portland, Maine	1000
WTVL	Waterville, Maine	1000
WARK	Hagerstown, Md.	1000
WHAV	Haverhill, Mass.	250
WMRC	Milford, Mass.	250
WTXL	W. Springfield, Mass.	1000
WABJ	Adrian, Mich.	1000
WBFC	Fremont, Mich.	250
WMDN	Midland, Mich.	1000
WCBQ	Whitehall, Mich.	1000
KXRA	Alexandria, Minn.	250
KOZY	Grand Rapids, Minn.	250
KLGR	Redwd. Falls, Minn.	1000
WLOX	Biloxi, Miss.	1000
WCLD	Cleveland, Miss.	250
WHOC	Philadelphia, Miss.	250
WTUP	Tupelo, Miss.	250
WVIM	Vicksburg, Miss.	250
KDMO	Carthage, Mo.	250
KTTR	Rolla, Mo.	1000
KDRO	Sedalia, Mo.	250
KBOW	Butte, Mont.	1000
KBON	Omaha, Nebr.	1000
WEMJ	Laconia, N.H.	1000
WLDB	Atlantic City, N.J.	250
KRSN	Los Alamos, N.Mex.	1000
KRTN	Raton, N.Mex.	250
WCSS	Amsterdam, N.Y.	1000
WBTA	Batavia, N.Y.	250
WKNY	Kingston, N.Y.	1000
WICY	Malone, N.Y.	1000
WDLC	Port Jervis, N.Y.	250
WOLF	Syracuse, N.Y.	250
WSSB	Durham, N.C.	250
WFLB	Fayetteville, N.C.	250
WLOE	Leaksville, N.C.	250
WRNB	New Bern, N.C.	1000
WRMT	Rocky Mount, N.C.	250
WSTP	Salisbury, N.C.	250
WSVM	Valdese, N.C.	250
KNDC	Hettinger, N.Dak.	250
WHSL	Wilmington, N.C.	250
KOVC	Valley City, N.Dak.	250
WBEX	Chillicothe, Ohio	1000
WJMO	Cleveland Hghts., Ohio	250
WOHI	E. Liverpool, Ohio	250
WMOA	Marietta, Ohio	1000
WMRN	Marion, Ohio	1000
KWRW	Guthrie, Okla.	100
KBIX	Muskogee, Okla.	250
KBKR	Baker, Oreg.	250
KRNR	Roseburg, Oreg.	250
KBZY	Salem, Oreg.	1000
WESB	Bradford, Pa.	1000
WAZL	Hazleton, Pa.	1000
WARD	Johnstown, Pa.	250
WGAL	Lancaster, Pa.	1000
WBCB	Levittown, Pa.	1000
WMRF	Lewiston, Pa.	1000
WMGW	Meadville, Pa.	1000d
WNBT	Wellsboro, Pa.	1000
WSIB	Beaufort, S.C.	100
WGCD	Chester, S.C.	250
WMRB	Greenville, S.C.	1000
KORN	Mitchell, S.Dak.	250
WOPI	Bristol, Tenn.	1000
WDXB	Chattanooga, Tenn.	1000
WRDL	Fountain City, Tenn.	250
WJJM	Lewisburg, Tenn.	1000
WDXL	Lexington, Tenn.	1000
KNOW	Austin, Tex.	250
KIBL	Beeville, Tex.	250
KBST	Big Spring, Tex.	250
KHUZ	Borger, Tex.	250
KNEL	Brady, Tex.	250
KSAM	Huntsville, Tex.	250
KVOZ	Laredo, Tex.	250
KZZN	Littlefield, Tex.	250
KPLT	Paris, Tex.	250
KGKB	Tyler, Tex.	250
KVWC	Vernon, Tex.	250
KVOG	Ogden, Utah	1000
WKVT	Brattleboro, Vt.	250
WIKE	Newport, Vt.	1000
WCVA	Culpeper, Va.	250
WVEC	Hampton, Va.	250
WAYB	Waynesboro, Va.	250
KBRO	Bremerton, Wash.	1000
KLOG	Kelso, Wash.	250
KENE	Toppenish, Wash.	250
KTEL	Walla Walla, Wash.	250
WTGR	Charleston, W.Va.	250
WTCS	Fairmont, W.Va.	1000d
WLOH	Princeton, W.Va.	250
WGEZ	Beloit, Wis.	1000d
WLCX	LaCrosse, Wis.	1000
WIGM	Medford, Wis.	1000
WOSH	Oshkosh, Wis.	1000
KIML	Gillette, Wyo.	250
KLME	Laramie, Wyo.	500
KRTR	Thermopolis, Wyo.	250
KGOS	Torrington, Wyo.	1000

1500—199.9

Kc.	Wave Length	W.P.
CHUC	Port Hope, Ont.	1000
KKCM	Jacksonville, Ark.	1000d
KXRX	San Jose, Calif.	5000
WTOP	Washington, D.C.	50000
WKIZ	Key West, Fla.	250
WJBK	Detroit, Mich.	10000
KSTP	St. Paul, Minn.	50000
KPIR	Eugene, Ore.	10000d
WMNT	Manati, P.R.	250
KTXO	Sherman, Tex.	250
KANI	Wharton, Tex.	500

1510—199.1

Kc.	Wave Length	W.P.
CKOT	Tillsonburg, Ont.	1000d
KALF	Mesa, Ariz.	10000d
KASK	Ontario, Calif.	1000
KIRV	Fresno, Calif.	500
KTIM	San Rafael, Calif.	1000d
KMOR	Littleton, Colo.	1000
WNLC	New London, Conn.	5000
WJRC	Joliet, Ill.	500d
WKAI	Macomb, Ill.	1000d
KIFG	Iowa Falls, Iowa	500d
WMEX	Boston, Mass.	5000
WJCO	Jackson, Mich.	500d
WLKM	Three Rivers, Mich.	500
KANS	Independence, Mo.	1000d
KTTT	Columbus, Nebr.	500d
WEAL	Greensboro, N.C.	1000d
WRAN	Dover, N.J.	1000
WBRW	Brewster, N.Y.	1000d
WLAC	Nashville, Tenn.	50000
KCTX	Childress, Tex.	250d
KROB	Robstown, Tex.	500d
KSTV	Stephenville, Tex.	250d
KGA	Spokane, Wash.	50000
WAUX	Waukesha, Wis.	10000d

1520—197.4

Kc.	Wave Length	W.P.
KGHT	Hollister, Calif.	500
KACY	Port Hueneme, Calif.	10000
WGNP	Indian Rocks Beach, Fla.	1000d
WIXX	Oakland Park, Fla.	1000d
WHOW	Clinton, Ill.	5000d
WLUV	Loves Park, Ill.	500d
WSVL	Shelbyville, Ind.	1000
KSIB	Creston, Iowa	1000d
WRSL	Stanford, Ky.	500d
KXKW	Lafayette, La.	500

Kc. Wave Length W.P.

WJKR Muskegon Hts., Mich. 250d
WYNZ Ypsilanti, Mich. 250d
WKBW Buffalo, N.Y. 50000
WFYI Mineola, N.Y. 50000d
KOMA Okla. City, Okla. 50000
KGON Oregon City, Oreg. 10000
WWWW Rio Piedras, P.R. 250

1530—196.1

KFBK Sacramento, Calif. 50000
KWLA Many, La. 1000d
WRPM Poplarville, Miss. 1000d
WTHM Lapeer, Mich. 5000d
KMAM Butler, Mo. 250
WENG Englewood, Fla. 1000
WCKY Cincinnati, Ohio 50000
KPBR El Paso, Tex. 1000d
KGBT Harlingen, Tex. 50000
KCLR Ralls, Tex. 1000d
WQVA Quantico, Va. 250

1540—195.0

ZNS Nassau, B.W.I. 10000
CHFI Toronto, Ont. 50kwd
KPOL Los Angeles, Calif. 50000
WSMI Litchfield, Ill. 1000d
WBNL Boonville, Ind. 250d
WLOI LaPorte, Ind. 250d
KXEL Waterloo, Iowa 50000
KNEX McPherson, Kans. 250d
KLKC Parsons, Kans. 250d
WDON Wheaton, Md. 1000
WPTR Albany, N.Y. 50000
WIFM Elkin, N.C. 250d
WABQ Cleveland, Ohio 1000d
WJMJ Philadelphia, Pa. 50000d
WPTS Pittston, Pa. 1000d
WPME Punxsutawney, Pa. 1000d
WADK Newport, R.I. 1000d
KCUL Ft. Worth, Tex. 50000d
KGBC Galveston, Tex. 1000
KBVU Bellevue, Wash. 1000
WTKM Hartford, Wis. 500d

1550—193.5

CBE Windsor, Ont. 10000
WBHM Birmingham, Ala. 50000d
WAAY Huntsville, Ala. 5000
WMOE Mobile, Ala. 50000d
KFIF Tucson, Ariz. 50000d
KXEX Fresno, Calif. 500d
KKHI San Fran., Calif. 10000
KDAB Arvada, Colo. 10000d
WRIZ Coral Gables, Fla. 10000d
WORT New Smyrna Bch., Fla. 250
WYOU Tampa, Fla. 10000d
WSMA Smyrna, Ga. 10000d
WJIL Jacksonville, Ill. 1000d
WCTW New Castle, Ind. 250
KEDD Dodge City, Kans. 1000d
WIRV Irvine, Ky. 1000d
WMSK Morganfield, Ky. 250d
WYNE Baton Rouge, La. 5000d
KOKA Shreveport, La. 10000
WSER Elkton, Md. 250d
WSHN Fremont, Mich. 1000d
WSAO Sanitobia, Miss. 5kwd
KBLR Bolivar, Mo. 250
KGMD Cape Girardeau, Mo. 5000d
KKJO St. Joseph, Mo. 5000
WCGR Canadaigua, N.Y. 250
WBAZ Kingston, N.Y. 500d
WBVM Utica, N.Y. 1000
WHTB Greenville, N.C. 500d
WNOH Raleigh, N.C. 1000d
WTYN Tryon, N.C. 1000d
WPEG Winston-Salem, N.C. 1000d
KUTT Fargo, N.D. 5000d
WDLR Delaware, Ohio 500d
KMAD Madill, Okla. 250
KREK Sapulpa, Okla. 500d
WLOA Braddock, Pa. 1000d
WTTC Towanda, Pa. 500d
WKFE Yauco, P.R. 250
WBSC Bennetsville, S.C. 10000
WTHB N. Augusta, S.C. 1000d
KVPH Canyon, Tex. 1000
KWBC Navasota, Tex. 250d
WKYE Bristol, Tenn. 1000d
WYRL Bristol, Tenn. 1000d
WPTN Cookeville, Tenn. 250d
WTPI Cookville, Tenn. 250d
WKPT Kingsport, Tenn. 10000d
WKBA Vinton, Va. 1000d
WBOF Virginia Beach, Va. 5000d
WXVA Charlestown, W.Va. 500d
KOQT Bellingham, Wash. 1000d

1560—192.3

CFRS Simcoe, Ont. 250d
KPMC Bakersfield, Calif. 10000
KIQS Willows, Calif. 250d
WBYS Canton, Ill. 250d

KSWI Council Bluffs, Iowa 1000d
WDXR Paducah, Ky. 1000
KQYX Joplin, Mo. 250
WQXR New York, N.Y. 50000
WSDC Mocksville, N.C. 250d
WGLD Chardon, Ohio 250d
WTNS Coshocton, Ohio 1000d
WTOD Toledo, Ohio 5000d
KWCO Chickasha, Okla. 1000
WRSJ Bayamon, P.R. 5000
WLVN Nashville, Tenn. 10000d
KCAD Abilene, Tex. 500d
KHBR Hillsboro, Tex. 250d
KGUL Port Lavaca, Tex. 500d
KHOK Hoquiam, Wash. 1000d

1570—191.1

CHUB Nanaimo, B.C. 10000
CKLM Montreal, Canada 10000d
CFOR Orillia, Ont. 10000
WCRL Oneonta, Ala. 1000d
WRWJ Selma, Ala. 5000d
KBRI Brinkley, Ark. 250d
KBJT Fordyce, Ark. 250d
KRKC King City, Calif. 250d
KCVR Lodi, Calif. 1000d
KACE Riverside, Calif. 1000d
KLOV Loveland, Colo. 250d
WTWB Auburndale, Fla. 5000d
WPAP Fernandina Beach, Florida 1000d
WOKC Okeechobee, Fla. 1000
WJOE Ward Ridge, Fla. 250
WMES Ashburn, Ga. 1000d
WGHC Clayton, Ga. 1000d
WEAD College Park, Ga. 1000d
WGSR Millen, Ga. 250d
WOKZ Alton, Ill. 1000d
WFRL Freeport, Ill. 5000d
WBEE Harvey, Ill. 1000d
WTAY Robinson, Ill. 250d
WILO Frankfort, Ind. 250d
WAWK Kendallville, Ind. 250d
WOWI New Albany, Ind. 1000d
KMCD Fairfield, Iowa 250d
KJFJ Webster City, Iowa 250d
KNDY Marysville, Kans. 250d
KWSK Pratt, Kans. 250d
WKKS Vanceburg, Ky. 250d
WABL Amite, La. 500d
KLLA Leesville, La. 1000
KMAR Winnsboro, La. 1000
WAQE Towson, Md. 5000d
WPEP Taunton, Mass. 1000d
WMLO Beverly, Mass. 500d
WDEW Westfield, Mass. 1000d
WMRP Flint, Mich. 1000d
WFUR Grand Rapids, Michigan 1000d
KUXL Golden Valley, Minn. 500d
WDNA Winona, Miss. 1000d
KLEX Lexington, Mo. 250d
WAFS Amsterdam, N.Y. 1000
WFLR Dundee, N.Y. 1000d
WBUZ Fredonia, N.Y. 250d
WAPC Riverhead, N.Y. 1000d
WTLK Taylorsville, N.C. 500
WNCA Siler City, N.C. 1000d
WCLW Mansfield, Ohio 1000
WPTW Piqua, Ohio 250d
KTAT Frederick, Okla. 250d
KOLS Pryor, Okla. 1000d
KGGG Forest Grove, Oreg. 1000d
KOHU Hermiston, Oreg. 1000d
WBUX Doylestown, Pa. 1000d
WAKU Latrobe, Pa. 1000d
WFGN Gaffney, S.C. 250d
WJES Johnston, S.C. 250
WLSC Loris, S.C. 1000d
WHLP Centerville, Tenn. 1000d
WCLE Cleveland, Tenn. 1000d
WTRB Ripley, Tenn. 1000d
KZOL Farwell, Tex. 250d
KVLG La Grange, Tex. 250d
KTER Terrell, Tex. 250d
KWIC Salt Lake City, Utah 5000
WSWV Pennington Gap, Va. 1000d
WYTI Rocky Mount, Va. 1000d
WEER Warrenton, W.Va. 500d
WAPL Appleton, Wis. 1000d

1580—189.2

CBJ Chicoutimi, Que. 10000
WEYY Talladega, Ala. 1000d
KYND Tempe, Ariz. 10000d
KPCA Marked Tree, Ark. 250d
KFDF Van Buren, Ark. 1000d
KPON Anderson, Calif. 1000d
KWIP Merced, Calif. 500d
KDAY Santa Monica, Cal. 50000d
KHUM Santa Rosa, Calif. 500d

KPIK Colorado Sprgs., Colo. 5000d
WWIL Ft. Lauderdale, Fla. 10000
WVGT Mount Dora, Fla. 1000d
WCLS Columbus, Ga. 1000d
WPFE Eastman, Ga. 500d
WLBA Gainesville, Ga. 5000d
WKIG Glenville, Ga. 1000d
WKKD Aurora, Ill. 250d
WDQN DuQuoin, Ill. 250d
WBBA Pittsfield, Ill. 250d
WKID Urbana, Ill. 250d
WCNB Connersville, Ind. 250d
WJVA South Bend, Ind. 1000d
WAMW Washington, Ind. 250d
KCHA Charles City, Iowa 500d
KWNT Davenport, Iowa 500d
KDSN Denison, Iowa 500d
WAXU Georgetown, Ky. 10000d
WMTL Leitchfield, Ky. 250d
WPKY Princeton, Ky. 250d
KLUV Haynesville, La. 250d
KLOU Lake Charles, La. 1000
WPGC Bradbury Hgts., Md. 10000
WOWE Allegan, Mich. 250d
WJUD St. Johns, Mich. 1000d
KDOM Windom, Minn. 250d
WAMY Amory, Miss. 5000d
WGLC Centreville, Miss. 250d
WESY Leland, Miss. 1000
WPMP Pascagoula-Moss Point, Mississippi 1000d
KCGM Columbia, Mo. 250d
KESM Eldorado Springs, Mo. 250d
KNIM Maryville, Mo. 250d
WNJH Hammonton, N.J. 250d
WCRV Washington, N.J. 500d
KRZY Albuquerque, N.Mex. 1000d
WPAC Patchogue, N.Y. 10000d
WZKY Albemarle, N.C. 250d
WPYB Benson, N.C. 500d
WVKO Columbus, Ohio 1000d
KLTR Blackwell, Okla. 1000d
WCOY Columbia, Pa. 500d
WEND Ebensburg, Pa. 1000d
WANB Waynesburg, Pa. 250d
WORG Orangeburg, S.C. 1000d
WYCL York, S.C. 250d
WSKT Colonial Village, Tenn. 250d
WLIJ Shelbyville, Tenn. 1000d
WSKT South Knoxville, Tenn. 250
KKAL Denver City, Tex. 250d
KGAF Gainesville, Tex. 250d
KIRT Mission, Tex. 1000d
KTLU Rusk, Tex. 500d
KWED Seguin, Tex. 1000d
KBYP Shamrock, Tex. 250d
KBGO Waco, Tex. 1000
WILA Danville, Va. 1000d
WPUV Pulaski, Va. 5000d
WTTN Watertown, Wis. 1000d

1590—188.7

WATM Atmore, Ala. 5000d
WVNA Tuscumbia, Ala. 5000d
KPBA Pine Bluff, Ark. 1000d
KLIV San Jose, Calif. 5000
KUDU Ventura, Calif. 1000
KCIN Victorville, Calif. 500d
WBRY Waterbury, Conn. 5000
WOWY Clewiston, Fla. 500d
WILZ St. Petersburg Beach, Florida 1000d
WELE S. Daytona Bch., Fla. 1000d
WALG Albany, Ga. 1000
WLFA Lafayette, Ga. 5000d
WTGA Thomaston, Ga. 500d
WNMP Evanston, Ill. 1000d
WAIK Galesburg, Ill. 5000d
WGEE Indianapolis, Ind. 5000d
WPCO Mt. Vernon, Ind. 500d
KWBG Boone, Iowa 1000
KVGB Great Bend, Kans. 5000
WLBN Lebanon, Ky. 1000d
KEVL White Castle, La. 1000d
WETT Ocean City, Md. 1000
WTVB Coldwater, Mich. 5000
WDOG Marine City, Mich. 1000d
WMIC St. Helen, Mich. 500d
KRAD E. Grand Forks, Minn. 1000d
WOKJ Jackson, Miss. 5000d
KDEX Dexter, Mo. 1000d
KPRS Kansas City, Mo. 1000d
KCLU Rolla, Mo. 1000d
WSMN Nashua, N.H. 5000
WERA Plainfield, N.J. 500d
WAUB Auburn, N.Y. 500d
WEHH Elmira Heights-Horseheads, N.Y. 500d
WGGO Salamanca, N.Y. 5000d
WVOE Chadburn, N.C. 1000

WGTC Greenville, N.C. 500
WNOS High Point, N.C. 1000d
WAKR Akron, Ohio 5000
WSRW Hillsboro, Ohio 500d
KHEN Henryetta, Okla. 500d
KTIL Tillamook, Oreg. 1000
WZUM Carnegie, Pa. 1000d
WCBG Chambersburg, Pa. 5000d
WEEZ Chester, Pa. 1000
WXRF Guayama, P.R. 1000
WYNG Warwick, R.I. 1000d
WABV Abbeville, S.C. 1000d
WACA Camden, S.C. 1000d
KCCR Pierre, S.Dak. 1000d
WJSO Jonesboro, Tenn. 5000d
WDBL Springfield, Tenn. 1000d
KGAS Carthage, Tex. 1000d
KERC Eastland, Tex. 500d
KINT El Paso, Tex. 1000d
KYOK Houston, Tex. 5000
KCBD Lubbock, Tex. 1000
KBUS Mexia, Tex. 500d
KTOD Sinton, Tex. 1000
WRLA Luray, Va. 500d
WRGM Richmond, Va. 5000d
KLFF Mead, Wash. 1000d
KETD Seattle, Wash. 5000d
WIXK New Richmond, Wis. 5000d
WSWW Platteville, Wis. 5000
WTRW Two Rivers, Wis. 1000d
WAWA West Allis, Wis. 1000d
KCHY Cheyenne, Wyo. 1000d

1600—187.5

CHVC Niagara Falls, Ont. 10000
WEUP Huntsville, Ala. 5000d
WAPX Montgomery, Ala. 1000
KVIC Cottonwood, Ariz. 1000d
KXEW Tucson, Ariz. 1000
KGST Fresno, Calif. 1000d
KWOW Pomona, Calif. 1000
KHER Santa Maria, Calif. 500d
KUBA Yuba City, Calif. 5000
KLAK Lakewood, Colo. 5000
WKEN Dover, Del. 500d
WKTX Atlantic Beach, Fla. 1000d
WKWF Key West, Fla. 500
WHEW Riviera Beach, Fla. 1000
WOKB Winter Garden, Fla. 1000d
WGKA Atlanta, Ga. 1000d
WNGA Nashville, Ga. 1000d
WCGO Chicago Hgts., Ill. 1000d
WMCW Harvard, Ill. 500d
WBTO Linton, Ind. 500d
WARU Peru, Ind. 1000d
KLGA Algona, Iowa 5000d
KCRG Cedar Rapids, Iowa 5000
KMDO Ft. Scott, Kans. 500d
WSTL Eminence, Ky. 500d
KFNV Ferriday, La. 1000d
KLVI Vivian, La. 500d
WINX Rockville, Md. 1000
WBOS Brookline, Mass. 5000
WTYM East Longmeadow, Mass. 5000d
WHRV Ann Arbor, Mich. 1000
WTRU Muskegon, Mich. 5000
WKDL Clarksdale, Miss. 1000d
WFFF Columbia, Miss. 500d
KATZ St. Louis, Mo. 5000
KTTN Trenton, Mo. 500d
KNCY Nebraska City, Nebr. 500d
KRFS Superior, Nebr. 500d
WMCR Oneida, N.Y. 1000d
WLNG Sag Harbor, N.Y. 500
WXKW Troy, N.Y. 500d
WWRL Woodside, N.Y. 50000
WGIV Charlotte, N.C. 1000
WIDU Fayetteville, N.C. 1000d
WFRC Reidsville, N.C. 1000
WKSK W. Jefferson, N.C. 1000d
KDAK Carrington, N.Dak. 500d
WAQI Ashtabula, Ohio 1000d
WBLY Springfield, Ohio 1000d
WTTF Tiffin, Ohio 500d
KUSH Cushing, Okla. 1000d
KASH Eugene, Oreg. 5000
KSTH St. Helens, Oreg. 1000d
WHOL Allentown, Pa. 500d
WEZN Elizabethtown, Pa. 500d
WFIS Fountain Inn, S.C. 1000d
WFNL No. Augusta, S.C. 500d
WHBT Harriman, Tenn. 5000d
WKBJ Milan, Tenn. 1000d
KBBB Borger, Tex. 500d
KBOR Brownsville, Tex. 1000
KWEL Midland, Tex. 1000
KCFH Cuero, Tex. 500d
KMAE McKinney, Tex. 1000d
KOGT Orange, Tex. 1000
KBBC Centerville, Utah 1000d
WHLL Wheeling, W.Va. 5000d
WCWC Ripon, Wis. 5000d

U. S. and Canadian AM Stations by Location

Abbreviations: C.L., call letters; Kc., frequency in kilocycles; N.A., network affiliation—A: American Broadcasting Co.; C: Columbia Broadcasting System, Inc.; M: Mutual Broadcasting System; N: National Broadcasting Co., Inc.

Location	C.L.	Kc.	N.A.
Abbeville, Ala.	WARI	1480	
Abbeville, La.	KROF	960	
Abbeville, S.C.	WABV	1590	
Aberdeen, Md.	WAMD	970	
Aberdeen, Miss.	WMPA	1240	
Aberdeen, S.Dak.	KABR	1420	
	KSDN	930	A
Aberdeen, Wash.	KBKW	1450	
	KXRO	1320	
Abilene, Tex.	KRBC	1470	A
	KCAD	1560	
	KNIT	1280	
	KWKC	1340	M
Abingdon, Va.	WBBI	1230	
Ada, Okla.	KADA	1230	A
Adel, Ga.	WAAG	1470	
Adrian, Mich.	WABJ	1490	A
Aguadilla, P.R.	WABA	850	
	WGRF	1340	
Ahoskie, N.C.	WRCS	970	
Aiken, S.C.	WAKN	990	

Location	C.L.	Kc.	N.A.
	WLOW	1330	D
Aitkin, Minn.	KKIN	1000	D
Akron, Ohio	WAKR	1590	A
	WADC	1350	C
	WCUE	1150	M
	WHLO	640	M
Alamogordo, N.M.	KALG	1230	M
	KRAC	1270	
Alamosa, Colo.	KGIW	1450	M
Albany, Ga.	WALG	1590	A
	WLYB	1250	
	WGPC	1450	C
	WJAZ	960	
Albany, Ky.	WANY	1390	
Albany, Minn.	KASM	1150	
Albany, N.Y.	WABY	1400	
	WOKO	1460	M
	WPTR	1540	A
	WROW	590	C
Albany, Oreg.	KWIL	790	M
	KRKT	990	
Albemarle, N.C.	WABZ	1010	
	WZKY	1580	
Albert Lea, Minn.	KATE	1450	A
Albertville, Ala.	WAVU	630	
Albion, Mich.	WALM	1260	
Albuquerque, N.M.	KABQ	1350	
	KDEF	1150	A
	KGGM	610	C
	KOB	770	N
	KQEO	920	M
	KARA	1310	
	KVOD	730	
	KLOS	1450	
	KRZY	1580	A
Alcoa, Tenn.	WEAG	1470	
Alexander City, Ala.	WRFS	1050	
Alexandria, La.	KALB	580	A
	KDBS	1410	
	KSYL	970	N
Alexandria, Minn.	KXRA	1490	A
Alexandria, Va.	WPIK	730	M
Algona, Iowa	KLGA	1600	
Alice, Tex.	KOPY	1070	
Allegan, Mich.	WOWE	1580	
Allentown, Pa.	WHOL	1600	
	WAEB	790	
	WKAP	1320	
	WSAN	1470	N
Alliance, Nebr.	KCOW	1400	
Alliance, Ohio	WFAH	1310	
Alma, Ga.	WCQS	1400	
Alma, Mich.	WFYC	1280	
Alpena Township, Mich.	WATZ	1450	
Alpine, Tex.	KVLF	1240	M
Altavista, Va.	WKDE	1280	
Alton, Ill.	WOKZ	1570	
Altona, Man.	CFAM	1290	
Altoona, Pa.	WFBG	1290	N
	WRTA	1240	A
	WVAM	1430	C
Alturas, Calif.	KCNO	570	
Altus, Okla.	KWHW	1450	
Alva, Okla.	KALV	1430	
Amarillo, Tex.	KBUY	1010	M
	KFDA	1440	A
	KGNC	710	N
	KIXZ	940	C
	KRAY	1360	
	KZIP	1310	
Ambridge, Pa.	WMBA	1460	
Americus, Ga.	WDEC	1290	
Ames, Iowa	KSAI	1430	
	WOI	640	
Amherst, N.S.	CKDH	1400	
Amherst, N.Y.	WUFO	1080	
Amite, La.	WABL	1570	
Amory, Miss.	WAMY	1580	
Amos, Que.	CHAD	1340	
Amsterdam, N.Y.	WAFS	1570	
	WCSS	1490	
Anaconda, Mont.	KANA	580	
Anacortes, Wash.	KAGT	1340	
Anaheim, Calif.	KEZY	1190	
Anchorage, Alaska	KBYR	1270	
	KFQD	730	C-A
	KENI	550	A-M-N
Andalusia, Ala.	WCTA	920	
Anderson, Calif.	KPON	1580	
Anderson, Ind.	WHUT	1470	M
	WHBU	1240	C
Anderson, S.C.	WAIM	1230	C
	WANS	1280	M
Andrews, Tex.	KACT	1360	
Annapolis, Md.	WANN	1190	
	WABW	810	
	WNAV	1430	
Ann Arbor, Mich.	WHRV	1600	M
	WPAG	1050	
Anna, Ill.	WRAJ	1440	
Anniston, Ala.	WANA	1490	
	WDNG	1450	A
	WHMA	1390	
Anoka, Minn.	KANO	1470	
Ansonia, Conn.	WADS	690	M
Antigo, Wis.	WATK	900	
Antigonish, N.S.	CJFX	580	
Apollo, Pa.	WAVL	910	
Apple Valley, Cal.	KAVR	960	
Appleton, Wis.	WAPL	1570	
	WHBY	1230	M
Arab, Ala.	WRAB	1380	
Arcadia, Fla.	WAPG	1480	
Arcata, Calif.	KENL	1340	
Ardmore, Okla.	KVSO	1240	A
Arecibo, P.R.	WCMN	1280	
	WMIA	1070	

Location	C.L.	Kc.	N.A.
	WNIK	1230	
Arkadelphia, Ark.	KVRC	1240	M
Arkan. City, Kans.	KSOK	1280	
Arlington, Fla.	WQTY	1220	
Arlington, Va.	WAVA	780	
	WEAM	1390	
Artesia, N.M.	KSVP	990	M
Arvada, Colo.	KDAB	1550	
Arroyo Grande, Calif.	KCGH	1280	
Ashburn, Ga.	WMES	1570	
Asbury Park, N.J.	WJLK	1310	
Asheboro, N.C.	WGWR	1260	
Asheville, N.C.	WISE	1310	
	WLOS	1380	N-M-A
	WSKY	1230	
	WWNC	570	C
Ashland, Ky.	WCMI	1340	C
	WTCR	1420	
Ashland, Ohio	WNCO	1340	
Ashland, Oreg.	KWIN	1400	M
	KRVC	1350	
Ashland, Va.	WIVE	1430	
Ashland, Wis.	WATW	1400	
Ashtabula, Ohio	WAQI	1600	
	WREO	970	
Aspen, Colo.	KSNO	5000	D
Astoria, Oreg.	KAST	1370	M
	KIAL	1230	
Atchison, Kans.	KARE	1470	
Athens, Ga.	WGAU	1340	C
	WDOL	1470	
	WRFC	960	
Athens, Ohio	WATH	970	
	WOUB	1340	
Athens, Tenn.	WLAR	1450	M
Athens, Tex.	KBUD	1410	
Atlanta, Ga.	WPLO	590	C
	WAKE	1340	
	WAOK	1380	
	WERD	860	
	WGKA	1600	
	WGST	920	A
	WIIN	970	
	WQXI	790	
	WSB	750	N
	WYZE	1480	C
Atlanta, Tex.	KALT	900	
Atlantic, Iowa	KJAN	1220	
Atlantic Beach, Fla.	WKTX	1600	
Atlantic City, N.J.	WFPG	1450	C
	WLDB	1490	A-M
	WMID	1340	A
Atmore, Ala.	WATM	1590	
Attleboro, Mass.	WARA	1320	
Auburn, Ala.	WAUD	1230	A
Auburn, Calif.	KAHI	950	
Auburn, N.Y.	WMBO	1340	M
	WAUB	1590	
Auburn, Wash.	KASY	1220	
Auburndale, Fla.	WTWB	1570	
Auburndale, Wis.	WLBL	930	
Augusta, Ga.	WAUG	1050	
	WBBQ	1340	M
	WBIA	1230	N
	WGAC	580	A
	WRDW	1480	C
Augusta, Maine	WRDO	1400	N
	WFAU	1340	M
Aurora, Colo.	KOSI	1430	M
Aurora, Ill.	WMRO	1280	
	WKKD	1580	
Aurora, Mo.	KSWM	940	
Austin, Minn.	KAUS	1480	M
	KQAQ	970	
Austin, Tex.	KNOW	1490	A
	KASE	970	
	KTBC	590	C
	KOKE	1370	
	KVET	1300	M
Avalon, Calif.	KBIG	740	
Avon Park, Fla.	WAVP	1390	
Avondale Estates, Ga.	WAVO	1420	
Aztec, N. Mex.	KNDE	1340	
Babylon, N.Y.	WBAB	1440	M
	WGLI	1290	
Bad Axe, Mich.	WLEW	1340	
Bainbridge, Ga.	WMGR	930	
	WAZA	1360	
Baker, Oreg.	KBKR	1490	
Bakersfield, Calif.	KAFY	550	M
	KBIS	970	
	KERN	1410	C
	KGEE	1230	
	KUZZ	800	
	KLYD	1350	
	KWAC	1490	
	KPMC	1560	A
Bellingham, Wash.	KPUG	1170	M
Baldwinsville, N.Y.	WSEN	1050	
Ballinger, Tex.	KRUN	1400	
Baltimore, Md.	WBAL	1090	N
	WBMD	750	
	WCAO	600	
	WCBM	680	C
	WFBR	1300	
	WITH	1230	M
	WSID	1010	
	WWIN	1400	A-M
Bamberg, S.C.	WWBD	790	
Bangor, Maine	WABI	910	A-M
	WGUY	1250	C
	WLBZ	620	N
Banning, Calif.	KPAS	1490	
Barbourville, Ky.	WBVL	950	
Bardstown, Ky.	WBRT	1320	
Barnesboro, Pa.	WNCC	950	
Barnwell, S.C.	WBAW	740	
Barre, Vt.	WSNO	1450	

Location	C.L.	Kc.	N.A.
Barrie, Ont.	CKBB	950	
Barstow, Calif.	KWTC	1230	A
	KIOT	1310	
Bartlesville, Okla.	KWON	1400	M
Bartow, Fla.	WBAR	1460	
Bassett, Va.	WODY	900	
Bastrop, La.	KTRY	730	
	KVOB	1340	
Batavia, N.Y.	WBTA	1490	M
Batesburg, S.C.	WBLR	1430	
Batesville, Ark.	KBTA	1340	
Batesville, Miss.	WBLE	1290	
Bath, Maine	WMMS	730	
Bath, N.Y.	WFSR	1580	
Baton Rouge, La.	WAIL	1460	M
	WYNE	1550	
	WYNK	1380	
	WIBR	1300	
	WJBO	1150	N
	WLCS	910	
	WXOK	1260	
Battle Creek, Mich.	WBCK	930	
	WELL	1400	A
Baxley, Ga.	WHAB	1260	
Bay City, Mich.	WBCM	1440	A
	WWBC	1250	
Bay City, Tex.	KIOX	1270	M
Bay Minette, Ala.	WBCA	1150	
Bayamon, P.R.	WRSJ	1560	
Baytown, Tex.	KWBA	1360	
Beacon, N.Y.	WBNR	1260	
Beardstown, Ill.	WRMS	790	
Beatrice, Nebr.	KWBE	1450	
Beaufort, N.C.	WBMA	1400	
Beaufort, S.C.	WBEU	960	
	WSIB	1490	
Beaumont, Tex.	KFDM	560	A
	KPYC	1450	
	KTRM	990	
Beaver Dam, Wis.	WBEV	1430	
Beaver Falls, Pa.	WBVP	1230	
Beckley, W. Va.	WJLS	560	C
	WWNR	620	
Bedford, Ind.	WBIW	1340	
Bedford, Pa.	WBFD	1310	
Bedford, Va.	WBLT	1350	
Beeville, Tex.	KIBL	1490	
Belen, N.Mex.	KARS	860	
Belgrade, Mont.	KGVW	630	
Bellaire, Ohio	WOMP	1290	M
Bellefontaine, Ohio	WOHP	1390	
Bellefonte, Pa.	WBLF	1330	
Bell Fourche, S.Dak.	KBFS	1450	
Belle Glade, Fla.	WSWN	900	
Belleville, Ont.	CJBQ	800	
Belleville, Ill.	WIBV	1260	
Bellevue, Wash.	KFKF	1330	
	KBVU	1540	
Bellingham, Wash.	KPUG	1170	M
	KGMI	790	A
	KOQT	1550	
Bellingham-Ferndale, Wash.	KENY	930	
Belmont, N.C.	WCGC	1270	M-A
Beloit, Wis.	WGEZ	1490	M
Belton, S.C.	WHPB	1390	
Belton, Tex.	KTON	940	
Belzoni, Miss.	WELZ	1460	
Bemidji, Minn.	KBUN	1450	M
Bend, Oreg.	KBND	1110	A
	KGRL	940	
Bennetsville, S.C.	WBSC	1550	M
Bennington, Vt.	WBTN	1370	
Benson, Minn.	KBMO	1290	
Benson, N.C.	WPYB	1580	
Benton, Ark.	KBBA	690	
Benton, Ky.	WCBL	1290	
Benton Harbor, Mich.	WHFB	1060	
Berkeley, Calif.	KRE	1400	
Berkeley Springs, W.Va.	WCST	1010	
Berlin, N.H.	WMOU	1230	
	WBRL	1400	
Berry Hill, Tenn.	WVOL	1470	
Berryville, Ark.	KTHS	1480	
Berwick, Pa.	WBRX	1280	
Bessemer, Ala.	WYAM	1450	
Bethesda, Md.	WUST	1120	
Bethlehem, Pa.	WGPA	1100	
Beverly, Mass.	WMLO	1570	
Biddeford, Maine	WIDE	1400	M
Big Delta, Alaska	WXLL	980	
Big Lake, Tex.	KBLT	1290	
Big Rapids, Mich.	WBRN	1460	
Big Sprg., Tex.	KBST	1490	A
	KHEM	1270	
	KBYG	1400	M
Big Stone Gap, Va.	WLSD	1220	
Biloxi, Miss.	WLOX	1490	M
	WVMI	570	
Billings, Mont.	KBMY	1240	M
	KGHL	790	N
	KOOK	970	C
	KOYN	910	
	KURL	730	
Binghamton, N.Y.	WINR	680	N
	WKOP	1360	M
	WNBF	1290	C
Birmingham, Ala.	WAPI	1070	N
	WBHM	1550	
	WBRC	960	A
	WCRT	1260	A
	WEZB	1220	
	WENN	1320	M
	WATV	900	C
	WSGN	610	
	WYDE	850	
	WVOK	690	
Bisbee, Ariz.	KSUN	1230	A

Location	C.L.	Kc.	N.A.
Bishop, Calif.	KIBS	1230	A
Bishopville, S.C.	WAGS	1380	
Bismarck, N.Dak.	KFYR	550	N
	KQDI	1350	
Bismarck-Mandan, N.Dak.	KBOM	1270	
Black Mountain, N.C.	WBMT	1350	
	WFGW	1010	
Black River Falls, Wis.	WWIS	1260	
Blackfoot, Idaho	KBLI	690	
Blackshear, Ga.	WBSG	1350	
Blackstone, Va.	WKLV	1440	
Blackwell, Okla.	KLTR	1580	
Blaine, Wash.	KARI	550	
Blakely, Ga.	WBBK	1260	
Blanding, Utah	KUTA	790	
Blind River, Ont.	CJNR	730	
Bloomington, Ill.	WJBC	1230	A
Bloomington, Ind.	WTTS	1370	A
Bloomsburg, Pa.	WCNR	930	
	WHLM	550	
Blountstown, Fla.	WKMK	1370	
Bluefield, W.Va.	WHIS	1440	N
	WKOY	1240	M
Blythe, Calif.	KYOR	1450	A
Blytheville, Ark.	KLCN	910	
Boaz, Ala.	WBSA	1300	
Boca Raton, Fla.	WFSG	730	
Bogalusa, La.	WIKC	1490	N
	WBOX	920	
Boise, Idaho	KATN	1010	
	KBOI	950	C
	KEST	790	
	KGEM	1140	M
	KIDO	630	N
	KYME	740	
Bolivar, Mo.	KBLR	1550	
Bonham, Tex.	KFYN	1420	
Boone, Iowa	KFGQ	1260	
	KWBG	1590	
Boone, N.C.	WATA	1450	
Boonville, Ind.	WBNL	1540	
Boonville, Mo.	KWRT	1370	
Booneville, Miss.	WBIP	1400	A
Boonville, N.Y.	WBRV	900	
Borger, Tex.	KHUZ	1490	M
	KBBB	1600	
Boston, Mass.	WBZ	1030	
	WCOP	1150	
	WILD	1090	
	WNAC	680	
	WEZE	1260	N
	WEEI	590	C
	WHDH	850	
	WMEX	1510	
	WORL	950	M
Boulder, Colo.	KBOL	1490	
	KDEY	1360	
Bowie, Tex.	KBAN	1410	
Bowling Green, Ky.	WKCT	930	A
	WBGN	1340	
	WLBJ	1410	M
Bowl. Green, Ohio	WMGS	730	
Bozeman, Mont.	KXXL	1450	N
	KBMN	1230	
Bradbury Hgts., Md.	WPGC	1580	
Braddock, Pa.	WLOA	1550	
Braddocks Heights, Md.	WMHI	1370	
Bradenton, Fla.	WTRL	1490	
	WBRD	1420	
Bradford, Pa.	WESB	1490	M
Brady, Tex.	KNEL	1490	
Brainerd, Minn.	KLIZ	1380	
Brampton, Ont.	CHIC	1090	
Brandon, Man.	CKX	1150	
Branson, Mo.	KBHM	1220	
Brantford, Ont.	CKPC	1380	
Brattleboro, Vt.	WTSA	1450	N
	WKVT	1490	
Brawley, Calif.	KROP	1300	A
Brazil, Ind.	WBZI	1380	
Breckenridge, Minn.	KBMW	1450	
Breckenridge, Tex.	KSTB	1430	
Bremen, Ga.	WWCC	1440	
Bremerton, Wash.	KBRO	1490	
Brenham, Tex.	KWHI	1280	
Brevard, N.C.	WPNF	1240	M-N
Brewster, N.Y.	WBRW	1510	
Brewton, Ala.	WEBJ	1240	M
Bridgeport, Ala.	WBTS	1480	
Bridgeport, Conn.	WICC	600	M
	WNAB	1450	A.M
Bridgeton, N.J.	WSNJ	1240	M
Bridgewater, N.S.	CKBW	1000	
Brigham City, Utah	KBUH	800	
Brighton, Colo.	KBRN	800	
Brinkley, Ark.	KBRI	1570	
Bristol, Conn.	WBIS	1440	
Bristol, Tenn.	WOPI	1490	N
	WYKE	1550	
Bristol, Va.	WCYB	690	A
	WFHG	980	M
Brockton, Mass.	WBET	1460	
	WOKW	1410	
Brockville, Ont.	CFJR	1450	
Broken Bow, Nebr.	KCNI	1280	
Brookfield, Mo.	KGHM	1470	
Brookhaven, Miss.	WCHJ	1470	
	WJMB	1340	M
Brookings, Oreg.	KURY	910	
Brookings, S.Dak.	KBRK	1430	
Brookline, Mass.	WBOS	1600	
Brooksville, Fla.	WWJB	1450	

Location	C.L.	Kc.	N.A.
Brownfield, Tex.	KTFY	1300	
Brownsville, Tex.	KBOR	1600	A
Brownwood, Tex.	KBWD	1380	M
	KEAN	1240	
Brunswick, Ga.	WGIG	1440	A
	WMOG	1490	
Brunswick, Maine	WCME	900	
Bryan, Tex.	KORA	1240	M
	WTAW	1150	
Buckhannon, W.Va.	WBUC	1460	
Buffalo, N.Y.	WBEN	930	C
	WYSL	1400	
	WEBR	970	M
	WGR	550	N
	WKBW	1520	N
	WWOL	1120	A
Buffalo, Wyo.	KBBS	1450	
Buford, Ga.	WDMF	1460	
Burbank, Calif.	KBLA	1490	
Burley, Idaho	KBAR	1230	A-M
Burlington, Iowa	KBUR	1490	A
Burlington, N.C.	WBBB	920	M
	WBAG	1150	
Burlington, Vt.	WCAX	620	N
	WDOT	1400	
	WJOY	1230	A
Burnett, Tex.	KTSL	1340	
Burns, Oreg.	KRNS	1230	
Butler, Ala.	WPRN	1220	
Butler, Mo.	KMAM	1530	
Butler, Pa.	WBUT	1050	
	WISR	680	
Butte, Mont.	KBOW	1490	C
	KOPR	550	M
	KXLF	1370	N
Cabano, Que.	CJAF	1340	
Cadillac, Mich.	WATT	1240	M
Caguas, P.R.	WNEL	1430	
	WVJP	1110	
Cairo, Ga.	WGRA	790	
Cairo, Ill.	WKRO	1490	
Calais, Maine	WQDY	1230	N
Caldwell, Idaho	KCID	1490	
	KBGN	910	
Calera, Ala.	WBYE	1370	
Calexico, Calif.	KICO	1490	A
Calgary, Alta.	CFAC	960	
	CBX	1010	
	CFCN	1060	
	CKXL	1140	
Calhoun, Ga.	WCGA	900	
Cambridge, Md.	WCEM	1240	
Cambridge, Mass.	WTAO	740	A
Cambridge, Ohio	WILE	1270	
Camden, Ark.	KAMD	910	
Camden, N.J.	WCAM	1310	
	WKDN	800	
Camden, S.C.	WACA	1590	
Camden, Tenn.	WFWL	1220	
Cameron, Tex.	KMIL	1330	
Camilla, Ga.	WCLB	1220	
Campbell, Ohio	WHOT	1330	
Campbellsville, Ky.	WTCO	1450	
Campbellton, N.B.	CKNB	950	
Camrose, Alta.	CFCW	790	
Canandaigua, N.Y.	WCGR	1550	
Cannon City, Colo.	KRLN	1400	M
Canonsburg, Pa.	WARO	540	
Canton, Ga.	WCHK	1290	
Canton, Ill.	WBYS	1560	
Canton, Miss.	WDOB	1370	
Canton, N.C.	WWIT	970	
Canton, Ohio	WCNS	900	M
	WHOF	1060	
	WHBC	1480	A
Canyon, Tex.	KVPH	1550	
Cape Girardeau, Mo.	KFVS	960	
	KGMO	1550	
Carbondale, Ill.	WCIL	1020	
Carbondale, Pa.	WCDL	1440	
Caribou, Maine	WFST	600	
Carlisle, Pa.	WHYL	960	
Carlsbad, N.Mex.	KAVE	1240	C
	KPBM	740	
Carmel, Calif.	KRML	1410	
Carmi, Ill.	WROY	1460	
Carnegie, Pa.	WZUM	1590	
Caro, Mich.	WKYO	1360	
Carrington, N.Dak.	KDAK	1600	
Carrizo Springs, Tex.	KBEN	1450	
Carroll, Iowa	KCIM	1380	
Carrollton, Ala.	WRAG	590	
Carrollton, Ga.	WLBB	1100	
Carrollton, Mo.	KAOL	1430	
Carson City, Nev.	KPTL	1300	
Cartersville, Ga.	WBHF	1450	M
	WKRW	1270	
Carthage, Ill.	WCAZ	990	
Carthage, Mo.	KDMO	1490	
Carthage, Tenn.	WRKM	1350	
Carthage, Tex.	KGAS	1590	
Caruthersville, Mo.	KCRV	1370	
Casa Grande, Ariz.	KPIN	1280	
Casper, Wyo.	KTWO	1470	C
	KATI	1400	
	KVOC	1230	A-M
Cayce, S.C.	WCAY	620	C
Cedar City, Utah	KSUB	590	C
Cedar Falls, Iowa	KCFI	1250	
Cedar Rapids, Iowa	KCRG	1600	A
	KHAK	1360	
	KLWN	1450	
	WMT	600	C
Cedartown, Ga.	WGAA	1340	
Celina, Ohio	WCSM	1350	
Center, Ala.	WEIS	990	
Center, Tex.	KDET	930	
Centerville, Iowa	KCOG	1400	
Centerville, Tenn.	WHLP	1570	
Centerville, Utah	KBBC	1600	
Central City, Ky.	WNES	1050	
	WMTA	1380	
Centralia, Ill.	WCNT	1210	
Centralia & Chehalis, Wash.	KELA	1470	
Centreville, Miss.	WLBS	1580	
Chadburn, N.C.	WVOE	1590	
Chadron, Nebr.	KCSR	1450	
Chambersburg, Pa.	WCHA	800	
	WCBG	1590	
Champaign, Ill.	WDWS	1400	C
Chanute, Kans.	KCRB	1460	
Chapel Hill, N.C.	WCHL	1360	
Chardon, Ohio	WGLD	1560	
Charleroi, Pa.	WESA	940	
Charles City, Iowa	KCHA	1580	
Charleston, Ill.	WEIC	1270	
Charleston, Mo.	KCHR	1350	
Charleston, S.C.	WCSC	1390	C
	WOKE	1340	A-M
	WPAL	730	
	WQSN	1450	
	WTMA	1250	N
Charleston, W.Va.	WCAW	680	
	WCHS	580	C
	WTGR	1490	A
	WKAZ	950	N
	WTIP	1240	M
	WXVA	1550	
Charlotte, Mich.	WCER	1390	
Charlotte, N.C.	WBT	1100	C
	WAYS	610	M
	WGIV	1600	
	WKTC	1310	
	WSOC	930	M
	WIST	1240	N
	WWOK	1480	
Charlotte Amalie, V.I.	WSTA	1340	
	WBNB	1000	
Charlottesville, Va.	WCHV	1260	A
	WELK	1010	
	WINA	1400	M
Charlottetown, P.E.I.	CFCY	630	
Chase City, Va.	WMEK	980	
Chatham, Ont.	CFCO	630	
Chattanooga, Tenn.	WMOC	1450	M
	WAPO	1150	A-M
	WDEF	1370	N
	WDOD	1310	C
	WDXB	1490	
	WNOO	1260	
Cheboygan, Mich.	WCBY	1240	
Cheektowaga, N.Y.	WNIA	1230	
Chehalis, Wash.	KITI	1420	
Chelan, Wash.	KOZI	1220	
Cheraw, S.C.	WCRE	1420	
Cherokee, Iowa	KCHE	1440	
Chester, Ill.	KSGM	980	
Chester, Pa.	WEEZ	1590	
	WVCH	740	
Chester, S.C.	WGCD	1490	
Cheyenne, Wyo.	KFBC	1240	A
	KCHY	1590	
	KRAE	1480	
	KVWO	1370	M
Chicago, Ill.	WAAF	950	
	WAIT	820	M
	WBBM	780	C
	WCFL	1000	
	WCRW	1240	
	WEDC	1240	
	WYNR	1390	
	WGN	720	M
	WIND	560	
	WJJD	1160	
	WLS	890	A
	WMAQ	670	N
	WMBI	1110	
	WSBC	1240	
Chicago Hgts., Ill.	WMPP	1470	
	WCGD	1600	
Chickasha, Okla.	KWCO	1560	
Chico, Calif.	KHSL	1290	C
	KPAY	1060	
Chicopee, Mass.	WACE	730	
Chicoutimi, Que.	CBJ	1580	
	CJMT	1420	
Childress, Tex.	KCTX	1510	
Chillicothe, Mo.	KCHI	1010	
Chillicothe, Ohio	WBEX	1490	A
	WCHI	1350	
Chilliwack, B.C.	CHWK	1270	
Chipley, Fla.	WBGC	1240	
Chippewa Falls, Wis.	WAXX	1150	
Christiansburg, Va.	WBCR	1260	
Christiansted, V.I.	WIVI	970	
Church Hill, Tenn.	WMCH	1260	
Churchill, Man.	CHFC	1230	
Cicero, Ill.	WHFC	1450	
Cincinnati, Ohio	WCKY	1530	M
	WCIN	1480	
	WCPO	1230	
	WKRC	550	C
	WLW	700	N-A
	WSAI	1360	
Clanton, Ala.	WKLF	980	
Clare, Mich.	WCRM	990	
Claremont, N.H.	WTSV	1230	
Claremore, Okla.	KWPR	1270	
Clarion, Pa.	WWCH	1300	
Clarksburg, W.Va.	WBOY	1400	N
	WHAR	1340	M
	WPDX	750	
Clarksdale, Miss.	WROX	1450	M
	WKDL	1600	
Clarksville, Ark.	KLYR	1360	
Clarksville, Tenn.	WJZM	1400	M
	WDXN	540	
Clarksville, Tex.	KCAR	1350	
Claxton, Ga.	WCLA	1470	
Clayton, Ga.	WGHC	1570	
Clayton, Mo.	KXLW	1320	
	KFUO	850	
Clayton, N.Mex.	KLMX	1450	
Clearfield, Pa.	WCPA	900	
Clearwater, Fla.	WTAN	1340	
	WAZE	860	
Cleburne, Tex.	KCLE	1120	
Clermont, Fla.	WSLC	1340	
Cleveland, Ga.	WRWH	1350	
Cleveland, Miss.	WCLD	1490	
	WDSK	1410	
Cleveland, Ohio	KYW	1100	
	WDOK	1260	M
	WERE	1300	
	WGAR	1220	C
	WHK	1420	
	WABQ	1540	
	WJW	850	N
Cleveland, Tenn.	WBAC	1340	M
	WCLE	1570	
Cleveland, Tex.	KVLB	1410	
Cleve. Hgts., Ohio	WJMO	1490	A
Clewiston, Fla.	WOWY	1590	
Clifton, Ariz.	KCLF	1400	A
Clifton Forge, Va.	WCFV	1230	M
Clincho, Va.	WDIC	1430	
Clinton, Ill.	WHOW	1520	
Clinton, Iowa	KCLN	1390	
	KROS	1340	M
Clinton, Mo.	KDKD	1260	
Clinton, N.C.	WRRZ	880	A
Clinton, Okla.	KWOE	1320	
Clinton, S.C.	WPCC	1410	
Clinton, Tenn.	WYSH	1380	
Cloquet, Minn.	WKLK	1230	
Clovis, N.Mex.	KCLV	1240	
	KICA	980	
Coachella, Calif.	KCHV	970	
Coalinga, Calif.	KBMX	1470	
Coatesville, Pa.	WCOJ	1420	
Cocoa, Fla.	WKKO	860	
	WEZY	1350	
Cocoa Beach, Fla.	WRKT	1300	
Cody, Wyo.	KODI	1400	A
Coeur d'Alene, Ida.	KVNI	1240	M
Coffeyville, Kans.	KGGF	690	A
Colby, Kans.	KXXX	790	
Coldwater, Mich.	WTVB	1590	
Coleman, Tex.	KSTA	1000	
Colfax, Wash.	KCLX	1450	
College Park, Ga.	WEAD	1570	
Colonial Heights, Va.	WPVA	1290	
Colonial Village, Tenn.	WSKT	1580	
Colorado City, Tex.	KVMC	1320	
Colo. Sprgs., Colo.	KROO	1240	
	KPIK	1580	
	KVOR	1300	C
	KSSS	740	
	KYSN	1460	M
Columbia, Ky.	WAIN	1270	
Columbia, Miss.	WCJU	1450	M
Columbia, Mo.	KFRU	1400	A
	KCGM	1580	
Columbia, Pa.	WCOY	1580	
Columbia, S.C.	WCOS	1400	A
	WIS	560	N
	WOIC	1320	C
	WNOK	1230	M
	WQXL	1470	
Columbia, Tenn.	WMCP	1280	
	WKRM	1340	
Columbus, Ga.	WDAK	540	N
	WRBL	1420	C
	WGBA	1270	M
	WCLS	1580	
	WOKS	1340	
Columbus, Ind.	WCSI	1010	
Columbus, Miss.	WACR	1050	
	WCBI	550	M
Columbus, Nebr.	KJSK	900	
	KTTT	1510	
Columbus, Ohio	WBNS	1460	C
	WCOL	1230	A
	WMNI	920	A
	WOSU	820	
	WTVN	610	
	WVKO	1580	
Colville, Wash.	KCVL	1270	
Commerce, Ga.	WJJC	1270	
Concord, Calif.	KWUN	1480	
Concord, N.H.	WKXL	1450	C
Concord, N.C.	WEGO	1410	
Concordia, Kans.	KNCK	1390	
	KFRM	550	A
Conneaut, Ohio	WWOW	1360	
Connellsville, Pa.	WCVI	1340	
Connersville, Ind.	WCNB	1580	
Conroe, Tex.	KMCO	900	
Conway, Ark.	KCON	1230	
	KVEE	1330	
Conway, N.H.	WBNC	1050	
Conway, S.C.	WLAT	1330	M
Cookeville, Tenn.	WHUB	1400	C
	WTPN	1550	
Coolidge, Ariz.	KCKY	1150	C
Coos Bay, Oreg.	KOOS	1230	M
	KYNG	1420	
Copper Hill, Tenn.	WLSB	1400	
Coquille, Oreg.	KWRD	630	
Coral Gables, Fla.	WRIZ	1550	
	WVCG	1070	
Corbin, Ky.	WCTT	680	M
	WYGO	1330	
Cordele, Ga.	WMJM	1490	M
Cordova, Alaska	KLAM	1450	
Corinth, Miss.	WCMA	1230	
Cornelia, Ga.	WCON	1450	
Corner Brook, Nfld.	CBY	790	
	CFCB	570	
Corning, Ark.	KCCB	1260	
Corning, N.Y.	WCBA	1350	
	WCLI	1450	A
Cornwall, Ont.	CJSS	1220	
	CFML	1110	
Corona, Calif.	KBUC	1370	
Corpus Christi, Tex.	KCTA	1030	M
	KCCT	1150	
	KEYS	1440	
	KRYS	1360	N
	KSIX	1230	A-M
	KUNO	1400	
Corry, Pa.	WOTR	1370	
Corsicana, Tex.	KAND	1340	
Cortez, Colo.	KVFC	740	
Cortland, N.Y.	WKRT	920	
Corvallis, Oreg.	KOAC	550	
	KFLY	1240	
	KLOO	1350	
Coshocton, Ohio	WTNS	1560	
Cottage Grove, Ore.	KNND	1400	
Cottonwood, Ariz.	KVRD	1240	
	KVIC	1600	
Coudersport, Pa.	WFRM	600	
Council Bluffs, Iowa	KFNF	920	
	KSWI	1560	M-A
Courtenay, B.C.	CFCP	1440	
Covington, Ga.	WGFS	1430	
Covington, La.	WARB	730	
Covington, Tenn.	WKBL	1250	
Covington, Va.	WKEY	1340	A
Cowan, Tenn.	WZYX	1440	
Craig, Colo.	KRAI	550	
Cranbrook, B.C.	CKEK	570	
Crane, Tex.	KCRR	1380	
Crescent City, Calif.	KPLY	1240	
	KPOD	1310	
Creston, Iowa	KSIB	1520	
Crestview, Fla.	WCNU	1010	
	WJSB	1050	
Crewe, Va.	WSVS	800	
Crockett, Tex.	KIVY	1290	
Crookston, Minn.	KRDX	1260	
Crossett, Ark.	KAGH	800	
Crossville, Tenn.	WAEW	1330	
Crowley, La.	KSIG	1450	M
Cuero, Tex.	KCFH	1600	
Cullman, Ala.	WFMH	1460	
	WKUL	1340	
Culpeper, Va.	WCVA	1490	M
Cumberland, Ky.	WCPM	1280	
Cumberland, Md.	WCUM	1230	C
	WTBO	1450	
Cummings, Ga.	WSNE	1410	
Cushing, Okla.	KUSH	1600	
Cuyahoga Falls, Ohio	WCVE	1150	
Cypress Gardens, Fla.	WGTO	540	
Cynthiana, Ky.	WCYN	1400	
Dade City, Fla.	WDCF	1350	
Dadeville, Ala.	WDVC	910	
Dalhart, Tex.	KXIT	1410	
Dallas, N.C.	WAAK	960	
Dallas, Oreg.	KROW	1460	
Dallas, Tex.	KRLD	1080	C
	KIXL	1040	
	KSKY	660	
	KLIF	1190	
	WFAA	570	A
	WFAA	820	N
	KBOX	1480	
	WRR	1310	M
The Dalles, Oreg.	KACI	1300	
	KODL	1440	A
Dalton, Ga.	WBLJ	1230	M
	WRCD	1430	
Danbury, Conn.	WLAD	800	
Danville, Ill.	WDAN	1490	C
	WITY	980	
Danville, Ky.	WHIR	1230	M
Danville, Va.	WBTM	1330	A
	WYPR	970	
	WDVA	1250	M
	WILA	1580	
Darlington, S.C.	WOAR	1350	
Dauphin, Man.	CKDM	730	
Davenport, Iowa	WOC	1420	N
	KWNT	1580	
	KSTT	1170	M
Dawson, Ga.	WDWD	990	
Dawson, Yukon T.	CFYT	1230	
Dawson Creek, B.C.	CJDC	560	
Dayton, Ohio	WHIO	1290	C
	WING	1410	
	WONE	980	
	WAVI	1210	
Dayton, Tenn.	WDNT	1280	
Daytona Beach, Fla.	WNDB	1150	M-A
	WMFJ	1450	
	WROD	1340	
Deadwood, S.Dak.	KDSJ	980	
Dearborn, Mich.	WKMH	1310	M
Decatur, Ala.	WHOS	800	
	WAJF	1490	
	WMSL	1400	M

Location	C.L.	Kc.	N.A.
Decatur, Ga.	WGUN	1010	A
Decatur, Ill.	WDZ	1050	
	WSOY	1340	C
Decorah, Iowa	KDEC	1240	
	KWLC	1240	
Deerfield, Va.	WABH	1150	
Defiance, Ohio	WONW	1280	
De Funiak Springs, Fla.			
	WDSP	1280	
	WZEP	1460	
De Kalb, Ill.	WLBK	1360	
De Land, Fla.	WJBS	1490	
	WOOO	1310	
Delano, Calif.	KCHJ	1010	
Delaware, Ohio	WDLE	1550	
Delray, Bch., Fla.	WDBF	1420	
Del Rio, Tex.	KDLK	1230	
Delta, Colo.	KDTA	1400	
Deming, N.Mex.	KOTS	1230	
Demopolis, Ala.	WXAL	1400	M
	WJWT	1350	
Denham Sprgs., La.	WLBI	1220	
Denison, Iowa	KDSN	1580	
Denison, Tex.	KDSX	950	
Denton, Tex.	KDNT	1440	
Denver, Colo.	KDEN	1340	
	KFML	1390	
	KHOW	630	A
	KIMN	950	A
	KLIR	990	
	KLZ	560	C
	KBTR	710	
	KOA	850	N
	KPOF	910	
	KFSC	1220	
	KTLN	1280	
Denver City, Tex.	KKAL	1580	
De Queen, Ark.	KDQN	1390	
DeRidder, La.	KDLA	1010	
Des Moines, Iowa	KCBC	1390	A
	KIOA	940	M
	KRNT	1350	C
	KSO	1460	
	KWKY	1150	M
	WHO	1040	N
Detroit, Mich.	WCAR	1130	
	WJBK	1500	
	WJLB	1400	
	WJR	760	
	WWJ	950	N
	WXYZ	1270	A
Detroit Lakes, Minn.			
	KDLM	1340	
Devils Lake, N.Dak.			
	KDLR	1240	M
Dexter, Mo.	KDEX	1590	
Diboll, Tex.	KSPL	1260	
Dickinson, N.Dak.	KDIX	1230	
Dickson, Tenn.	WDKN	1260	
Dillon, Mont.	KDBM	800	
Dillon, S.C.	WOSC	800	A
Dinuba, Calif.	KROU	1130	
Dixon, Ill.	WIXN	1460	
Dodge City, Kans.	KGNO	1370	M
	KEDD	1550	
Dothan, Ala.	WAGF	1320	
	WDIG	1450	M
	WOOF	560	
Douglas, Ariz.	KAWT	1450	M
	KAPR	930	
Douglas, Ga.	WDMG	860	
	WOKA	1310	
Douglas, Wyo.	KWIV	1050	
Dover, Del.	WDOV	1410	M
	WKEN	1600	A
Dover, N.H.	WTSN	1270	
Dover, N.J.	WRAN	1510	
Dover, Ohio	WJER	1450	
Dowagiac, Mich.	WDOW	1440	
Doylestown, Pa.	WBUX	1570	
Drumheller, Alta.	CJOV	910	
Drummondville, Que.			
	CHRD	1340	
Dublin, Ga.	WMLT	1330	
	WXLI	1230	
Du Bois, Pa.	WCED	1420	C
Dubuque, Iowa	KDTH	1370	A
	WDBQ	1490	M
Duluth, Minn.	KDAL	610	C
	WEBC	560	
	KAOH	1390	
Dumas, Tex.	KDDD	800	
Duncan, Okla.	KRHD	1350	M
Dundalk, Md.	WAYE	860	
	WEBB	1360	
Dundee, N.Y.	WFLR	1570	
Dunkirk, N.Y.	WDOE	1410	
Dunn, N.C.	WCKB	780	
Du Quoin, Ill.	WDQN	1580	
Durango, Colo.	KIUP	930	
	KDGO	1240	
Durant, Okla.	KSEO	750	
Durham, N.C.	WDNC	620	C
	WSRC	1410	
	WSSB	1490	
	WTIK	1310	A
Dyersburg, Tenn.	WDSG	1450	
	WTRO	1330	
Eagle Pass, Tex.	KEPS	1270	
Eagle River, Wis.	WERL	950	
Easley, S.C.	WELP	1360	
E. Grand Forks, Minn.			
	KRAO	1590	
Eastland, Tex.	KERC	1590	
E. Lansing, Mich.	WKAR	870	
E. Liverpool, Ohio	WOHI	1490	A
East Longmeadow, Mass.			
	WTYM	1600	
Eastman, Ga.	WPFE	1580	

Location	C.L.	Kc.	N.A.
E. Moline, Ill.	WDLM	960	
E. Point, Ga.	WTJH	1260	
E. St. Louis, Ill.	WBBR	1490	A
Easton, Md.	WEMD	1460	
Easton, Pa.	WEEX	1230	
	WEST	1400	N
Eatontown, N.J.	WHTG	1410	
Eau Claire, Wis.	WEAQ	790	N
	WBIZ	1400	M
	WECL	1050	
Eau Gallie, Fla.	WMEG	920	
Ebensburg, Pa.	WEND	1580	
Edenton, N.C.	WCDJ	1260	
Edinburg, Tex.	KURV	710	
Edmonds, Wash.	KGDN	630	
Edmonton, Alta.	CBXA	740	
	CFRN	1260	
	CHED	630	
	CHFA	680	
	CJCA	930	
	CKUA	580	
Edmundston, N.C.	CJEM	570	
Effingham, Ill.	WCRA	1090	
Elba, Ala.	WELB	1350	
Elberton, Ga.	WSGC	1400	
El Cajon, Calif.	KDEO	910	A
El Campo, Tex.	KULP	1390	
El Centro, Calif.	KXO	1230	M
	KAMP	1430	
El Dorado, Ark.	KDMS	1290	
	KELD	1400	A
Eldorado, Kans.	KBTO	1360	
Eldorado Springs, Mo.			
	KESM	1580	
Elgin, Ill.	WRMN	1410	
Elizabeth City, N.C.			
	WCNC	1240	
	WGAI	560	M
Elizabethton, Tenn.	WBEJ	1240	
Elizabethtown, Ky.	WIEL	1400	
Elizabethtown, N.C.			
	WBLA	1440	
Elizabethtown, Pa.	WEZN	1600	
Elk City, Okla.	KBEK	1240	A
Elkhart, Ind.	WTRC	1340	N
	WCMR	1270	
Elkin, N.C.	WIFM	1540	
Elkins, W.Va.	WDNE	1240	
Elko, Nev.	KELK	1240	M
Elkton, Md.	WSER	1550	
Ellensburg, Wash.	KXLE	1240	
Ellsworth, Me.	WDEA	1350	
Elmira, N.Y.	WELM	1410	A-C
	WENY	1230	N
Elmira Heights-Horseheads, N.Y.			
	WEHH	1590	M
El Paso, Tex.	KROD	600	C
	KELP	920	
	KPBR	1530	
	KHEY	690	
	KINT	1590	
	KIZZ	1150	
	KSET	1340	M
	KTSM	1380	N
El Reno, Okla.	KELR	1460	
Ely, Minn.	WELY	1450	M
Ely, Nev.	KELY	1230	
Elyria, Ohio	WEOL	930	
Eminence, Ky.	WSTL	1600	
Emporia, Kans.	KVOE	1400	
Emporia, Va.	WEVA	860	
Emporium, Pa.	WLEM	1250	
Endicott, N.Y.	WENE	1430	A
Englewood, Colo.	KGMC	1150	
Englewood, Fla.	WENG	1530	
Enid, Okla.	KCRC	1390	A
	KGWA	960	M
Enterprise, Ala.	WIRB	600	
Enterprise, Oreg.	KWVR	1340	
Ephrata, Pa.	WGSA	1310	
Ephrata, Wash.	KULF	730	
Erie, Pa.	WWYN	1260	A
	WICU	1330	N
	WJET	1400	M
	WLEU	1450	
Erwin, Tenn.	WEMB	1420	
Escanaba, Mich.	WDBC	680	M
	WLST	600	A
Escondido, Calif.	KDWN	1450	
Estevan, Sask.	CJSL	1280	
Estherville, Iowa	KLIL	1340	
Etowah, Tenn.	WCPH	1220	
Eufaula, Ala.	WULA	1240	M
Eugene, Oreg.	KORE	1450	M
	KPIR	1500	
	KASH	1600	A
	KATR	1320	
	KERG	1280	C
	KUGN	590	N
Eunice, La.	KEUN	1490	M
Eureka, Calif.	KINS	980	C
	KDAN	790	
	KRED	1480	M
Eustis, Fla.	WLCO	1240	
Evanston, Ill.	WEAW	1330	
	WNMP	1590	
Evanston, Wyo.	KLUK	1240	
Evansville, Ind.	WROZ	1400	C
	WGBF	1280	N
	WIKY	820	
	WJPS	1330	A
Eveleth, Minn.	WEVE	1340	M
Everett, Wash.	KRKO	1380	
	KWYZ	1230	
Evergreen, Ala.	WBLO	1470	
Fairbanks, Alaska			
	KFAR	610	A-M-N
	KFRB	900	C-A

Location	C.L.	Kc.	N.A.
Fairbury, Nebr.	KGMT	1310	
Fairfax, Va.	WEEL	1310	
Fairfield, Ill.	WFIW	1390	
Fairfield, Iowa	KMCD	1570	
Fairhope, Ala.	WABF	1220	
Fairmont, Minn.	KSUM	1370	M
Fairmont, N.C.	WFMO	860	
Fairmont, W.Va.	WMMN	920	C
	WTCS	1490	A
Fajardo, P.R.	WMDD	1480	
Falfurrias, Tex.	KPSO	1260	
Fall River, Mass.	WALE	1400	M
	WSAR	1480	A
Falls Church, Va.	WFAX	1220	
Falls City, Nebr.	KTNC	1230	
Fargo, N.Dak.	WDAY	970	N
	KFNW	900	
	KUTT	1550	
	KFGO	790	A
Faribault, Minn.	KDHL	920	
Farmington, Me.	WKTJ	1380	
Farmington, Mo.	KREI	800	
Farmington, N.M.	KENN	1390	
	KWYK	960	
	KRZE	1280	
Farmville, N.C.	WFAG	1250	
Farmville, Va.	WFLO	870	
Farrell, Pa.	WFAR	1470	
Farwell, Tex.	KZOL	1570	
Fayette, Ala.	WWWF	990	
Fayetteville, Ark.	KHOG	1440	
	KFAY	1250	M
Fayetteville, N.C.	WFAI	1230	C
	WFNC	940	M
	WFLB	1490	A
	WIDU	1600	
Fayetteville, Tenn.			
	WEKR	1240	M
Fergus Falls, Minn.			
	KOTE	1250	M
Fernandina Beach, Fla.			
	WPAP	1570	
Ferriday, La.	KFNV	1600	
Festus, Mo.	KJCF	1400	
	KXEN	1010	
Findlay, Ohio	WFIN	1330	
Fisher, W.Va.	WELD	690	A
Fitchburg, Mass.	WEIM	1280	M
	WFGM	960	
Fitzgerald, Ga.	WBHB	1240	M
Flagstaff, Ariz.	KCLS	600	N
	KFGT	1000	
	KJKJ	1400	
	KVNA	690	A
	KEOS	1290	
Flat River, Mo.	KFMO	1240	M
Flin Flon, Man.	CFAR	590	
Flint, Mich.	WFDF	910	N
	WTRX	1330	A
	WAMM	1420	
	WMRP	1570	
	WKMF	1470	M
	WTAC	600	A
Flomaton, Ala.	WTCB	990	
Florence, Ala.	WJOI	1340	M
	WOLS	1230	
	WOWL	1240	A
Florence, S.C.	WJMX	970	A
	WYNN	540	
Floydada, Tex.	KFLD	900	
Foley, Ala.	WHEP	1310	
Fond du Lac, Wis.	KFIZ	1450	M
Fordyce, Ark.	KBJT	1570	
Forest, Miss.	WMAG	860	
Forest City, N.C.	WBBO	780	
	WAGY	1320	
Forest Grove, Oreg.	KGGG	1570	
Forrest City, Ark.	KXJK	950	
Ft. Bragg, Calif.	KDAC	1230	
Ft. Collins, Colo.	KCOL	1410	A
	KZIX	600	
Ft. Dodge, Iowa	KVFD	1400	M
	KWMT	540	A
Ft. Frances, Ont.	CFOB	800	
Ft. Knox, Ky.	WSAC	1470	
Ft. Lauderdale, Fla.	WFTL	1400	
	WWIL	1580	
Ft. Madison, Iowa	KXGI	1360	
Ft. Morgan, Colo.	KFTM	1400	
Ft. Myers, Fla.	WINK	1240	C
	WMYR	1410	
Ft. Payne, Ala.	WFPA	1400	
	WZOB	1250	
Ft. Pierce, Fla.	WARN	1330	
	WIRA	1400	
Ft. Saint John, B.C.			
	CKNL	970	
Ft. Scott, Kans.	KMOD	1600	
Ft. Simpson, NWT.			
	CFMR	1490	
Ft. Smith, Ark.	KFPW	1230	C
	KFSA	950	A
	KTCS	1410	M
	KWHN	1320	
Ft. Stockton, Tex.	KFST	860	
Ft. Valley, Ga.	WFPM	1150	
Ft. Walton Beach, Fla.			
	WNUE	950	
	WFTW	1260	
Ft. Wayne, Ind.	WGL	1250	A
	WOWO	1190	
	WANE	1450	C
	WKJG	1380	N
Ft. William, Ont.	CKPR	580	
	CJLX	800	
Ft. Worth, Tex.	KJIM	870	
	KCUL	1540	
	KFJZ	1270	
	KNOK	970	

Location	C.L.	Kc.	N.A.
	WBAP	570	A
	WBAP	820	N
	KXOL	1360	
Fostoria, Ohio	WFOB	1430	
Fountain City, Tenn.			
	WFCT	1430	
	WROL	1490	
Fountain Inn, S.C.	WFIS	1600	
Fowler, Calif.	KLIP	1220	
Framingham, Mass.	WKOX	1190	
Frankfort, Ind.	WILO	1570	
Frankfort, Ky.	WFKY	1490	M
Franklin, Ky.	WFKN	1220	
Franklin, La.	KFRA	1390	
Franklin, N.C.	WFSC	1050	
Franklin, Pa.	WFRA	1430	
Franklin, Tenn.	WAGG	950	
Franklin, Va.	WYSR	1250	
Frederick, Md.	WFMD	930	C
Frederick, Okla.	KTAT	1570	
Fredericksburg, Tex.			
	KNAF	910	M
Fredericksburg, Va.	WFVA	1230	A
	WFLS	1350	
Fredericton, N.B.	CFNB	550	
Fredericktown, Mo.			
	KFTW	1450	
Fredonia, N.Y.	WBUZ	1570	
Freeport, Ill.	WFRL	1570	
Freeport, N.Y.	WGBB	1240	
Freeport, Tex.	KBRZ	1460	
Fremont, Mich.	WBFC	1490	
	WSHN	1550	
Fremont, Nebr.	KHUB	1340	
Fremont, Ohio	WFRO	900	
Fresno, Calif.	KARM	1430	A
	KBIF	900	
	KIRV	1510	
	KEAP	980	
	KXEX	1550	
	KFRE	940	C
	KGST	1600	
	KMAK	1340	
	KMJ	580	N
	KYNO	1300	
Front Royal, Va.	WFTR	1450	M
Frostburg, Md.	WFRB	560	
Fulton, Ky.	WFUL	1270	
Fulton, Mo.	KFAL	900	
Fulton, N.Y.	WOSC	1300	
Fuquay Sprgs., N.C.			
	WFVG	1460	
Gadsden, Ala.	WGAD	1350	A
	WETO	930	M
	WAAX	570	
Gaffney, S.C.	WFGN	1570	
Gainesville, Fla.	WDVH	980	
	WGGG	1230	M
	WRUF	850	N
Gainesville, Ga.	WGGA	550	C
	WDUN	1240	A
	WLBA	1580	
Gainesville, Tex.	KGAF	1580	
Gaithersburg, Md.	WHMC	1150	
Galax, Va.	WBOB	1360	M
Galesburg, Ill.	WGIL	1400	
	WAIK	1590	A
Gallatin, Tenn.	WHIN	1010	
Gallipolis, Ohio	WJEH	990	
Gallup, N. Mex.	KGAK	1330	A
	KYVA	1230	
Galt, Ont.	CKGR	1110	
Galveston, Tex.	KILE	1400	
	KGBC	1540	
Gander, Nfld.	CBG	1450	
Garden City, Kans.	KNCO	1050	
	KIUL	1240	M
Gardner, Mass.	WGAW	1340	
Gary, Ind.	WWCA	1270	
	WGRY	1370	
Gastonia, N.C.	WGNC	1450	A
	WLTC	1370	
Gate City, Va.	WGAT	1050	
Gaylord, Mich.	WATC	900	
Geneva, Ala.	WGEA	1150	
Geneva, Ill.	WGSB	1480	
Geneva, N.Y.	WGVA	1240	A
Georgetown, Del.	WJWL	900	
Georgetown, Ky.	WAXU	1580	
Georgetown, S.C.	WGTN	1400	M
Gettysburg, Pa.	WGET	1320	M
Gillette, Wyo.	KIML	1490	
Gilroy, Calif.	KPER	1290	
Gladewater, Tex.	KEES	1430	
Glasgow, Ky.	WKAY	1490	
	WCDS	1440	D
Glasgow, Mont.	KLTZ	1240	
Glendale, Ariz.	KRUX	1360	
Glendale, Calif.	KIEV	870	
Glendive, Mont.	KXGN	1400	
	KGLE	590	
Glens Falls, N.Y.	WSET	1410	
	WWSC	1450	A
Glenville, Ga.	WKIG	1580	
Glenwood Sprgs., Colo.			
	KGLN	980	M
Globe, Ariz.	KZOW	1240	A
Gloucester, Va.	WDDY	1420	
Gloversville-Johnston, N.Y.			
	WENT	1340	C
Gold Beach, Oreg.	KBLY	1220	
Golden, Colo.	KICM	1250	
Golden Valley, Minn.			
	KEVE	1440	M
	KUXL	1570	

Location	C.L.	Kc.	N.A.
Goldsboro, N.C.	WFMC	730	
	WGBR	1150	A
	WGOL	1300	
Gonzales, Tex.	KCTI	1450	
Goodland, Kans.	KLOE	730	M
Goose Bay, Nfld.	CFGB	1340	
Goshen, Ind.	WKAM	1460	
Grafton, N.D.	KGPC	1340	
Grafton, W.Va.	WVVW	1260	
Graham, Tex.	KSWA	1330	
Granby, Que.	CHEF	1450	
Grand Coulee, Wash.	KFDR	1360	
Grande Prairie, Alta.	CFGP	1050	
Grand Falls, Nfld.	CBT	540	
Grand Forks, N.D.	KFJM	1370	
	KILO	1440	C
	KNOX	1310	M
Grand Haven, Mich.	WGHN	1370	
Grand Island, Nebr.	KMMJ	750	A
	KRGI	1430	
Grand Junction, Colo.	KREX	920	C
	KEXO	1230	A
	KSTR	620	
	KWSL	1340	
Grand Prairie, Tex.	KPCW	730	
Grand Rapids, Mich.	WJEF	1230	C
	WFUR	1570	
	WGRD	1410	
	WLAV	1340	A
	WMAX	1480	M
	WOOD	1300	N
Grand Rapids, Minn.	KOZY	1490	M
Grangeville, Idaho	KORT	1230	
Granite City, Ill.	WGNU	920	
Grants, N.Mex.	KMIN	980	
Grants Pass, Oreg.	KAGI	930	M
	KAJO	1270	
Gravelbourg, Sask.	CFGR	1230	
	CFRG	710	
Grayson, Ky.	WGOH	1370	
Gt. Barrington, Mass.	WSBS	860	
Gt. Bend, Kans.	KVGB	1590	N
Gt. Falls, Mont.	KFBB	1310	C
	KUDI	1450	
	KMON	560	M
	KARR	1400	N
Greeley, Colo.	KFKA	1310	
	KYOU	1450	
Green Bay, Wis.	WBAY	1360	C
	WJPG	1440	M
	WDUZ	1400	A
Greeneville, Tenn.	WGRV	1340	
	WSMG	1450	
Greenfield, Mass.	WHAI	1240	M
Greensboro, N.C.	WBIG	1470	C
	WCOG	1320	
	WEAL	1510	
	WGBG	1400	A
	WPET	950	
Greensburg, Pa.	WHJB	620	
Greenville, Ala.	WGYV	1380	
Greenville, Mich.	WPLB	1380	
Greenville, Miss.	WJPR	1330	
	WDDT	900	
	WGVM	1260	
Greenville, Pa.	WGRP	940	
Greenville, N.C.	WGTC	1590	M
	WOOW	1340	
Greenville, S.C.	WESC	660	
	WFBC	1330	N
	WMRB	1490	C-M
	WMUU	1260	
	WQOK	1440	C
Greenville, Tex.	KGVL	1400	
Greenwood, Miss.	WABG	960	A
	WGRM	1240	N
Greenwood, S.C.	WCRS	1450	N
	WGSW	1350	
Greer, S.C.	WEAB	800	
	WCKI	1300	A
Grenada, Miss.	WNAG	1400	M
Gresham, Oreg.	KGRO	1230	
Gretna, Va.	WMNA	730	
Griffin, Ga.	WKEU	1450	M
	WHIE	1320	
	WRIX	1410	
Grinnell, Iowa	KGRN	1410	
Groton, Conn.	WSUB	980	
Grove City, Pa.	WSAJ	1340	
Grundy, Va.	WNRG	940	
Guayama, P.R.	WXRF	1590	
Guelph, Ont.	CJOY	1460	
Gulfport, Miss.	WROA	1390	
	WGCM	1240	A
Gunnison, Colo.	KGUC	1490	
Guntersville, Ala.	WGSV	1270	
Guthrie, Okla.	KWRW	1490	
Guymon, Okla.	KGYN	1220	
Hagerstown, Md.	WARK	1490	C
	WJEJ	1240	A-M
Haines City, Fla.	WHAN	930	
Haleyville, Ala.	WJBB	1230	M
Halfway, Md.	WDDW	1410	
	WHAG	1410	
Halifax, N.S.	CBH	790	
	CHNS	960	
	CJCH	920	
Hamden, Conn.	WDEE	1220	
Hamilton, Ala.	WERH	970	
Hamilton, Mont.	KYLQ	960	
Hamilton, Ohio	WMOH	1450	
Hamilton, Ont.	CHIQ	1280	
	CHML	900	
	CKOC	1150	
Hamilton, Tex.	KCLW	900	
Hamlet, N.C.	WKDX	1400	
Hammond, Ind.	WJOB	1230	
Hammond, La.	WFPR	1400	
Hammonton, N.J.	WNJH	1580	
Hampton, S.C.	WBHC	1270	
Hampton, Va.	WVEC	1490	
Hancock, Mich.	WMPL	920	
Hanford, Calif.	KNGS	620	
Hannibal, Mo.	KHMO	1070	
Hanover, N.H.	WTSL	1400	
	WDCR	1340	
Hanover, Pa.	WHVR	1280	
Harlan, Ky.	WHLN	1410	
Harlingen, Tex.	KGBT	1530	
Harriman, Tenn.	WHBT	1600	
Harrisburg, Ill.	WEBQ	1240	
Harrisburg, Pa.	WHGB	1400	A
	WCMB	1460	M
	WHP	580	C
	WKBO	1230	N
Harrison, Ark.	KHOZ	900	
Harrisonburg, Va.	WHBG	1360	
	WSVA	550	N
Harrodsburg, Ky.	WHBN	1420	
Hartford, Conn.	WDRC	1360	C
	WCCC	1290	M
	WPOP	1410	M-A
	WTIC	1080	N
Hartford, Wis.	WTKM	1540	
Hartselle, Ala.	WHRT	860	
Hartsville, S.C.	WHSC	1450	M
Hartwell, Ga.	WKLY	980	
Harvard, Ill.	WMCW	1600	
Harvey, Ill.	WBEE	1570	
Hastings, Mich.	WBCH	1220	
Hastings, Nebr.	KHAS	1230	
Hattiesburg, Miss.	WBKH	950	
	WFOR	1400	N
	WHSY	1230	A
	WXXX	1310	
Hauterive, Que.	CHLC	580	
Havelock, N.C.	WUSM	1330	
Haverhill, Mass.	WHAV	1490	
Havre, Mont.	KOJM	610	M
Havre de Grace, Md.	WASA	1330	
Hawkinsville, Ga.	WCEH	610	
Haynesville, La.	KLUV	1580	
Hays, Kans.	KAYS	1400	
Hayward, Wis.	WHSM	910	
Hazard, Ky.	WKIC	1390	M
Hazelhurst, Ga.	WVOH	920	D
Hazlehurst, Miss.	WMDC	1220	
Hazleton, Pa.	WAZL	1490	N-M
	WTHT	1300	
Helena, Ark.	KFFA	1360	M
Helena, Mont.	KCAP	1340	M
	KBLL	1240	N
Hemet, Calif.	KHSJ	1320	
Hempstead, N.Y.	WHLI	1100	
Henderson, Ky.	WSON	860	
Henderson, Nev.	KBMI	1400	
	KTOO	1280	
Henderson, N.C.	WHNC	890	M
	WIZS	1450	
Henderson, Tex.	KGRI	1000	
	KWRD	1470	
Hendersonville, N.C.	WHKP	1450	A
Henryetta, Okla.	KHEN	1590	
Hereford, Tex.	KPAN	860	
Herkimer, N.Y.	WALY	1420	
Hermiston, Oreg.	KOHU	1570	
Herrin, Ill.	WJPF	1340	M
Hettinger, N.Dak.	KNDC	1490	
Hibbing, Minn.	WMFG	1240	N
Hickory, N.C.	WHKY	1290	A
	WIRC	630	
Highland Park, Ill.	WNSH	1430	
Highland Park, Tex.	KVIL	1150	
Highland Springs, Va.	WENZ	1450	
High Point, N.C.	WMFR	1230	A
	WNOS	1590	
	WHPE	1070	
Hillsboro, Ohio	WSRW	1590	
Hillsboro, Oreg.	KUIK	1360	
Hillsboro, Tex.	KHBR	1560	
Hillsdale, Mich.	WCSR	1340	
Hillsville, Va.	WHHV	1400	
Hilo, Hawaii	KHBC	970	C
	KIPA	1110	
	KIMO	850	M
Hinesville, Ga.	KGML	990	
Hinton, W. Va.	WMTD	1380	
Hobart, Okla.	KTJS	1420	
Hobbs, N.Mex.	KWEW	1480	M
	KHOB	1390	
Holbrook, Ariz.	KDJI	1270	
Holdrege, Nebr.	KUVR	1380	
Holland, Mich.	WHTC	1450	
	WJBL	1260	
Hollister, Calif.	KGHT	1320	
Hollywood, Fla.	WGMA	1320	
Holly Hill, S.C.	WHHL	1440	D
Holyoke, Mass.	WREB	930	
Homer, La.	KHAL	1320	
Homestead, Fla.	WSDB	1430	
Homewood, Ala.	WJLD	1400	
	KAIM	870	
Honolulu, Hawaii	KGMB	590	C
	KZOO	1210	
	KHAI	1090	
	KPOI	1380	
	KIKI	830	
	KGU	760	N
	KHVH	1040	
	KORL	650	M
	KNDI	1270	
	KOHO	1170	
	KTRG	990	
	KULA	690	A
Hood River, Oreg.	KIHR	1340	
Hope, Ark.	KXAR	1490	
Hopewell, Va.	WHAP	1340	
Hopkinsville, Ky.	WHOP	1230	C
	WKOA	1480	
Hoquiam, Wash.	KHOK	1560	
Hornell, N.Y.	WWHG	1320	
	WLEA	1480	M
Hot Springs, Ark.	KAAB	1340	A
	KBHS	590	
	KZNG	1470	M
Hot Springs, S. Dak.	KOBH	580	
Houghton, Mich.	WHDF	1400	
Houghton Lake, Mich.	WHGR	1290	
Houlton, Maine	WHOU	1340	
Houma, La.	KCIL	1490	N
Houston, Miss.	WCPC	1320	
Houston, Mo.	KHTN	1250	
Houston, Tex.	KCOH	1430	
	KILT	610	
	KNUZ	1230	
	KODA	1010	
	KPRC	950	N
	KTHT	790	
	KTRH	740	C
	KXYZ	1320	A
	KYOK	1590	
Howell, Mich.	WHMI	1350	
Hudson, N.Y.	WHUC	1230	
Hugo, Okla.	KIHN	1340	
Hull, Que.	CKCH	970	
Humacao, P.R.	WALO	1240	
Humboldt, Tenn.	WIRJ	740	
Huntingdon, Pa.	WHUN	1150	
Huntington, Ind.	WHLT	1300	
Huntington, N.Y.	WGSM	740	
Huntington, W.Va.	WKEE	800	M-A
	WSAZ	930	N
	WWHY	1470	M
Huntsville, Ala.	WBHP	1230	M
	WEUP	1600	
	WFIX	1450	
	WAAY	1550	A
Huntsville, Ont.	CKAR	630	
Huntsville, Tex.	KSAM	1490	
Huron, S.Dak.	KIJV	1340	
Hutchinson, Kans.	KWBW	1450	N
	KWHK	1260	
Hutchinson, Minn.	KDUZ	1260	
Idabel, Okla.	KBEL	1240	
Idaho Falls, Idaho	KID	590	C
	KIFI	1260	A-M
	KTEE	900	
Independence, Ia.	KUPI	980	
	KOUR	1220	
Independence, Kans.	KIND	1010	M
Independence, Mo.	KANS	1510	
Indiana, Pa.	WDAD	1450	C
Indianapolis, Ind.	WFBM	1260	A
	WGEE	1590	
	WIBC	1070	
	WIGO	810	
	WIRE	1430	N
	WISH	1310	C
	WXLW	950	M
Indianola, Miss.	WDLT	1380	
Indian Rocks Beach, Fla.	WGNP	1520	
Indio, Calif.	KREO	1400	A
Inglewood, Calif.	KTYM	1460	
Inkster, Mich.	WCHB	1440	
International Falls, Minn.	KGHS	1230	
Invrik, N.W.T.	CHAK	860	
Iola, Kansas	KALN	1370	
Ionia, Mich.	WION	1430	
Iowa City, Iowa	KXIC	800	
	WSUI	910	
Iowa Falls, Iowa	KFIG	1510	
Iron Mtn., Mich.	WMIQ	1450	A
Iron River, Mich.	WIKB	1230	M
Irondale, Ala.	WIXI	1480	
Ironton, Ohio	WIRO	1230	M
Ironwood, Mich.	WJMS	630	M
Irvine, Ky.	WIRV	1550	
Isabella, P.R.	WISA	1390	
Ishpeming, Mich.	WJPD	1240	
	WJAN	970	
Islip, N.Y.	WBIC	540	
Ithaca, N.Y.	WHCU	870	C
	WTKO	1470	A
Iuka, Miss.	WVOM	1270	
Jackson, Ala.	WTHG	1290	M
Jackson, Mich.	WIBM	1450	A
	WKHM	970	M
	WJCO	1510	
Jackson, Miss.	WJDX	620	N
	WJQS	1400	M
	WJXN	1450	
	WOKJ	1590	
	WRBC	1300	M
	WSLI	930	
Jackson, Ohio	WLMJ	1280	
Jackson, Tenn.	WDXI	1310	
	WJAK	1460	
	WTJS	1390	A
Jackson, Wyo.	KSGT	1340	
Jacksonville, Ark.	KKCM	1500	
Jacksonville, Fla.	WJAX	930	N
	WAPE	690	
	WZOK	1320	A-M
	WIVY	1050	
	WMBR	1460	C
	WOBS	1360	
	WPDQ	600	
	WQIK	1280	
	WRHC	1400	
Jacksonville, Ill.	WJIL	1550	
	WLDS	1180	
Jacksonville, N.C.	WJNC	1240	M
	WLAS	910	
Jacksonville, Tex.	KEBE	1400	
Jacksonville Bch., Fla.	WZRO	1010	
Jamestown, N.Dak.	KEYJ	1400	M
	KSJB	600	C
Jamestown, N.Y.	WJTN	1240	A
	WXYJ	1340	M
Jamestown, Tenn.	WCLC	1260	
Janesville, Wis.	WCLO	1230	M
Jasper, Ala.	WWWB	1360	
	WARF	1240	
Jasper, Ind.	WITZ	990	
Jasper, Tex.	KTXJ	1350	
Jefferson City, Mo.	KLIK	950	
	KWOS	1240	M
Jefferson City, Tenn.	WJFC	1480	
Jeffersonville, Ind.	WXVW	250	
Jena, La.	KCKW	1480	
Jennings, La.	KJEF	1290	
Jerome, Idaho	KART	1400	
Jerseyville, Ill.	WJBM	1480	
Jesup, Ga.	WBGR	1370	
Johnson City, Tenn.	WJCW	910	C
	WETB	790	M
Johnston, S.C.	WJES	250	
Johnstown, N.Y.	WIZR	930	
Johnstown, Pa.	WJAC	850	
	WARD	1490	C
	WCRO	1230	M
Joliet, Ill.	WJOL	1340	
	WJRC	1510	
Joliette, Que.	CJLM	1350	
Jonesboro, Ark.	KBTM	1230	M
	KNEA	970	
Jonesboro, La.	KTOC	920	
Jonesboro, Tenn.	WJSO	1590	
Jonesville, La.	KANV	1480	
Jonquiere, Que.	CKRS	590	
Joplin, Mo.	WMBH	1450	M
	KQYX	1560	
	KFSB	1310	
	KODE	1230	C
Junction, Tex.	KMBL	1450	
Junc. City, Kans.	KJCK	1420	
Juneau, Alaska	KINY	800	C-A
	KJNO	630	A-M-N
Kailua, Hawaii	KLEI	1130	
Kaimuki, Hawaii	KAIM	870	
Kalamazoo, Mich.	WKPR	1420	
	WKZO	590	C
	WKLZ	1470	M
	WKMI	1360	
Kalispell, Mont.	KGEZ	600	M
	KOFI	980	
Kamloops, B.C.	CFJC	910	
Kane, Pa.	WADP	960	
Kankakee, Ill.	WKAN	1320	
Kannapolis, N.C.	WGTL	870	
	WRKB	1460	
Kans. City, Kans.	KCKN	1340	
Kansas City, Mo.	KCMO	810	C
	KMBC	980	A
	KPRS	1590	
	KUDL	1380	
	WDAF	610	N
	WHB	710	
Kearney, Nebr.	KGFW	1340	M
	KRNY	1460	
Keene, N.H.	WKNE	1290	N
	WKBK	1220	
Kelowna, B.C.	CKOV	630	
Kelso, Wash.	KLOG	1490	
Kendallville, Ind.	WAWK	1570	
Kenedy, Tex.	KAML	990	
Kennett, Mo.	KBOA	830	
Kennewick-Pasco-Richland, Wash.	KEPR	610	C
Kenora, Ont.	CJRL	1220	
Kenosha, Wis.	WLIP	1050	
Kentville, N.S.	CKEN	1350	
Keokuk, Iowa	KOKX	1310	
Kermit, Tex.	KERB	600	
Kerrville, Tex.	KERV	1230	
Kershaw, S.C.	WKSC	1300	
Ketchikan, Alaska	KTKN	930	C-A
	KABI	580	
Kewanee, Ill.	WKEI	1450	
Keyser, W.Va.	WKYR	1270	M
Key West, Fla.	WKWF	1600	A-M
	WKIZ	1500	
Kilgore, Tex.	KOCA	1240	
Killeen, Tex.	KLEN	1050	M
Kimball, Nebr.	KIMB	1260	
King City, Calif.	KRKC	1570	
Kingman, Ariz.	KAAA	1230	A
Kings Mountain, N.C.	WKMT	1220	
Kingsport, Tenn.	WKIN	1320	

Location	C.L.	Kc.	N.A.
	WKPT	1550	N
Kingston, N.Y.	WBAZ	1550	M
	WGHQ	920	
	WKNY	1490	C
Kingston, Ont.	CFRC	1490	
	CKLC	1380	
	CKWS	960	
Kingstree, S.C.	WDKD	1310	
Kingsville, Tex.	KINE	1330	
Kinston, N.C.	WELS	1010	
	WFTC	960	A
	WISP	1230	M
Kirkland, Wash.	KCDI	1460	
	KNBX	1050	
Kirkland Lake, Ont.	CJKL	560	
Kirksville, Mo.	KIRX	1450	A
Kissimmee, Fla.	WKBX	1220	
Kitchener, Ont.	CKCR	1490	
	CKKW	1320	
Kittanning, Pa.	WACB	1380	
Klamath Falls, Oreg.			
	KAGO	1150	M
	KFLW	1450	A-C
	KLAD	960	
Knoxville, Iowa	KNIA	1320	
Knoxville, Tenn.	WBIR	1240	A
	WIVK	860	
	WATE	620	N
	WKGN	1340	M
	WKXV	900	M
	WNOX	990	C
Kodiak, Alaska	WCVQ	960	
Kokomo, Ind.	WIOU	1350	C
Kosciusko, Miss.	WKOZ	1350	A
Laconia, N.H.	WLNH	1350	
	WEMJ	1490	
LaCrosse, Wis.	WKBH	1410	N
	WLCX	1490	
	WKTY	580	A
Ladysmith, Wis.	WLDY	1340	
Lafayette, Ga.	WLFA	1590	
Lafayette, Ind.	WASK	1450	M
	WAZY	1410	
	WBAA	920	
Lafayette, La.	KPEL	1420	A
	KVOL	1330	N
	KXKW	1520	
Lafayette, Tenn.	WEEN	1460	
LaFollette, Tenn.	WLAF	1450	
LaGrande, Oreg.	KLBM	1450	
LaGrange, Ga.	WLAG	1240	M
	WTRP	620	
LaGrange, Ill.	WTAQ	1300	
LaGrange, Tex.	KVLG	1570	
LaJunta, Colo.	KBZZ	1400	M
Lake Charles, La.	KLOU	1580	
	KPLC	1470	N
	KAOK	1400	M
Lake City, Fla.	WDSR	1340	
	WGRO	960	
Lake City, S.C.	WJOT	1260	
Lakeland, Fla.	WLAK	1430	N
	WONN	1230	M
	WYSE	1330	
Lake Placid, N.Y.	WIRO	920	
Lake Providence, La.	KLPL	1050	
Lake Tahoe, Calif.	KOWL	1490	
Lakeview, Oreg.	KQIK	1230	
Lake Wales, Fla.	WIPC	1280	
Lakewood, Colo.	KLAK	1600	
Lakewood, Wash.	KFHA	1480	
Lake Worth, Fla.	WLIZ	1380	
Lamar, Colo.	KLMR	920	M
Lamesa, Tex.	KPET	690	
Lampasas, Tex.	KCYL	1450	
Lancaster, Calif.	KAVL	610	
	KBVM	1380	
Lancaster, Ohio	WHOK	1320	
Lancaster, Pa.	WGAL	1490	N
	WLAN	1390	A-M
Lancaster, S.C.	WLCM	1360	
Lander, Wyo.	KOVE	1330	M
Lanett, Ala.	WRLD	1490	A
Langley Prairie, B.C.			
	CJJC	1000	
Lansdale, Pa.	WNPV	1440	
Lansford, Pa.	WLSH	1410	
Lansing, Mich.	WILS	1320	
	WJIM	1240	A-N
	WMRT	1010	
Lapeer, Mich.	WMPC	1230	
	WTHM	1530	
LaPorte, Ind.	WLOI	1540	
Laramie, Wyo.	KLME	1490	
	KOWB	1290	M
Laredo, Tex.	KGNS	1300	
	KVOZ	1490	M
LaSalle, Ill.	WLPO	1220	
LaSarre, Que.	CKLS	1240	
LasCruces, N.Mex.	KOBE	1450	
	KGRT	570	
Las Vegas, Nev.	KENO	1460	A
	KLAS	1230	C
	KORK	1340	M
	KRAM	920	
	KLUC	1050	
	KVEG	970	
Las Vegas, N.Mex.	KFUN	1230	A
Latrobe, Pa.	WPKV	1570	M
	WTRA	1480	
LaTuque, Que.	CFLM	1240	
Laurel, Miss.	WAML	1340	N
	WLAU	1600	A
	WNSL	1260	
Laurens, S.C.	WLBG	860	
Laurinburg, N.C.	WEWO	1080	
	WLCW	1300	
Lawrence, Kans.	KFKU	1250	

Location	C.L.	Kc.	N.A.
	KLWN	1320	
Lawrence, Mass.	WCCM	800	M
Lawrenceburg, Tenn.	WDXE	1370	
Lawrenceville, Ga.	WLAW	1360	
Lawrenceville, Ill.	WAKO	910	
Lawrenceville, Va.	WLES	580	
Lawton, Okla.	KSWO	1380	A
	KCCO	1050	
Leadville, Colo.	KBRR	1230	
Leaksville, N.C.	WLOE	1490	M
Leamington, Ont.	CJSP	710	
Leavenworth, Kans.	KCLO	1410	
Lebanon, Ky.	WLBN	1590	
Lebanon, Mo.	KLWT	1230	
Lebanon, Oreg.	KGAL	920	
Lebanon, Pa.	WLBR	1270	
Lebanon, Tenn.	WCOR	900	
Leesburg, Fla.	WLBE	790	M
	WBIL	1410	
Leesburg, Va.	WAGE	1290	
Leesville, La.	KLLA	1570	
Lehighton, Pa.	WYNS	1150	
Leitchfield, Ky.	WMTL	1580	
Leland, Miss.	WESY	1580	
LeMars, Iowa	KLEM	1410	
Lemoore, Calif.	KLAN	1320	
Lenoir, N.C.	WJRI	1340	M
Lenoir, Tenn.	WLIL	730	
Leonardtown, Md.	WKIK	1370	
Lethbridge, Alta.	CJOC	1220	
	CHEC	1090	
Levelland, Tex.	KLVT	1230	
Levittown, Pa.	WBCB	1490	
Lewisburg, Pa.	WUNS	1010	
Lewisburg, Tenn.	WJJM	1490	M
Lewiston, Idaho	KRLC	1350	M
	KOZE	1300	
Lewiston, Maine	WCOU	1240	M
	WLAM	1470	A
Lewistown, Mont.	KXLO	1230	M
Lewistown, Pa.	WKVA	920	A
	WMRF	1490	N
Lexington, Ky.	WLAP	630	M
	WBLG	1300	A
	WVLK	590	C
Lexington, Miss.	WXTN	1150	
Lexington, Mo.	KLEX	1570	
Lexington, Nebr.	KRVN	1010	
Lexington, N.C.	WBUY	1440	
Lexington, Tenn.	WOXL	1490	
Lexington, Va.	WREL	1450	N
Lexington Pk., Md.	WPTX	920	
Libby, Mont.	KLCB	1230	M
	KLIB	1470	
Liberal, Kans.	KSCB	1270	
Liberty, N.Y.	WVOS	1240	
Liberty, Tex.	KWLD	1050	
Lihue, Hawaii	KTOH	1490	
Lima, Ohio	WIMA	1150	A
Lincoln, Ill.	WPRC	1370	
Lincoln, Nebr.	KFOR	1240	A
	KLIN	1400	
	KLMS	1480	
Lincolnton, N.C.	WLON	1050	
Lindsay, Ont.	CKLY	910	
Linton, Ind.	WBTO	1600	
Litchfield, Ill.	WSMI	1540	
Litchfield, Minn.	KLFD	1410	
Little Falls, Minn.	KLTF	960	
Little Falls, N.Y.	WLFH	1230	
Littlefield, Tex.	KZZN	1490	
Little Rock, Ark.	KARK	920	N
	KAJI	1250	M
	KLRA	1010	A
	KOKY	1440	
	KAAY	1090	C-M
	KVLC	1050	
Littleton, Colo.	KMOR	1510	
Live Oak, Fla.	WNER	1250	
Livingston, Mont.	KPRK	1340	M
Livingston, Tenn.	WLIV	920	
Livingston, Tex.	KETX	1440	
	KVLL	1220	
Lloydminster, Alta.	CKSA	1150	
Lock Haven, Pa.	WBPZ	1230	M
Lockport, N.Y.	WUSJ	1340	
Lodi, Calif.	KCVR	1570	
Logan, Utah	KVNU	610	M
	KSTU	1300	
	KLGN	1390	
Logan, W.Va.	WLOG	1230	M
	WVOW	1290	
Logansport, Ind.	WSAL	1230	M
Lompoc, Calif.	KKOK	1410	
	KLPC	1330	O
	KNEZ	960	
London, Ky.	WFTG	1400	
London, Ont.	CFPL	980	
	CKSL	1290	
Long Beach, Calif.	KFOX	1280	
	KGER	1390	
Longmont, Colo.	KLMO	1050	
Long Prairie, Minn.	KEYL	1400	
Longview, Tex.	KFRO	1370	A
	KLUE	1280	
Longview, Wash.	KEDO	1400	A
	KBAM	1270	
Lookout Mtn., Tenn.	WFLI	1070	
Lorain, Ohio	WWIZ	1380	A
Lordsburg, N.Mex.	KLHS	950	
Loris, S.C.	WLSC	1570	
Los Alamos, N.Mex.	KRSN	1490	A
Los Angeles, Calif.	KABC	790	A
	KFI	640	N
	KHJ	930	M
	KFSG	1150	
	KFWB	980	

Location	C.L.	Kc.	N.A.
	KGFJ	1230	
	KFAC	1330	
	KLAC	570	
	KMPC	710	
	KNX	1070	C
	KPOL	1540	
	KGBS	1020	
	KRKD	1150	
Los Banos, Calif.	KLBS	1330	
Louisburg, N.C.	WYRN	1480	
Louisville, Ga.	WPEH	1420	
Louisville, Ky.	WAVE	970	N
	WAKY	790	M
	WHAS	840	C
	WKLO	1080	A
	WINN	1240	
	WKYW	900	C
	WLOU	1350	
	WTMT	620	A-M
Louisville, Miss.	WLSM	1270	
Loveland, Colo.	KLOV	1570	
Loves Park, Ill.	WLUV	1520	
Lovington, N.Mex.	KLEA	630	
Lowell, Mass.	WCAP	980	
	WLLH	1400	
Lubbock, Tex.	KCBD	1590	M-N
	KOAV	580	
	KLBK	1340	
	KFYO	790	C
	KLLL	1460	M
	KSEL	950	A
Lucedale, Miss.	WHHT	1440	
Ludington, Mich.	WKLA	1450	A
Lufkin, Tex.	KRBA	1340	A
	KTRE	1420	M
Lumberton, N.C.	WAGR	580	
	WTSB	1340	M
Luray, Va.	WRLA	1590	
	WRAA	1330	
Lynchburg, Va.	WLVA	590	A
	WOMS	1320	
	WWOD	1390	M
	WBRG	1050	
Lynn, Mass.	WLYN	1360	
Lyons, Ga.	WBBT	1340	
Macomb, Ill.	WKAI	1510	
Macon, Ga.	WBML	1240	
	WCRY	900	
	WIBB	1280	
	WMAZ	940	C
	WNEX	1400	A-M
Macon, Miss.	WMBC	1400	
Madera, Calif.	KHOT	1250	
Madill, Okla.	KMAD	1550	
Madison, Fla.	WMAF	1230	
Madison, Ga.	WYTH	1250	
Madison, Ind.	WORX	1270	
Madison, S.D.	KJAM	1390	
Madison, Tenn.	WENO	1430	
Madison, Wis.	WHA	970	
	WIBA	1310	N
	WISM	1480	A-M
	WKOW	1070	C
Madisonville, Ky.	WFMW	730	
	WTTL	1310	
Magee, Miss.	WSJC	790	
Magnolia, Ark.	KVMA	630	M
Makawao, Hawaii	KNUI	1310	
Malden, Mo.	KTCB	1470	
Malone, N.Y.	WICY	1490	M
Malvern, Ark.	KBOK	1310	
Manassas, Va.	WPRW	1460	
Manati, P.R.	WMNT	1500	
Manchester, Conn.	WINF	1230	C
Manchester, Ga.	WFDR	1370	
Manchester, Ky.	WWXL	1450	
Manchester, N.H.	WFEA	1370	M
	WGIR	610	C
	WKBR	1250	
Manchester, Tenn.	WMSR	1320	
Manhattan, Kans.	KSAC	580	
	KMAN	1350	
Manistee, Mich.	WMTE	1340	
Manitou Springs, Colo.			
	KCMS	1490	
Manitowoc, Wis.	WCUB	980	
	WOMT	1240	M
Mankato, Minn.	KYSM	1230	N
	KTOE	1420	A
Manning, S.C.	WYMB	1410	
Mansfield, La.	KDBC	1360	
Mansfield, Ohio	WMAN	1400	A
	WCLW	1570	
Maquoketa, Iowa	KMAQ	1320	
Marathon, Fla.	WEFG	1300	
Marianna, Ark.	KZOT	1460	
Marianna, Fla.	WTYS	1340	M
	WTOT	980	
Marietta, Ga.	WFOM	1230	
	WBIE	1050	
Marietta, Ohio	WMOA	1490	A
Marine City, Mich.	WDOG	1590	
Marinette, Wis.	WMAM	570	N
Marion, Ala.	WJAM	1310	
Marion, Ill.	WGGH	1150	
Marion, Ind.	WBAT	1400	A
	WMRI	860	
Marion, N.C.	WBRM	1250	
Marion, Ohio	WMRN	1490	A
Marion, S.C.	WATP	1480	
Marion, Va.	WMEV	1010	A
	WOLD	133	
Marked Tree, Ark.	KPCA	1580	
Marksville, La.	KAPB	1370	
Marlborough, Mass.	WSRD	1470	
Marquette, Mich.	WDMJ	1320	M
Marshall, Minn.	KMHL	1400	A

Location	C.L.	Kc.	N.A.
Marshall, Mo.	KMMO	1300	
Marshall, N.C.	WMMH	1460	
Marshall, Tex.	KMHT	1450	
	KADO	1410	
Marshalltown, Iowa	KFJB	1230	
Marshfield, Wis.	WDLB	1450	
Martin, Tenn.	WCMT	1410	
Martinsburg, W.Va.	WEPM	1340	
Martinsville, Va.	WHEE	1370	
	WMVA	1450	N
Marystown, Nfld. Can.			
	CHCM	560	
Marysville, Calif.	KMYC	1410	M
Marysville, Kans.	KNDY	1570	
Maryville, Mo.	KNIM	1580	
Maryville, Tenn.	WGAP	1400	
Mason City, Iowa	KGLO	1300	C
	KRIB	1490	
	KSMN	1010	
Massena, N.Y.	WMSA	1340	A
	WSTS	1050	
Massillon, Ohio	WTIG	990	
Matane, Que.	CKBL	1250	
Matawan, W.Va.	WHJC	1360	
Mattoon, Ill.	WLBH	1170	
Mauston, Wis.	WRJC	1270	
Mayaguez, P.R.	WAEL	600	
	WKJB	710	
	WORA	760	
	WPRA	990	
	WTIL	1300	
Mayfield, Ky.	WNGO	1320	
Mayodan, N.C.	WMYN	1420	
Maysville, Ky.	WFTM	1240	M
McAlester, Okla.	KTMC	1400	
	KNED	1150	
McAllen, Tex.	KRIO	910	M
McCamey, Tex.	KAMY	1450	
McComb, Miss.	WHNY	1250	A
	WAPF	980	
McCook, Nebr.	KBRL	1300	M
	KWRV	1360	
McGehee, Ark.	KVSA	1220	
McKeesport, Pa.	WEDO	810	C
	WPQR	1360	M
McKenzie, Tenn.	WHOM	1440	
McKinney, Tex.	KMAE	1600	
McMinnville, Oreg.	KMCM	1260	
McMinnville, Tenn.	WBMC	960	
	WAKI	1230	M
McPherson, Kans.	KNEX	1540	
McRae, Ga.	WDAX	1410	
Mead, Wash.	KLFF	1590	
Meadville, Pa.	WMGW	1490	
Medford, Mass.	WHIL	1430	
Medford, Oreg.	KMED	1440	A
	KSHA	860	
	KDOV	1300	
	KBDY	730	
	KYJC	1230	A-C
Medford, Wis.	WIGM	1490	M
Medicine Hat, Alta.	CHAT	1270	
Media, Pa.	WXUR	690	
Melbourne, Fla.	WMMB	1240	M
Memphis, Tenn.	WHBQ	560	M
	WHER	1430	
	WMC	790	N
	WDIA	1070	
	WMPS	680	
	WHHM	1340	A
	WLOK	1480	
	WREC	600	C
	KWAM	990	
Mena, Ark.	KENA	1450	
Menominee, Mich.	WAGN	1340	A
Menomonie, Wis.	WMNE	1360	
Merced, Calif.	KYOS	1480	M
	KWIP	1580	
Meriden, Conn.	WMMW	1470	
Meridian, Miss.	WCOC	910	C
	WQAL	1330	M
	WMOX	1010	
	WOKK	1450	A
	WQIC	1390	
Merrill, Wis.	WXMT	730	
Mesa, Ariz.	KBUZ	1310	
Mesa, Ariz.	KALF	1510	
Metropolis, Ill.	WMOK	920	
Metter, Ga.	WMAC	1360	
Mexia, Tex.	KBUS	1590	
Mexico, Mo.	KXEO	1340	M
Mexico, Pa.	WJUN	1220	
Miami, Ariz.	KIKO	1340	
Miami, Fla.	WGBS	710	C
	WCKR	610	N
	WFAB	990	
	WMBM	1220	
	WAME	1260	A
	WMIE	1140	
	WQAM	560	
	WSKP	1450	
	WINZ	940	M
Miami, Okla.	KGLC	910	
Miami Beach, Fla.			
	WMBM	1490	
	WKAT	1360	C
	WFUN	790	
Michigan City, Ind.	WIMS	1420	
Middleport-Pomroy, Ohio	WMPO	1390	
Middlesboro, Ky.	WMIK	560	
Middletown, Conn.	WCNX	1150	
Middletown, N.Y.	WALL	1340	
Middletown, Ohio	WPFB	910	
Midland, Mich.	WMDN	1490	
Midland, Ont.	CKMP	1230	

Location	C.L.	Kc.	N.A.
Midland, Tex.	KCRS	550	A
	KJBC	1150	
	KWEL	1600	
Milan, Tenn.	WKBJ	1600	
Miles City, Mont.	KATL	1340	M
Milford, Del.	WKSB	930	
Milford, Mass.	WMRC	1490	
Milledgeville, Ga.	WMVG	1450	M
Millen, Ga.	WGSR	1570	
Millington, Tenn.	WHEY	1220	
	WGMM	1380	
Millville, N.J.	WMVB	1440	
Milton, Fla.	WEBY	1330	M
	WSRA	1490	
Milton, Pa.	WMLP	1570	
	WARC	1380	
Milwaukee, Wis.	WEMP	1250	
	WFOX	860	M
	WRIT	1340	
	WISN	1150	A
	WMIL	1290	
	WOKY	920	
	WTMJ	620	N
Minden, La.	KASO	1240	
Mineola, N.Y.	WFYI	1520	D
Mineral Wells, Tex.	KORC	1140	
Minneapolis, Minn.	WCCO	830	C
	WLOL	1330	
	WMIN	1400	
	WDGY	1130	
	WPBC	980	
	WTCN	1280	A
	KTCR	690	
	KTIS	900	
	KUOM	770	
Minot, N. Dak.	KLPM	1390	M
	KQDY	1320	
	KCJB	910	C
Mission, Kans.	KBEA	1480	
Mission, Tex.	KIRT	1580	
Missoula, Mont.	KGVO	1290	C
	KXLL	1450	N
	KQTE	1340	M
	KYSS	910	
Mitchell, S.Dak.	KORN	1490	M
Moab, Utah	KURA	1450	
Moberly, Mo.	KNCM	1230	
Mobile, Ala.	WALA	1410	N
	WMOE	1550	
	WABB	1480	A
	WGOK	900	
	WTUF	840	
	WKRG	710	C
	WLIQ	1360	
	WMOZ	960	
Mobridge, S.Dak.	KOLY	1300	
Mocksville, N.C.	WSDC	1560	D
Modesto, Calif.	KTRB	860	
	KBEE	970	A
	KFIV	1360	A
Mojave, Calif.	KDOL	1340	
Moline, Ill.	WQUA	1230	A
Monahans, Tex.	KVKM	1330	M
Moncks Corner, N.C.	WBER	950	
Moncton, N. B.	CBAF	1330	
	CKCW	1220	
Monett, Mo.	KRMO	990	
Monmouth, Ill.	WRAM	1330	
Monroe, Ga.	WMRE	1490	
Monroe, La.	KMLB	1440	A-N
	KLIC	1230	M
	KNOE	540	
Monroe, Mich.	WQTE	560	
Monroe, N.C.	WMAP	1060	
Monroe, Wis.	WEKZ	1260	
Monroeville, Ala.	WMFC	1360	
Mont Laurier, Que.	CKML	610	
Monterey, Calif.	KIDO	630	
	KMBY	1240	C
Montevideo, Minn.	KDMA	1460	A
Monte Vista, Colo.	KSLV	1240	
Montezuma, Ga.	WMNZ	1050	
Montgomery, Ala.	WBAM	740	
	WCOV	1170	C
	WAPX	1600	N
	WHHY	1440	N
	WMGY	800	M
	WRMA	950	
Montgomery, W.Va.	WMON	1340	M
Monticello, Ark.	KHBM	1430	
Monticello, Ky.	WFLW	1360	
Montmagny, Que.	CKBM	1490	
Montpelier-Barre, Vt.	WSKI	1240	A
Montreal, Que.	CBF	690	
	CBM	940	N
	CKLM	1570	N
	CFCF	600	A
	CHLP	1410	
	CJAD	800	
	CJMS	1280	
	CKAC	730	C
	CKGM	980	
Montrose, Colo.	KUBC	580	
Montrose, Pa.	WPEL	1250	
Mooresville, N.C.	WHIP	1350	
Moorhead, Minn.	KVOX	1280	M
Moosejaw, Sask.	CHAB	800	
Morehead, Ky.	WMOR	1330	
Morehead City, N.C.	WMBL	740	
Morgan City, La.	KMRC	1430	M
Morganfield, Ky.	WMSK	1550	
Morganton, N.C.	WMNC	1430	
Morgantown, W.Va.	WAJR	1440	N
	WCLG	1300	

Location	C.L.	Kc.	N.A.
Morrilton, Ark.	KVOM	800	
Morris, Minn.	KMRS	1230	
Morristown, N.J.	WMTR	1250	
Morristown, Tenn.	WCRK	1150	M
	WMTN	1300	
Morton, Tex.	KRAN	1280	
Moscow, Idaho	KRPL	1400	
Moses Lake, Wash.	KSEM	1470	
	KWIQ	1260	
Moultrie, Ga.	WMGA	1400	A
	WMTM	1300	
Moundsville, W.Va.	WMOD	1370	
Mountain Grove, Mo.	KLRS	1360	
Mountain Home, Ark.	KTLO	1490	
Mt. Airy, N.C.	WPAQ	740	
	WSYD	1300	M
Mt. Carmel, Ill.	WVMC	1360	
Mt. Clemens, Mich.	WBRB	1430	
Mt. Dora, Fla.	WVGT	1580	
Mt. Jackson, Va.	WSIG	790	
Mt. Kisco, N.Y.	WVIP	1310	
Mt. Olive, N.C.	WDJS	1430	
Mt. Pleasant, Mich.	WCEN	1150	
Mt. Pleasant, Tex.	KIMP	960	
Mt. Shasta, Calif.	KWSD	620	
Mt. Sterling, Ky.	WMST	1150	
Mt. Vernon, Ill.	WMIX	940	
Mt. Vernon, Ind.	WPCO	1590	
Mt. Vernon, Ky.	WRVK	1460	
Mt. Vernon, Ohio	WMVO	1300	
Mt. Vernon, Wash.	KAPS	1470	
	KBRC	1430	
Muleshoe, Tex.	KMUL	1380	
Mullins, S.C.	WJAY	1280	
Muncie, Ind.	WLBC	1340	C
Munfordville, Ky.	WLOC	1150	
Munising, Mich.	WMAB	1400	
Murfreesboro, Tenn.	WGNS	1450	
	WMTS	860	
Murphy, N.C.	WCVP	600	
	WKRK	1320	
Murphysboro, Ill.	WINI	1420	
Murray, Ky.	WNBS	1340	
Murray, Utah	KMUR	1230	
Muscatine, Iowa	KWPC	860	
Muscle Shoals City, Alabama	WLAY	1450	
Muskegon, Mich.	WKBZ	850	A
	WKJR	1520	
	WTRU	1600	
	WMUS	1090	
Muskogee, Okla.	KBIX	1490	A
	KMUS	1380	
Myrtle Beach, S.C.	WMYB	1450	
Nacogdoches, Tex.	KEEE	1230	A
	KSFA	860	
Nampa, Idaho	KFXD	580	
	KAIN	1340	
Nanaimo, B.C.	CHUB	1570	
Nanticoke, Pa.	WNAK	730	
Napa, Calif.	KVON	1440	
Naples, Fla.	WNOG	1270	
Narrows, Va.	WNRV	990	
Nashua, N.H.	WOTW	900	
	WSMN	1590	
Nashville, Ark.	KBHC	1260	
Nashville, Ga.	WNGA	1600	
Nashville, Tenn.	WKDA	1240	
	WLAC	1510	C
	WMAK	1300	
	WLVN	1560	
	WNAH	1360	M
	WSIX	980	A
	WSM	650	N
Natchez, Miss.	WMIS	1240	N
	WNAT	1450	M
Natchitoches, La.	KNOC	1450	M
Naugatuck, Conn.	WOWW	860	
Navasota, Tex.	KWBC	1550	
Nebraska City, Nebr.	KNCY	1600	
Needles, Calif.	KSFE	1340	
Neenah, Wis.	WNAM	1280	
Neillsville, Wis.	WCCN	1370	
Nelson, B.C.	CKLN	1390	
Neon, Ky.	WNKY	1480	
Neosho, Mo.	KBTN	1420	
Nevada, Mo.	KNEM	1240	
New Albany, Ind.	WOWI	1570	
New Albany, Miss.	WNAU	1470	
Newark, Del.	WWRK	1260	
Newark, N.J.	WJRZ	970	
	WNJR	1430	
	WVNJ	620	
Newark, N.Y.	WACK	1420	
Newark, Ohio	WCLT	1430	
New Bedford, Mass.	WBSM	1420	
	WNBH	1340	M
New Bern, N.C.	WHIT	1450	M
	WRNB	1490	
Newberry, S.C.	WKDK	1240	
New Boston, Ohio	WIOI	1010	
New Braunfels, Tex.	KGNB	1420	
New Britain, Conn.	WHAY	910	A
	WRYM	840	
New Brunswick, N.J.	WCTC	1450	
Newburgh, N.Y.	WGNY	1220	
Newburyport, Mass.	WNBP	1470	
New Carlisle, Que.	CHNC	610	
New Castle, Ind.	WCTW	1550	
Newcastle, N.B.	CKMR	790	
New Castle, Pa.	WKST	1280	A
Newcastle, Wyo.	KASL	1240	
New Glasgow, N.S.	CKEC	1320	
New Haven, Conn.	WAVZ	1300	
	WELI	960	
	WNHC	1340	A

Location	C.L.	Kc.	N.A.
New Iberia, La.	KANE	1240	
	KVIM	1360	
New Kensington, Pa.	WKPA	1150	
New London, Conn.	WNLC	1510	M
New Martinsville, W.Va.	WETZ	1330	M
Newnan, Ga.	WCOH	1400	M
	WNEA	1300	
New Orleans, La.	WDSU	1280	N
	WJMR	990	M
	WBOK	800	
	WNOE	1060	
	WSMB	1350	A
	WNPS	1450	
	WTIX	690	
	WWL	870	C
	WWOM	600	
	WYLD	940	M
Newport, Ark.	KNBY	1280	
Newport, Ky.	WNOP	740	
Newport, N.H.	WCNL	1010	
Newport, Oreg.	KNPT	1310	
Newport, R.I.	WADK	1540	
Newport, Tenn.	WLIK	1270	
Newport, Vt.	WIKE	1490	
Newport News, Va.	WGH	1310	A
	WTID	1270	
New Richmond, Wis.	WIXK	1590	
New Rochelle, N.Y.	WVOX	1460	
New Smyrna Beach, Fla.	WSBB	1230	M
	WORT	1550	
Newton, Iowa	KCOB	1280	
Newton, Kans.	KJRG	950	
Newton, Miss.	WBKN	1410	
Newton, N.J.	WNNJ	1360	
Newton, N.C.	WNNC	1230	
New Ulm, Minn.	KNUJ	860	
New Westminster, B.C.	CKNW	980	
New York, N.Y.	WABC	770	A
	WBNX	1380	
	WCBS	880	C
	WEVD	1330	
	WHOM	1480	
	WINS	1010	M
	WLIB	1190	
	WMCA	570	
	WHN	1050	
	WNEW	1130	
	WNYC	830	
	WOR	710	
	WADO	1280	
	WPOW	1330	
	WQXR	1560	
	WNBC	660	N
Niagara Falls, N.Y.	WHLD	1270	
	WJJL	1440	M
Niagara Falls, Ont.	CHVC	1600	
Nicholasville, Ky.	WNVL	1250	
Niles, Mich.	WNIL	1290	
Nogales, Ariz.	KNOG	1340	A
Nome, Alaska	KICY	850	
Norfolk, Nebr.	WJAG	780	
Norfolk, Va.	WTAR	790	C
	WCMS	1050	
	WNOR	1230	
	WRAP	850	
Normal, Ill.	WIOK	1440	
Norman, Okla.	WNAD	640	
	KNOR	1400	
Norman Wells, Northwest Territory	CFNW	1240	
Norristown, Pa.	WNAR	1110	
N. Adams, Mass.	WMNB	1230	
N. Augusta, S.C.	WGUS	1380	
	WFNL	1600	
	WTHB	1550	
N. Battleford, Sask.	CJNB	1460	
North Bay, Ont.	CFCH	600	
North Bend, Oreg.	KFIR	1340	C
North Charleston, S.C.	WNCG	910	
Northampton, Mass.	WHMP	1400	M
Northfield, Minn.	WCAL	770	
N. Little Rock, Ark.	KDXE	1380	A
	KXLR	1150	
North Platte, Nebr.	KJLT	970	
	KNOP	1410	
	KODY	1240	N
No. Syracuse, N.Y.	WSOQ	1220	M
No. Vancouver, B.C.	CKLG	730	
N. Vernon, Ind.	WOCH	1460	
No. Wilkesboro, N.C.	WKBC	810	
Norton, Va.	WNVA	1350	M
Norwalk, Conn.	WNLK	1350	
Norwich, Conn.	WICH	1310	
Norwich, N.Y.	WCHN	970	
Oakdale, La.	KREH	900	
Oakes, N.Dak.	KEYD	1220	
Oak Grove, La.	KWCL	1280	
Oak Hill, W.Va.	WOAY	860	
Oakland, Calif.	KEWB	910	
	KABL	960	
	KDIA	1310	
Oakland Park, Fla.	WIXX	1520	
Oak Park, Ill.	WOPA	1490	
Oak Ridge, Tenn.	WATO	1290	M
Oakville, Ont.	CHWO	1250	
Ocala, Fla.	WMOP	900	
	WTMC	1290	N
	WKOS	1370	
Ocean City, Md.	WETT	1590	
Oceanlake, Oreg.	KBCH	1380	
Oceanside, Calif.	KUDE	1320	

Location	C.L.	Kc.	N.A.
Ocilla, Ga.	WSIZ	1380	
Odessa, Tex.	KECK	920	
	KOSA	1230	C
	KOYL	1310	
	KRIG	1410	M
Oelwein, Iowa	KOEL	950	
Ogallala, Nebr.	KOGA	930	
Ogden, Utah	KLO	1430	M
	KANN	1250	
	KSVN	730	
	KVOG	1490	
Ogdensburg, N.Y.	WSLB	1400	M
Oil City, Pa.	WKRZ	1340	
Okeechobee, Fla.	WOKC	1570	
Okla. City, Okla.	KBYE	890	A
	KLPR	1140	
	KOCY	1340	
	KOMA	1520	
	KTOK	1000	A-M
	KJEM	800	
	WKY	930	
Okmulgee, Okla.	KOKL	1240	
Old Saybrook, Conn.	WLIS	1420	
Olean, N.Y.	WMNS	1360	
	WHDL	1450	A
Olney, Ill.	WVLN	740	
Olympia, Wash.	KGY	1240	M
	KITN	920	
Omaha, Nebr.	KBON	1490	
	KFAB	1110	N
	KOIL	1290	
	KOOO	1420	
	KMEO	660	M
	WOW	590	C
Omak, Wash.	KOMW	680	
Oneida, N.Y.	WMCR	1600	
Oneida, Tenn.	WBNT	1310	
O'Neill, Nebr.	KBRX	1350	
Oneonta, Ala.	WCRL	1570	
Oneonta, N.Y.	WDOS	730	
Ontario, Calif.	KASK	1510	
Ontario, Oreg.	KSRV	1380	
Opelika, Ala.	WPHO	1400	M
Opelousas, La.	KSLO	1230	A
Opp, Ala.	WAMI	860	
Opportunity, Wash.	KZUN	630	
Orange, Mass.	WCAT	1390	
Orange, Tex.	KOGT	1600	
Orange, Va.	WJMA	1340	
Orangeburg, S.C.	WDIX	1150	A
	WORG	1580	
	WTND	920	
Orange Park, Fla.	WAYR	550	
Oregon City, Oreg.	KGON	1520	M
Orillia, Ont.	CFOR	1570	
Orlando, Fla.	WDBO	580	C
	WHOO	990	M
	WHIY	1270	
	WLOF	950	
	WKIS	740	N
Ormond Bch., Fla.	WQXQ	1380	
Orofino, Idaho	KLER	950	
Oroville, Calif.	KAOR	1340	
Ortonville, Minn.	KDIO	1350	
Osage Bch., Mo.	KRMS	1150	
Osceola, Ark.	KOSE	860	
Oshawa, Ont.	CKLB	1350	
Oshkosh, Wis.	WOSH	1490	A
Oskaloosa, Iowa	KBOE	740	
Oswego, N.Y.	WSGO	1440	
Othello, Wash.	KRSC	1400	
Otsego, Mich.	WDMC	980	
Ottawa, Ill.	WCMY	1430	
Ottawa, Kans.	KOFO	1220	
Ottawa, Ont.	CBO	910	
	CFRA	580	
	CKOY	1310	
Ottumwa, Iowa	KBIZ	1240	A
	KLEE	1480	
Owatonna, Minn.	KRFO	1390	
Owego, N.Y.	WEBO	1330	
Owensboro, Ky.	WOMI	1490	M
	WVJS	1420	A
Owen Sound, Ont.	CFOS	560	
Owosso, Mich.	WOAP	1080	
Oxford, Miss.	WSUH	1420	
Oxford, N.C.	WOXF	1340	
Oxnard, Calif.	KOXR	910	
Ozark, Ala.	WOZK	900	
Paducah, Ky.	WKYB	570	M
	WDXR	1560	N
	WPAD	1450	C
Page, Ariz.	KPGE	1340	
Pahokee, Fla.	WRIM	1250	
Painesville, Ohio	WPVL	1460	
Paintsville, Ky.	WSIP	1490	M
Palatka, Fla.	WWPF	1260	
	WSUZ	800	
Palestine, Tex.	KNET	1450	
Palm Bch., Fla.	WQXT	1340	A
Palm Sprgs., Calif.	KCMJ	1010	C
	KDES	920	
	KPAL	1450	
Palmdale, Calif.	KUTY	1470	
Palo Alto, Calif.	KIBE	1220	
Pampa, Tex.	KPDN	1340	M
	KHHH	1230	
Panama City, Fla.	WDLP	590	
	WPCF	1430	A
Panama City Beach, Fla.	WTHR	1480	
	WSCM	1290	
Paradise, Calif.	KNGL	930	
Paragould, Ark.	KDRS	1490	
Paris, Ark.	KCCL	1460	
Paris, Ill.	WPRS	1440	
Paris, Ky.	WKLX	1440	

Location	C.L.	Kc.	N.A.
Paris, Tenn.	WTPR	710	
Paris, Tex.	KPLT	1490	A
	KFTV	1250	
Parkersburg, W.Va.	WCEF	1050	
	WPAR	1450	C
	WTAP	1230	A-M
Park Falls, Wis.	WPFP	1450	
Parry Sound, Ont.	CKAR-1	1340	
Parsons, Kans.	KLKC	1540	
Pasadena, Calif.	KALI	1430	
	KPPC	1240	
	KWKW	1300	
Pasadena, Tex.	KLVL	1420	
	KIKK	650	
Pascagoula-Moss Point, Miss.			
	WPMP	1580	A
Pasco, Wash.	KORD	910	
	KGRS	1340	
Paso Robles, Calif.	KPRL	1230	M
Patchogue, L.I., N.Y.			
	WALK	1370	
	WPAC	1580	
Paterson, N.J.	WPAT	930	
Pauls Valley, Okla.	KVLH	1470	
Pawtucket, R.I.	WXTR	550	A
Payette, Idaho	KEOK	1450	
Peace River, Alta.	CKYL	610	
Pearsall, Tex.	KVWG	1280	
Pecos, Tex.	KIUN	1400	M
Peekskill, N.Y.	WLNA	1420	
Pekin, Ill.	WSIV	1140	
Pell City, Ala.	WFHK	1430	
Pembroke, Ont.	CHOV	1350	
Pendleton, Oreg.	KKID	1240	A
	KUBE	1050	
	KUMA	1290	A
Pennington Gap, Va.			
	WSWV	1570	
Pensacola, Fla.	WBOP	980	
	WDEB	610	C
	WBSR	1450	
	WNVY	1230	A
	WCOA	1370	N
	WPFA	790	
Penticton, B.C.	CKOK	800	
Peoria, Ill.	WAAP	1350	N
	WMBD	1470	C
	WIRL	1290	
	WPEO	1020	M
Perry, Fla.	WPRY	1400	
Perry, Ga.	WPGA	980	
Perry, Iowa	KDLS	1310	
Perryton, Tex.	KEYE	1400	M
Peru, Ind.	WARU	1600	
Petaluma, Calif.	KTOB	1490	
Peterborough, Ont.	CHEX	980	
	CKPT	1420	
Petersburg, Va.	WSSV	1240	M
Petoskey, Mich.	WMBN	1340	
Phenix City, Ala.	WPNX	1460	A
Philadelphia, Miss.	WHOC	1490	
Philadelphia, Pa.	WCAU	1210	C
	WDAS	1480	
	WFIL	560	A
	WFLN	900	
	WHAT	1340	
	WIBG	990	
	WIP	610	
	WJMJ	1540	
	WPEN	950	M
	WRCV	1060	N
	WTEL	860	
Philipsburg, Pa.	WPHB	1260	
Phillipsburg, Kans.	KKAN	1490	
Phoenix, Ariz.	KIFN	860	
	KXIV	1400	
	KHAT	1480	
	KHEP	1280	
	KCAC	1010	
	KOY	550	A
	KOOL	960	C
	KPHO	910	A
	KUEQ	740	
	KRIZ	1230	
	KTAR	620	N
Picayune, Miss.	WRJW	1320	
Piedmont, Ala.	WPID	1280	
Pierre, S.Dak.	KGFX	630	
	KCCR	1590	
Pikeville, Ky.	WLSI	900	
	WPKE	1240	M
Pine Bluff, Ark.	KCLA	1400	
	KADL	1270	
	KOTN	1490	M
	KPBA	1590	
Pine City, Minn.	WCMP	1350	
Pineville, Ky.	WMLF	1230	
Pineville, W.Va.	WWYO	970	
Pipestone, Minn.	KLOH	1050	
Piqua, Ohio	WPTW	1570	
Pittsburg, Calif.	KKIS	990	
Pittsburg, Kans.	KOAM	860	N
	KSEK	1340	
Pittsburgh, Pa.	KDKA	1020	
	KQV	1410	A
	WAMO	860	
	WJAS	1320	N
	WPIT	730	
	WRYT	1250	
	WRYE	1080	M
	WWSW	970	
Pittsfield, Ill.	WBBA	1580	
Pittsfield, Mass.	WBEC	1420	A
	WBRK	1340	M
Pittston, Pa.	WPTS	1540	
Plainfield, N.J.	WERA	1590	
Plainview, Tex.	KVOP	1400	M
	KPLA	1050	
Plant City, Fla.	WPLA	910	
Platteville, Wis.	WSWW	1590	
Plattsburg, N.Y.	WEAV	960	A-N
	WIRY	1340	M
Pleasanton, Tex.	KBOP	1380	
Pleasantville, N.J.	WOND	1400	
Plymouth, Mass.	WPLM	1390	
Plymouth, N.C.	WPNC	1470	
Plymouth, Wis.	WPLY	1420	
Pocahontas, Ark.	KPOC	1420	
Pocatello, Idaho	KSEI	930	N
	KWIK	1240	M
	KSNN	1290	
Pocomoke City, Md.	WDMV	540	
Pointe Claire, Que.	CFOX	1470	
Pomona, Calif.	KWOW	1600	
	KKAR	1220	
Pompano Beach, Fla.			
	WLOD	980	
	WPOM	1470	A
Ponca City, Okla.	WBBZ	1230	M
Ponce, P.R.	WPRP	910	
	WEUC	1420	
	WPAB	550	
	WLEO	1170	
	WISO	1260	
Pontiac, Mich.	WPON	1460	
Pontotoc, Miss.	WSEL	1440	
Poplar Bluff, Mo.	KWOC	930	
	KLID	1340	
Poplarville, Miss.	WRPM	1530	
Portage, Pa.	WWML	1470	
Portage, Wis.	WPDR	1350	
Portage la Prairie, Man.			
	CFRY	920	
Portageville, Mo.	KMIS	1050	
Port Alberni, B.C.	CJAV	1240	
Portales, N.Mex.	KENM	1450	
Port Angeles, Wash.	KAPY	1000	D
	KONP	1450	
Port Arthur, Ont.	CFPA	1230	
Port Arthur, Tex.	KOLE	1340	
	KPAC	1250	M
Porterville, Calif.	KTIP	1450	A
Port Hope, Ont.	CHUC	1500	
Port Hueneme, Calif.	KACY	1520	
Port Huron, Mich.	WHLS	1450	
	WTTH	1380	A
Port Jervis, N.Y.	WDLC	1490	
Port Lavaca, Tex.	KGUL	1560	
Portland, Ind.	WPGW	1440	
Portland, Maine	WCSH	970	N
	WGAN	560	C
	WLOB	1310	
	WPOR	1490	A-M
Portland, Oreg.	KBPS	1450	
	KBEV	1010	
	KLIQ	1290	
	KEX	1190	
	KGW	620	N
	KOIN	970	C
	KPAM	1410	
	KPDQ	800	
	KPOJ	1330	
	KWJJ	1080	A
	KXL	750	
Port Neches, Tex.	KPNG	1150	
Portsmouth, N.H.	WBBX	1380	
	WHEB	750	
Portsmouth, Ohio	WPAY	1400	C
	WNXT	1260	A
Portsmouth, Va.	WHIH	1400	A-M
	WPMH	1010	
	WAVY	1350	N
Post, Tex.	KUKO	1370	
Poteau, Okla.	KLCO	1280	
Potosi, Mo.	KYRO	1280	
Potsdam, N.Y.	WPDM	1470	
Pottstown, Pa.	WPAZ	1370	
Pottsville, Pa.	WPAM	1450	
	WPPA	1360	M
Poughkeepsie, N.Y.	WEOK	1390	
	WKIP	1450	A
Powell, Wyo.	KPOW	1260	A-M
Poynette, Wis.	WIBU	1240	
Prairie du Chien, Wis.			
	WPRE	980	
Pratt, Kans.	KWSK	1570	
	KPRT	1290	
Prescott, Ariz.	KYCA	1490	N
	KENT	1340	
	KNOT	1450	A
Prescott, Ark.	KTPA	1370	
Presque Isle, Me.	WAGM	950	
	WEGP	1390	
Preston, Idaho	KPST	1340	
Prestonsburg, Ky.	WPRT	960	
	WDOC	1310	
Price, Utah	KOAL	1230	M
Prichard, Ala.	WSIM	1270	
Prince Albert, Sask.	CKBI	900	
Prince George, B.C.	CKPG	550	
Prince Rupert, B.C.	CFPR	1240	
Princeton, Ind.	WRAY	1250	
Princeton, Ky.	WPKY	1580	
Princeton, N.J.	WHWH	1350	
Princeton, W.Va.	WLOH	1490	A
Prineville, Oreg.	KRCO	690	
Prosser, Wash.	KARY	1310	
Providence, R.I.	WEAN	790	C
	WHIM	1110	
	WICE	1290	
	WJAR	920	N
	WLKW	990	
	WPRO	630	
	WRIB	1220	M
Provo, Utah	KIXX	1400	A
	KEYY	1450	
	KOVO	960	M
Pryor, Okla.	KOLS	1570	
Pueblo, Colo.	KDZA	1230	
	KAPI	690	
	KFEL	970	
	KGHF	1350	A-M
	KCSJ	590	
	KTUX	1480	
Pulaski, Tenn.	WKSR	1420	A
Pulaski, Va.	WPUV	1580	
Pullman, Wash.	KWSC	1250	
	KOFE	1150	
Punxsutawney, Pa.	WPME	1540	
Putnam, Conn.	WINY	1350	
Puyallup, Wash.	KAYE	1450	
Quanah, Tex.	KOLJ	1150	
Quantico, Va.	WQVA	1530	
Quebec, Que.	CBV	980	
	CHRC	800	
	CJLR	1060	
	CJQC	1340	
	CKCV	1280	
Quesnel, B.C.	CKCQ	570	
Quincy, Fla.	WCNH	1230	M
Quincy, Ill.	WGEM	1440	A
	WTAD	930	C
Quincy, Mass.	WJDA	1300	
Quincy, Wash.	KPOR	1370	
Quitman, Ga.	WSFB	1490	
Racine, Wis.	WRAC	1460	
	WRJN	1400	A
Radford, Va.	WRAD	1460	
Raleigh, N.C.	WKIX	850	A
	WNOH	1550	
	WPTF	680	N
	WLLE	570	
	WRAL	1240	
Ralls, Tex.	KCLR	1530	
Rantoul, Ill.	WRTL	1460	
Rapid City, S.Dak.	KOTA	1380	C
	KIMM	1150	
	KRSD	1340	
	KEZU	920	
Raton, N.Mex.	KRTN	1490	A
Ravenswood, W.Va.	WMOV	1360	
Rawlins, Wyo.	KRAL	1240	A-M
Raymond, Wash.	KAPA	1340	
Raymondville, Tex.	KSOX	1240	
Rayville, La.	KRIH	990	
Reading, Pa.	WEEU	850	A
	WHUM	1240	C
	WRAW	1340	N
Redding, Calif.	KRDG	1230	M
	KAHR	1330	
	KQMS	1400	
	KVCV	800	C
	KVIP	540	
Red Bluff, Calif.	KBLF	1490	
Red Deer, Alta.	CKRD	850	
Redfield, S.Dak	KFCB	1380	
Redlands, Calif.	KCAL	1410	
Red Lion, Pa.	WGCB	1440	
Red Lodge, Mont.	KRBN	1450	
Redmond, Oreg.	KPRB	1240	
Red Wing, Minn.	KCUE	1250	
Redwood Falls, Minn.	KLGR	1490	
Reedsburg, Wis.	WRDB	1400	
Reedsport, Oreg.	KRAF	1470	
Regina, Sask.	CBK	540	
	CJME	1300	
	CKCK	620	
	CKRM	980	
Reidsville, N.C.	WFRC	1600	A
	WREV	1220	
Remsen, N.Y.	WREM	1480	
Reno, Nev.	KOH	630	N
	KBET	1340	M
	KOLO	920	C
	KONE	1450	
	KDOT	1280	
Rensselaer, N.Y.	WEEE	1300	
Rexburg, Idaho	KRXK	1230	
Rhinelander, Wis.	WOBT	1240	
Rice Lake, Wis.	WJMC	1240	M
Richfield, Utah	KSVC	980	
Richland, Wash.	KALE	960	
Richland, Wis.	WRCO	1450	
Richlands, Va.	WRIC	540	
Richmond, Ind.	WKBV	1490	A
Richmond, Ky.	WEKY	1340	M
Richmond, Va.	WANT	990	
	WBBL	1480	
	WRGM	1590	
	WLEE	1480	M
	WEET	1320	
	WMBG	1380	A
	WRNL	910	C
	WRVA	1140	N
	WXGI	950	
Richmond Hill, Ont.	CJRH	1310	
Richwood, W.Va.	WVAR	1280	
Ridgecrest, Calif.	KRCK	1360	
	KLOA	1240	
Rimouski, Que.	CJBR	900	
Rio Piedras, P.R.	WUNO	1320	
	WWWW	1520	
Ripley, Tenn.	WTRB	1570	
Ripon, Wis.	WCWC	1600	
Riverhead, N.Y.	WRIV	1390	
	WAPC	1570	
Riverside, Calif.	KPRO	1440	
	KACE	1570	
Riverton, Wyo.	KVOW	1450	M
Riviera Beach, Fla.	WHEW	1600	
Riviere du Loup, Que.	CJFP	1400	
Roanoke, Ala.	WELR	1360	
Roanoke, Va.	WOBJ	960	C
	WRIS	1410	M
	WHYE	910	
	WROV	1240	A
	WSLS	610	N
Roanoke Rapids, N.C.			
	WCBT	1230	M
Roaring Sprgs., Pa.			
	WKMC	1370	
Roberval, Que.	CHRL	910	
Robinson, Ill.	WTAY	1570	
Robstown, Tex.	KROB	500	D
Rochester, Minn.	KROC	1340	N
	KWEB	1270	
Rochester, N.H.	WWNH	930	
Rochester, N.Y.	WBBF	950	M
	WHAM	1180	N
	WHEC	1460	C
	WRVM	680	
	WSAY	1370	
	WROC	1280	N
Rockford, Ill.	WROK	1440	A
	WJRL	1150	
	WRRR	1330	
Rock Hill, S.C.	WRHI	1340	M
	WTYC	1150	
Rockingham, N.C.	WAYN	900	
Rock Island, Ill.	WHBF	1270	C
Rockland, Maine	WRKD	1450	A
Rockmart, Ga.	WPLK	1220	
Rock Springs, Wyo.			
	KVRS	1360	A-M
Rockville, Md.	WINX	1600	
Rockwood, Tenn.	WRKH	580	
Rocky Ford, Colo.	KAVI	1320	
Rocky Mount, N.C.	WCEC	810	
	WEED	1390	A
	WRMT	1490	
	WKWS	1290	
Rocky Mount, Va.	WYTI	1570	
Rogers, Ark.	KAMO	1390	
Rogers City, Mich.	WHAK	960	
Rogersville, Tenn.	WRGS	1370	
Rolla, Mo.	KCLU	1590	
	KTTR	1490	
Rome, Ga.	WLAQ	1410	A
	WIYN	1360	
	WRGA	1470	C
	WROM	710	
Rome, N.Y.	WKAL	1450	A
	WRNY	1350	
Ronceverte, W.Va.	WRON	1400	
Roseburg, Oreg.	KRNR	1490	C
	KRXL	1250	
	KYES	950	
Rosenberg, Tex.	KFRD	980	
Rossville, Ga.	WRIP	980	
Roswell, N.Mex.	KRSY	1230	
	KGFL	1430	M
	KBIM	910	
Rouyn, Que.	CKRN	1400	
Roxboro, N.C.	WRXO	1430	
Royal Oak, Mich.	WEXL	1340	
Rugby, N. Dak.	KGCA	1450	
Ruidoso, N.Mex.	KRRR	1340	
Rumford, Me.	WRUM	790	
Rupert, Idaho	KAYT	970	
Rushton, La.	KRUS	1490	
Rusk, Texas	KTLU	1580	
Russell, Kans.	KRSL	990	
Russellville, Ala.	WWWR	920	
Russellville, Ark.	KXRJ	1490	
Russellville, Ky.	WRUS	610	
Rutland, Vt.	WHWB	1000	
	WSYB	1380	M
Sackville, N.B.	CBA	1070	
Sacramento, Calif.	KCRA	1320	N
	KFBK	1530	A
	KGMS	1380	M
	KJAY	1430	
	KRAK	1140	M
	KROY	1240	C
	KXOA	1470	
Safford, Ariz.	KGLU	1480	A
	KATO	1230	
Sag Harbor, N.Y.	WLNG	1600	
Saginaw, Mich.	WKNX	1210	
	WSAM	1400	N
	WSGW	790	C
St. Albans, Vt.	WWSR	1420	
St. Albans, W.Va.	WKLC	1300	
St. Anne-de-la-Pocatiere, Que.			
	CHGB	1310	
St. Augustine, Fla.	WFOY	1240	C
	WETH	1420	
St. Boniface, Man.	CKSB	1050	
St. Catherines, Ont.	CKTB	610	
St. Charles, Mo.	KADY	1460	
St. Cloud, Minn.	KFAM	1450	N
	WJON	1240	
St. George, S.C.	WQIZ	1300	
St. George, Utah	KDXU	1450	
St. Helen, Mich.	WMIC	1590	
St. Helens, Oreg.	KOHI	1600	
St. Hyacinthe, Que.	CKBS	1240	
St. Jean, Que.	CHRS	1090	
St. Jerome, Que.	CKJL	900	
Saint John, N.B.	CFBC	930	
	CHSJ	1150	
St. Johns, Mich.	WJUD	1580	
St. John's, Nfld.	CBN	640	
	CJON	930	
	VOAR	1230	
	VOCM	590	
	VOWR	800	
St. Johnsbury, Vt.	WTWN	1340	
St. Joseph, Mich.	WSJM	1400	

Location	C.L.	Kc.	N.A.
St. Joseph, Mo.	KFEQ	680	
	KKJO	1550	M
	KUSN	1270	
St. Joseph d'Alma, Que.	CFGT	1270	
St. Louis, Mo.	KATZ	1600	
	KFUO	850	
	KMOX	1120	C
	KSD	550	N
	KSTL	690	
	KWK	1380	
	KXOK	630	
	WEW	770	M
	WIL	1430	A
St. Louis Park, Minn.	KRSI	950	
St. Mary's, Pa.	WKBI	1400	
St. Paul, Minn.	KSTP	1500	N
	KOWB	630	M
	KTWN	1400	
St. Peter, Minn.	KRBI	1310	
St. Petersburg, Fla.	WPIN	680	
	WSUN	620	A
	WLCY	1380	M
St. Petersburg Beach, Fla.	WILZ	1590	
St. Thomas, Ont.	CHLO	680	
Salamanca, N.Y.	WGGO	1590	
Salem, Ill.	WJBD	1350	
Salem, Ind.	WSLM	1220	
Salem, Mass.	WESX	1230	M
Salem, Mo.	KSMO	1340	
Salem, Oreg.	KSLM	1390	A
	KAPT	1220	
	KBZY	1490	N
	KGAY	1430	
Salem, Va.	WBLU	1480	
Salida, Colo.	KVRH	1340	M
Salina, Kans.	KSAL	1150	M
	KCTY	980	
	KSRI	910	
Salinas, Calif.	KDON	1460	
	KSBW	1380	M
Saline, Mich.	WOIA	1290	
Salisbury, Md.	WBOC	960	
	WICO	1320	A
	WJDY	1470	
Salisbury, N.C.	WSTP	1490	M
	WSAT	1280	A
Salmon, Idaho	KSRA	960	
Salt Lake City, Utah	KALL	910	A
	KCPX	1320	N
	KLUB	570	M
	KNAK	1280	
	KSL	1160	C
	KSOP	1370	
	KSXX	630	
	KWHO	860	
	KWIC	1570	
San Angelo, Tex.	KTEO	1340	
	KGKL	960	A
	KPEP	1420	
	KWFR	1260	
San Antonio, Tex.	KAPE	1480	
	KCOR	1350	
	KENS	680	C
	KBER	1150	
	KITE	930	
	KUKA	1250	
	KUBO	1310	
	KMAC	630	A
	KONO	860	
	KTSA	550	
	WOAI	1200	N
San Bernardino, Calif.	KCKC	1350	
	KFXM	590	
	KRNO	1240	
	KMEN	1290	M
Sandersville, Ga.	WSNT	1490	
San Diego, Calif.	KCBQ	1170	
	KFMB	540	C
	KOGO	600	N
	KGB	1360	A
	KSON	1240	
	KSDO	1130	
Sandpoint, Idaho	KSPT	1400	
Sand Spring, Okla.	KTOW	1340	
Sandusky, Ohio	WLEC	1450	M
San Fernando, Calif.	KGIL	1260	
Sanford, Fla.	WTRR	1400	
	WSFR	1360	
Sanford, Me.	WSME	1220	
Sanford, N.C.	WEYE	1290	
	WWGP	1050	
San Francisco, Calif.	KFRC	610	M
	KCBS	740	C
	KFAX	1100	
	KGO	810	A
	KNBR	680	N
	KKHI	1550	M
	KSAY	1010	
	KSAN	1450	
	KSFO	560	
	KYA	1260	
San German, P.R.	WRJS	1090	
Sanitobia, Miss.	WSAO	1550	
San Jose, Calif.	KLOK	1170	
	KLIV	1590	M
	KEEN	1370	
	KXRX	1500	
San Juan, P.R.	WAPA	680	M
	WHOA	870	
	WIAC	740	
	WIPR	940	

Location	C.L.	Kc.	N.A.
	WKAQ	580	C
	WKVM	810	
	WKYN	630	
	WITA	1140	
San Luis Obispo, Calif.	KATY	1340	
	KCJH	1280	
	KSLY	1400	
	KVEC	920	M
San Marcos, Tex.	KCNY	1470	
San Mateo, Calif.	KOFY	1050	
San Rafael, Calif.	KTIM	1510	
San Saba, Tex.	KBAL	1410	
Santa Ana, Calif.	KWIZ	1480	
Santa Barbara, Cal.	KDB	1490	
	KGUD	990	
	KIST	1340	N
	KTMS	1250	A-M
	KACL	1290	
Santa Cruz, Calif.	KSCO	1080	
Santa Fe, N.Mex.	KTRC	1400	A
	KVSF	1260	C
Santa Maria, Cal.	KCOY	1400	
	KHER	1600	
	KSMA	1240	
	KSEE	1480	
Santa Monica, Cal.	KDAY	1580	
Santa Paula, Calif.	KSPA	1400	
Santa Rosa, Calif.	KSRO	1350	
	KHUM	1580	
	KVRE	1460	
	KJAX	1150	
Santa Rosa, N.Mex.	KSYX	1420	
Sapulpa, Okla.	KREK	1550	
Saranac Lake, N.Y.	WNBZ	1240	A
Sarasota, Fla.	WKXY	930	
	WSAF	1220	
	WSPB	1450	C
	WYND	1280	
Saratoga Springs, N.Y.	WSPN	900	
Sarnia, Ont.	CHOK	1070	
Saskatoon, Sask.	CFQC	600	
	CFNS	1170	
	CKOM	1250	
Sauk Rapids, Minn.	WVAL	800	
Sault Ste. Marie, Michigan	WSOO	1230	
Sault Ste. Marie, Ontario	CJIC	1050	
	CKCY	920	
Savannah, Ga.	WBYG	1450	M
	WEAS	900	
	WSAV	630	N
	WSGA	1400	
	WTOC	1290	C
	WSOK	1230	A
Savannah, Tenn.	WORM	1010	
Sayre, Pa.	WATS	960	
Schefferville, Que.	CFKL	1230	
Schenectady, N.Y.	WGY	810	N
	WSNY	1240	
Scotland Neck, N.C.	WYAL	1280	
Scottsbluff, Nebr.	KNEB	960	A-M
	KOLT	1320	C
Scottsboro, Ala.	WCRI	1050	
	WROS	1330	
Scottsdale, Ariz.	KWBY	1440	
Scottsville, Ky.	WLCK	1250	
Scranton, Pa.	WARM	590	A
	WEJL	630	
	WGBI	910	C
	WICK	1400	
	WSCR	1320	N
Seaford, Del.	WSUX	1280	
Searcy, Ark.	KWCB	1300	
Seaside, Oreg.	KSRG	730	
Seattle, Wash.	KAYO	1150	M
	KIXI	910	
	KING	1090	A
	KIRO	710	C
	KJR	950	
	KOL	1300	
	KOMO	1000	N
	KETO	1590	
	KTW	1250	
	KVI	570	
	KXA	770	
Sebring, Fla.	WJCM	980	
	WSEB	1340	
Sedalia, Mo.	KDRO	1490	
	KSIS	1050	
Seguin, Tex.	KWED	1580	
Selma, Ala.	WGWC	1340	C
	WHBB	1490	
	WRWJ	1570	
Seminole, Tex.	KTFO	1250	
Seneca Township, S.C.	WSNW	1150	
Seven Iles, Que.	CKCN	560	
Sevierville, Tenn.	WSEV	930	
Seward, Alaska	KIBH	1340	C-A
Seymour, Ind.	WJCD	1390	
Seymour, Tex.	KSEY	1230	
Shamokin, Pa.	WISL	1480	
Shamrock, Tex.	KBYP	1580	
Sharon, Pa.	WPIC	790	
Shawano, Wis.	WTCH	960	
Shawinigan, Que.	CKSM	1220	
Shawnee, Okla.	KGFF	1450	M
Sheboygan, Wis.	WHBL	1330	A
	WKTS	950	
Sheffield, Ala.	WSHF	1290	
Shelby, Mont.	KSEN	1150	M
Shelby, N.C.	WOHS	730	M
	WADA	1390	
Shelbyville, Ind.	WSVL	1520	

Location	C.L.	Kc.	N.A.
Shelbyville, Tenn.	WHAL	1400	
	WLIJ	1580	
Shenandoah, Iowa	KMA	960	A
Sherbrooke, Que.	CHLT	630	
	CKTS	900	
Sheridan, Wyo.	KWYO	1410	M
	KROE	930	
Sherman, Tex.	KRRV	910	M
	KTXO	1500	
Shippensburg, Pa.	WSHP	1480	
Show Low, Ariz.	KVWM	1050	
Shreveport, La.	KANB	1300	
	KBCL	1220	
	KCIJ	1050	C
	KEEL	710	
	KOKA	1550	M
	KJOE	1480	M
	KREB	980	
	KRMD	1340	A
	KWKH	1130	C
Sidney, Mont.	KGCX	1480	M
Sidney, Nebr.	KSID	1340	A
Sierra Vista, Ariz.	KHFH	1420	A
Sikeston, Mo.	KSIM	1400	
Siler City, N.C.	WNCA	1570	
Siloam Sprgs., Ark.	KUOA	1290	M
Silsbee, Tex.	KKAS	1300	
Silver City, N.Mex.	KSIL	1340	C
Silver Sprgs., Md.	WQMR	1050	
Simcoe, Ont.	CFRS	1560	
Sinton, Tex.	KTOD	1590	
Sioux City, Iowa	KSCJ	1360	A
	KMNS	620	M
	KTRI	1470	
Sioux Falls, S.Dak.	KISD	1230	
	KELO	1320	
	KNWC	1270	
	KSOO	1140	A
Sitka, Alaska	KIFW	1230	C-A
	KSEW	1400	
Skowhegan, Maine	WGHM	1150	
Slaton, Tex.	KCAS	1050	
Smithfield, N.C.	WMPM	1270	
Smiths Falls, Ont.	CJET	630	
Smyrna, Ga.	WSMA	1550	
Snyder, Tex.	KSNY	1450	M
Socorro, N.Mex.	KSRC	1290	
Soda Sprgs., Idaho	KBRV	540	
Solvay, N.Y.	WQSR	1320	
Somerset, Ky.	WSFC	1240	M
	WTLO	1480	
Somerset, Pa.	WVSC	990	
Sonora, Calif.	KVML	1450	
Sonora, Tex.	KCKG	1240	
Sorel, P.Q.	CJSO	1320	
South Beloit, Ill.	WBEL	1380	
So. Bend, Ind.	WNDU	1490	A
	WJVA	1580	M
	WSBT	960	C
Southbridge, Mass.	WESO	970	
So. Boston, Va.	WHLF	1400	A
Southern Pines, N.C.	WEEB	990	
South Daytona Beach, Florida	WELE	1590	
So. Gastonia, N.C.	WGAS	1420	
So. Haven, Mich.	WJOR	940	
So. Knoxville, Tenn.	WSKT	1580	
So. Paris, Me.	WKTQ	1450	
So. Pittsburg, Tenn.	WEPG	910	
So. St. Paul, Minn.	KDWB	630	M
So. Williamsport, Pa.	WMPT	1450	
Spanish Fork, Utah	KONI	1480	
Sparks, Nev.	KBUB	1270	
Sparta, Ill.	WHCO	1230	
Sparta, Tenn.	WSMT	1050	
Sparta, Wis.	WKLJ	990	
	WCOW	1290	
Spartanburg, S.C.	WZOO	1400	M
	WORD	910	N
	WSPA	950	C
Spencer, Iowa	KICD	1240	
Spencer, W.Va.	WSPZ	1400	
Spokane, Wash.	KGA	1510	A
	KLYK	1230	
	KPEG	1380	
	KHQ	590	N
	KNEW	790	M
	KREM	970	
	KXLY	920	C
	KCFA	1330	
Springdale, Ark.	KBRS	1340	A
Springfield, Ill.	WCVS	1450	A-M
	WMAY	970	N
	WTAX	1240	C
Springfield, Mass.	WBZA	1030	
	WHYN	560	C
	WMAS	1450	M
	WSPR	1270	
Springfield, Mo.	KGBX	1260	N
	KICK	1340	
	KTTS	1400	C
	KWTO	560	A
Springfield, Ohio	WIZE	1340	A
	WBLY	1600	
Springfield, Oreg.	KEED	1050	
Springfield, Tenn.	WDBL	1590	
Springfield, Vt.	WCFR	1480	
Springhill, La.	KBSF	1460	
Spruce Pine, N.C.	WTOE	1470	
Stamford, Conn.	WSTC	1400	A
Stamford, Tex.	KDWT	1400	
Stanford, Ky.	WRSL	1520	
Starke, Fla.	WRGR	1490	
Starkville, Miss.	WSSO	1230	
State College, Pa.	WMAJ	1450	N
	WRSC	1390	
Statesboro, Ga.	WWNS	1240	

Location	C.L.	Kc.	N.A.
Statesville, N.C.	WSIC	1400	
	WDBM	550	
Staunton, Va.	WTON	1240	A
	WAFC	900	
Stephenville, Tex.	KSTV	1510	
Sterling, Colo.	KGEK	1230	
	KOLR	1490	
Sterling, Ill.	WSDR	1240	
Steubenville, Ohio	WSTV	1340	M
Stevens Point, Wis.	WSPT	1010	
Stillwater, Minn.	WAVN	1220	
Stillwater, Okla.	KSPI	780	
Stockton, Calif.	KJOY	1280	
	KSTN	1420	
	KWG	1230	A
Storm Lake, Iowa	KAYL	990	
Stratford, Ont.	CJCS	1240	
Streator, Ill.	WIZZ	1250	
Stroudsburg, Pa.	WVPO	840	
Stuart, Fla.	WSTU	1450	M
Stuart, Va.	WHEO	1270	
Sturgeon Bay, Wis.	WDOR	910	
Sturgis, Mich.	WSTR	1230	
Stuttgart, Ark.	KWAK	1240	M
Sudbury, Ont.	CKSO	790	
	CFBR	550	
	CHNO	900	
Suffolk, Va.	WLPM	1460	A
Sulphur, La.	KIKS	1310	
Sulphur Sprgs., Tex.	KSST	1230	
Summerside, P.E.I.	CJRW	1240	
Summerville, Ga.	WGTA	930	
Summerville, S.C.	WALS	980	
Sumter, S.C.	WFIG	1290	M
	WDXY	1240	
	WSSC	1340	A
Sunbury, Pa.	WKOK	1240	C
Sunnyside, Wash.	KREW	1230	
Sun Valley, Ida.	KSKI	1340	
Superior, Nebr.	KRFS	1600	
Superior, Wis.	WDSM	710	N
	WIGL	970	
	WQMN	1320	
Susanville, Calif.	KSUE	1240	
Swainsboro, Ga.	WJAT	800	
Sweetwater, Tenn.	WDEH	800	
Sweetwater, Tex.	KXOX	1240	
Swift Current, Sask.	CKSW	1400	
Sydney, N.S.	CBI	1140	
	CJCB	1270	
Sylacauga, Ala.	WFEB	1340	M
	WMLS	1290	
Sylva, N.C.	WMSJ	1480	
Sylvania, Ga.	WSYL	1490	
Syracuse, N.Y.	WHEN	620	C
	WFBL	1390	M
	WNDR	1260	
	WOLF	1490	A
	WSYR	570	N
Tabor City, N.C.	WTAB	1370	
Tacoma, Wash.	KMO	1360	
	KTAC	850	
	KTNT	1400	
	KVI	570	M
Taft, Calif.	KTKR	1310	
Tahlequah, Okla.	KTLQ	1350	
Tahoe Valley, Calif.	KTHO	590	
Talladega, Ala	WEYY	1580	
	WNUZ	1230	M
Tallahassee, Fla.	WMEN	1330	
	WRFB	1410	
	WTAL	1270	M
	WTNT	1450	C
Tallassee, Ala.	WTLS	1300	
Tallulah, La.	KTLD	1360	
Tampa, Fla.	WALT	1110	
	WDAE	1250	C
	WYOU	1550	
	WFLA	970	N
	WHBO	1050	M
	WINQ	1010	
	WTMP	1150	
	WSOL	1300	
Taos, N. Mex.	KKIT	1340	
Tarboro, N.C.	WCPS	760	
Tarpon Sprgs., Fla.	WRBB	1470	
Tasley, Va.	WESR	1330	
Taunton, Mass.	WPEP	1570	
Tawas City, Mich.	WIOS	1480	
Taylor, Tex.	KTAE	1260	
Taylorsville, N.C.	WTLK	1570	
Taylorville, Ill.	WTIM	1410	
Tazewell, Tenn.	WNTT	1250	
Tell City, Ind.	WTCJ	1230	
Tempe, Ariz.	KUPD	1060	
	KYND	1580	
Temple, Tex.	KTEM	1400	
Terrace, B.C.	CFTK	590	
Terre Haute, Ind.	WBOW	1230	N
	WMFT	1300	A
	WTHI	1480	C
Terrell, Tex.	KTER	1570	
Terrytown, Nebr.	KEYR	690	
Texarkana, Ark.	KOSY	790	M
Texarkana, Tex.	KCMC	740	A
	KATQ	940	
	KTFS	1400	
Texas City, Tex.	KTLW	920	
Thayer, Mo.	KALM	1290	
The Dalles, Oreg.	KODL	1440	
	KRMW	1300	
Thermopolis, Wyo.	KRTR	1490	M
	KTHE	1240	
Thief River Falls, Minn.	KTRF	1230	
Thetford Mines, Que.	CKLD	1230	
Thibodaux, La.	KTIB	630	

Location	C.L.	Kc.	N.A.
Thomaston, Ga.	WSFT	1220	
	WTGA	1590	
Thomasville, Ala.	WJDB	630	
Thomasville, Ga.	WPAX	1240	
	WKTG	730	
Thomasville, N.C.	WTNC	790	
Thomson, Ga.	WTWA	1240	M
Three Rivers, Mich.	WLKM	1510	
Three Rivers, Que.	CHLN	550	
	CKTR	1150	
Ticonderoga, N.Y.	WIPS	1250	
Tiffin, Ohio	WTTF	1600	M
Tifton, Ga.	WTIF	1340	
	WWGS	1430	
Tillamook, Oreg.	KTIL	1590	
Tillsonburg, Ont.	CKOT	1510	
Timmins, Ont.	CFCL	620	
	CKGB	680	
Titusville, Fla.	WRMF	1050	
Titusville, Pa.	WTIV	1230	
Toccoa, Ga.	WLET	1420	M
	WNES	630	
Toledo, Ohio	WOHO	1470	M
	WSPO	1370	N
	WTOD	1560	C
	WTOL	1230	A
Toledo, Oreg.	KTDO	1230	
Tolleson, Ariz.	KZON	1190	
Tomah, Wis.	WTMB	1480	
Tompkinsville, Ky.	WTKY	1370	
Tooele, Utah	KOYL	990	
Topeka, Kans.	WIBW	580	C
	KEWI	1440	
	WREN	1250	A
	KTOP	1490	M
Toppenish, Wash.	KENE	1490	
Toronto, Ont.	CBL	740	N
	CHFI	1540	D
	CFRB	1010	C
	CHUM	1050	M
	CJBC	860	
	CKEY	580	M
	CKFH	1430	
Torrington, Conn.	WBZY	990	
	WTOR	1490	M
Torrington, Wyo.	KGOS	1490	
Towanda, Pa.	WTTC	1550	
Towson, Md.	WAQE	1570	
Trail, B.C.	CJAT	610	
Traverse City, Mich.	WTCM	1400	
	WCCW	1310	
Trenton, Mo.	KTTN	1600	
Trenton, N.J.	WAAT	1300	
	WBUD	1260	
	WTTM	920	M
Trinidad, Colo.	KCRT	1240	M
Troy, Ala.	WTBF	970	M
Troy, N.Y.	WHAZ	1330	
	WTRY	980	
Troy, N.C.	WXKW	1000	
	WJRM	1390	
Truckee, Calif.	KHOE	1400	
Truro, N.S.	CKCL	600	
Truth or Consequences, New Mexico	KCHS	1400	
Tryon, N.C.	WTYN	1550	M
Tucson, Ariz.	KTUC	1400	A
	KXEW	1600	
	KAIR	1490	
	KCEE	790	
	KTAN	580	A
	KCUB	1290	M
	KEVT	690	
	KOBY	940	
	KMOP	1330	
	KFIF	1550	
	KTKT	990	
	KOLO	1450	C
Tucumcari, N.Mex.	KTNM	1400	M
Tulare, Calif.	KCOK	1270	M
	KGEN	1370	
Tulia, Tex.	KTUE	1260	
Tullahoma, Tenn.	WJIG	740	
Tulsa, Okla.	KAKC	970	
	KOME	1300	
	KRMG	740	C
	KELI	1430	C
	KVOO	1170	N
	KFMJ	1050	
Tupelo, Miss.	WELO	580	M
	WTUP	1490	A
Turlock, Calif.	KCEY	1390	
Tuscaloosa, Ala.	WJRD	1150	
	WACT	1420	
	WNPT	1280	A
	WTUG	790	
	WTBC	1230	M
Tuscumbia, Ala.	WVNA	1590	
	WRCK	1410	
Tuskegee, Ala.	WABT	580	
Twenty-Nine Palms, Calif.	KOHI	1250	
Twin Falls, Idaho	KTFI	1270	N
	KLIX	1310	M
	KEEP	1450	
Two Rivers, Wis.	WTRW	1590	
Tyler, Tex.	KDOK	1330	
	KGJB	1490	M
	KTBB	600	A
	KZEY	690	
Tyrone, Pa.	WTRN	1340	
Ukiah, Calif.	KUKI	1400	
	KMSL	1250	
Union, Mo.	KLPW	1220	
Union, S.C.	WBCU	1460	
Union City, Tenn.	WENK	1240	
Uniontown, Pa.	WMBS	590	C
Urbana, Ill.	WILL	580	
	WKID	1580	
Utica, N.Y.	WIBX	950	C
	WBVM	1550	
	WRUN	1150	
	WTLB	1310	A
Uvalde, Tex.	KVOU	1400	
Val D'Or, Que.	CKVD	1230	
Valdese, N.C.	WSUM	1490	
Valdosta, Ga.	WGOV	950	M
	WGAF	910	A
	WJEM	1150	
	WVLD	1450	
Valentine, Nebr.	KVSH	940	
Vallejo, Calif.	KNBA	1190	
Valley City, N.Dak.	KOVC	1490	M
Valleyfield, P.R.	CFLV	1370	
Valparaiso-Niceville, Fla.	WNSM	1340	
Van Buren, Ark.	KFDF	1580	
Van Cleve, Ky.	WMTC	730	
Van Wert, Ohio	WERT	1220	
Vanceburg, Ky.	WKKS	1570	
Vancouver, B.C.	CBU	690	
	CFUN	1410	
	CHQM	1320	
	CJOR	600	
	CKWX	1130	M
Vancouver, Wash.	KISN	910	
	KKEY	1150	
	KVAN	1480	
Venice, Fla.	WAMR	1320	
Ventura, Calif.	KVEN	1450	M
	KUDU	1590	
Verdun, Que.	CKVL	850	
Vermillion, S.Dak.	KUSD	690	
Vernal, Utah	KVEL	1250	
Vernon, B.C.	CJIB	940	
Vernon, Tex.	KVWC	1490	
Vero Beach, Fla.	WAXE	1370	
	WTTB	1490	A
Vicksburg, Miss.	WQBC	1420	M
	WVIM	1490	
Victoria, B.C.	CJVI	900	
	CFAX	870	
	CKDA	1220	
Victoria, Tex.	KNAL	1410	
Victoriaville, Que.	CFDA	1380	
Victorville, Calif.	KCIN	1590	
Vidalia, Ga.	WVOP	970	
Vieques, P.R.	WIVV	1370	
Ville Marie, Que.	CKVM	710	
Ville Platte, La.	KVPI	1050	
Ville St. Georges, Que.	CKRB	1460	
Vincennes, Ind.	WAOV	1450	M
Vineland, N.J.	WWBZ	1360	
	WDVL	1270	
Vinita, Okla.	KVIN	1470	
Vinton, Va.	WKBA	1550	
Virginia, Minn.	WHLB	1400	N
Virginia Bch., Va.	WBOF	1550	
Viroqua, Wis.	WISV	1360	
Visalia, Calif.	KONG	1400	
Vivian, La.	KLVI	1600	
Waco, Tex.	WACO	1580	A
	KAWA	1010	
	KBGO	1580	
	KWTX	1230	M
Wadena, Minn.	KWAD	920	M
Wadesboro, N.C.	WADE	1210	
Wailuku, Hawaii	KMVI	550	N
Waipahu, Hawaii	KAHU	940	
Walhalla, S.C.	WGOG	1460	
Wallace, Idaho	KWAL	620	M
Wallace, N.C.	WLSE	1400	
Walla Walla, Wash.	KHIT	1320	
	KUJ	1420	M
	KTEL	1490	A
Walnut Ridge, Ark.	KRLW	1320	
Walsenburg, Colo.	KFLJ	1380	
Walterboro, S.C.	WALD	1220	A
Waltham, Mass.	WCRB	1330	
Walton, N.Y.	WDLA	1270	
Ward Ridge, Fla.	WJOE	1570	
Ware, Mass.	WARE	1250	M
Warner Robbins, Ga.	WRPB	1350	A
Warren, Ark.	KWRF	860	
Warren, Ohio	WHHH	1440	
Warren, Pa.	WNAE	1310	
Warrensburg, Mo.	KOKO	1450	
Warrenton, Mo.	KWRE	730	
Warrenton, Va.	WEER	1570	
	WKCW	1420	
Warsaw, Ind.	WRSW	1480	
Warsaw, Va.	WNNT	690	
Warwick-E.Greenwich, R.I.	WYNG	1590	
Wasco, Calif.	KWSO	1050	
Washington, D.C.	WGMS	570	
	WMAL	630	A
	WOL	1450	M
	WOOK	1340	
	WWDC	1260	
	WRC	980	N
	WTOP	1500	C
Washington, Ga.	WKLE	1370	
Washington, Ind.	WAMW	1580	
Washington, Iowa	KCII	1380	
Washington, N.J.	WCRV	1580	
	WITN	930	A
Washington, N.C.	WEEW	1320	
Washington, Pa.	WJPA	1450	M
Washington Court House, Ohio	WCHO	1250	
Waterbury, Conn.	WATR	1320	A
	WBRY	1590	C
	WWCO	1240	M
Waterbury, Vt.	WDEV	550	M
Waterloo, Iowa	KXEL	1540	A
	KNWS	1090	
	KWWL	1330	M
Watertown, N.Y.	WATN	1240	
	WOTT	1410	
	WWNY	790	C
Watertown, S.Dak.	KSDR	1480	
	KWAT	950	M
Watertown, Wis.	WTTN	1580	
Waterville, Me.	WTVL	1490	A
Watseka, Ill.	WGFA	1360	
Watsonville, Calif.	KOMY	1340	
Wauchula, Fla.	WAUC	1310	
Waukegan, Ill.	WKRS	1220	
Waukesha, Wis.	WAUX	1510	
Waupaca, Wis.	WDUX	800	A
Wausau, Wis.	WRIG	1400	N
	WSAU	550	A
	WHVF	1230	
Waverly, Iowa	KWVY	1470	
Waverly, Ohio	WPKO	1380	
Waxahachie, Tex.	KBEC	1390	
Waycross, Ga.	WACL	570	
	WAYX	1230	M
Waynesboro, Ga.	WBRO	1310	
Waynesboro, Miss.	WABO	990	
Waynesboro, Pa.	WAYZ	1380	
Waynesboro, Va.	WAYB	1490	M
	WRWV	970	
Waynesburg, Pa.	WANB	1580	
Waynesville, Mo.	KJPW	1390	
Waynesville, N.C.	WHCC	1400	
Weatherford, Tex.	KZEE	1220	
Webster City, Iowa	KJFJ	1570	
Weed, Calif.	KOAD	800	
Weirton, W.Va.	WEIR	1430	N
Weiser, Idaho	KWEI	1260	
Welch, W.Va.	WELC	1150	
	WOVE	1340	M
Weldon, N.C.	WCNF	1400	
Welland, Ontario	CHOW	1470	
Wellsboro, Pa.	WNBT	1490	M
Wellston, Ohio	WKOV	1330	
Wellsville, N.Y.	WLSV	790	
Wenatchee, Wash.	KPQ	560	A
	KUEN	900	
	KMEL	1340	M
Wendell-Zebulon, N.C.	WETC	540	
Weslaco, Tex.	KRGV	1290	N
West Allis, Wis.	WAWA	1590	
W. Bend, Wis.	WBKV	1470	
Westbrook, Me.	WJAB	1440	
West Covina, Calif.	KGRB	900	
W. Frankfort, Ill.	WFRX	1300	
West Jefferson, N.C.	WKSK	1600	
W. Memphis, Ark.	KSUD	730	
W. Monroe, La.	KUZN	1310	
W. Palm Beach, Fla.	WEAT	850	M
	WJNO	1230	C
	WIRK	1290	M
West Plains, Mo.	KWPM	1450	
West Point, Ga.	WBMK	1310	
West Point, Miss.	WROB	1450	M
Westport, Conn.	WMMM	1260	M
W. Springfield, Mass.	WTXL	1490	A
W. Yarmouth, Mass.	WOCB	1240	M
Westerly, R.I.	WERI	1230	M
Westfield, Mass.	WDEW	1570	
Westminster, Md.	WTTR	1470	
Weston, W.Va.	WHAW	980	M
W. Warwick, R.I.	WWRI	1450	
Wetumpka, Ala.	WETU	1250	
Wewoka-Seminole, Okla.	KWSH	1260	A
Weyburn, Sask.	CFSL	1340	
Wharton, Tex.	KANI	1500	
Wheatland, Wyo.	KYCN	1340	
Wheaton, Md.	WDON	1540	
Wheeling, W.Va.	WHLL	1600	
	WBZE	1470	
	WKWK	1400	A
	WWVA	1170	C
White Castle, La.	KEVL	1590	
White Plains, N.Y.	WFAS	1230	
White River Junc., Vt.	WWRJ	910	
Whitehall, Mich.	WCBP	1490	
Whitehorse, Y.T.	CFWH	570	
Whitesburg, Ky.	WTCW	920	
Whiteville, N.C.	WENC	1220	
Wichita, Kans.	KAKE	1240	M
	KLEO	1480	M
	KFDI	1070	N
	KFH	1330	C
	KSIR	900	
	KWBB	1410	
Wichita Falls, Tex.	KNIN	990	M
	KTRN	1290	
	KWFT	620	C
Wickenburg, Ariz.	KAKA	1250	
Wickford, R.I.	WKFD	1370	
Wildwood, N.J.	WCMC	1230	M
Wilkes-Barre, Pa.	WBAX	1240	M
	WBRE	1340	N
	WILK	980	A
Willcox, Ariz.	KWCX	1250	
Williamsburg, Ky.	WEZJ	1440	
Williamsburg, Va.	WBCI	740	
Williams Lake, B.C.	CKCQ-1	1240	
Williamson, W.Va.	WBTH	1400	M
Williamsport, Pa.	WLYC	1050	
	WRAK	1400	N
	WWPA	1340	C
Williamston, N.C.	WIAM	900	
Willimantic, Conn.	WILI	1400	M
Williston, N.D.	KEYZ	1360	
Willmar, Minn.	KWLM	1340	A
Willoughby, Ohio	WELW	1330	D
Willow Springs, Mo.	KUKU	1330	
Willows, Calif.	KIQS	1560	
Wilmington, Del.	WAMS	1380	M
	WDEL	1150	N
	WILM	1450	A
	WTUX	1290	
Wilmington, N.C.	WMFD	630	A
	WHSL	1490	
	WKLM	980	
	WGNI	1340	M
Wilmot Station, N.S.	CKAD	1490	
Wilson, N.C.	WGTM	590	C
	WLLY	1350	
	WVOT	1420	M
Winchester, Ky.	WWKY	1380	
Winchester, Tenn.	WCDT	1340	
Winchester, Va.	WINC	1400	A
	WHPL	610	
Windemere, Fla.	WXIV	1480	
Winder, Ga.	WIMO	1300	
Windom, Minn.	KDOM	1580	
Windsor, Conn.	WSOR	1480	
Windsor, N.S.	CFAB	1450	
Windsor, Ont.	CBE	1550	
	CKLW	800	M
Winfield, Ala.	WEZQ	1300	
Wingham, Ont.	CKNX	920	
Winnemucca, Nev.	KWNA	1400	
Winnfield, La.	KVCL	1270	
Winner, S.Dak.	KWYR	1260	
Winnipeg, Man.	CBW	990	
	CKRC	630	
	CKY	580	
	CJOB	680	
Winnsboro, La.	KMAR	1570	
Winnsboro, S.C.	WCKM	1250	
	WRBI	980	
Winona, Minn.	KWNO	1230	A
	KAGE	1380	
Winona, Miss.	WONA	1570	
Winslow, Ariz.	KVNC	1010	A
	KINO	1230	
Winston-Salem, N.C.	WAAA	980	
	WAIR	1340	
	WPEG	1550	
	WSJS	600	N
	WTOB	1380	M-C
Winter Garden, Fla.	WOKB	1600	
Winter Haven, Fla.	WSIR	1490	M
	WINT	1360	
Winter Park, Fla.	WABR	1440	M
Wisconsin Rapids, Wis.	WFHR	1320	M
	WRNE	1220	
Wolf Pt., Mont.	KVCK	1450	M
Wood River, Ill.	WBBY	590	M
Woodside, N.Y.	WWRL	1600	
Woodstock, N.B.	CJCJ	920	
Woodstock, Ont.	CKOX	1340	
Woodward, Okla.	KSIW	1450	
Woonsocket, R.I.	WNRI	1380	
	WWON	1240	
Wooster, Ohio	WWST	960	
Worcester, Mass.	WAAB	1440	M-N-A
	WNEB	1230	
	WORC	1310	
	WTAG	580	C
Worland, Wyo.	KWOR	1340	M
Worthington, Minn.	KWOA	730	
Worthington, Ohio	WRFD	880	
Wynne, Ark.	KWYN	1400	
Wytheville, Va.	WYVE	1280	
Yakima, Wash.	KIT	1280	
	KIMA	1460	C
	KBBO	1390	
	KUTI	980	
	KYAK	1390	M
Yankton, S.D.	KYNT	1450	
	WNAX	570	C
Yarmouth, N.S.	CJLS	1340	
Yauco, P.R.	WKFE	1550	
Yazoo City, Miss.	WAZF	1230	
Yellowknife, N.W.T.	CFYK	1340	
York, Nebr.	KAWL	1370	
York, Pa.	WNOW	1250	M
	WORK	1350	N
	WSBA	910	A
York, S.C.	WYCL	1580	
Yorkton, Sask.	CJGX	940	
Youngstown, Ohio	WBBW	1240	M
	WFMJ	1390	N
	WKBN	570	C
Ypsilanti, Mich.	WYSI	1480	
	WYNZ	1520	
Yreka, Calif.	KSYC	1490	
Yuba City, Calif.	KUBA	1600	
Yuma, Ariz.	KAGR	1450	
	KOFA	1240	
	KBLU	1320	
	KVOY	1400	A
	KYUM	560	N
Zanesville, Ohio	WHIZ	1240	N
Zarephath, N.J.	WAWZ	1380	
Zephyr Hills, Fla.	WZRH	1400	

U. S. AM Stations by Call Letters

C.L.	Location	Kc.
KAAA	Kingman, Ariz.	1230
KAAB	Hot Springs, Ark.	1340
KAAY	Little Rock, Ark.	1090
KABC	Los Angeles, Calif.	790
KABI	Ketchikan, Alaska	580
KABL	Oakland, Calif.	960
KABQ	Albuquerque, N.M.	1350
KABR	Aberdeen, S.Dak.	1420
KACE	Riverside, Calif.	1570
KACI	The Dalles, Oreg.	1300
KACT	Andrews, Tex.	1360
KACY	Port Hueneme, Calif.	1520
KADA	Ada, Okla.	1230
KADL	Pine Bluff, Ark.	1270
KADO	Marshall, Tex.	1410
KADY	St. Charles, Mo.	1460
KAFP	Petaluma, Calif.	1490
KAFY	Bakersfield, Calif.	550
KAGE	Winona, Minn.	1380
KAGH	Crossett, Ark.	800
KAGI	Grants Pass, Oreg.	930
KAGO	Klamath Falls, Oreg.	1150
KAGR	Yuba City, Calif.	1450
KAGT	Anacortes, Wash.	1340
KAHI	Auburn, Calif.	950
KAHR	Redding, Calif.	1330
KAHU	Waipahu, Hawaii	920
KAIM	Kaimuki, Hawaii	870
KAIR	Tucson, Ariz.	1490
KAJI	Little Rock, Ark.	1250
KAJO	Grants Pass, Oreg.	1270
KAKA	Wickenburg, Ariz.	1250
KAKC	Tulsa, Okla.	970
KAKE	Wichita, Kan.	1240
KALB	Alexandria, La.	580
KALE	Richland, Wash.	960
KALF	Mesa, Ariz.	1510
KALG	Alamogordo, N.Mex.	1230
KALI	Pasadena, Calif.	1430
KALL	Salt Lake City, Utah	910
KALM	Thayer, Mo.	1290
KALN	Iola, Kan.	1370
KALT	Atlanta, Tex.	900
KALV	Alva, Okla.	1430
KAMD	Camden, Ark.	910
KAML	Kenedy, Tex.	990
KAMO	Rogers, Ark.	1390
KAMP	El Centro, Calif.	1430
KAMY	McCamey, Tex.	1450
KANA	Anaconda, Mont.	580
KANB	Shreveport, La.	1300
KAND	Corsicana, Tex.	1340
KANE	New Iberia, La.	1240
KANI	Wharton, Tex.	1500
KANN	Ogden, Utah	1250
KANO	Anoka, Minn.	1470
KANS	Independence, Mo.	1510
KAOH	Duluth, Minn.	1390
KAOK	Lake Charles, La.	1400
KAOL	Carrollton, Mo.	1430
KAOR	Oroville, Calif.	1340
KAPA	Raymond, Wash.	1340
KAPB	Marksville, La.	1370
KAPE	San Antonio, Tex.	1480
KAPI	Pueblo, Colo.	690
KAPR	Douglas, Ariz.	930
KAPS	Mt. Vernon, Wash.	1470
KAPT	Salem, Ore.	1220
KAPY	Port Angeles, Wash.	1290
KARA	Albuquerque, N.M.	1310
KARE	Atchison, Kan.	1470
KARI	Blaine, Wash.	550
KARK	Little Rock, Ark.	920
KARM	Fresno, Calif.	1430
KARR	Great Falls, Mont.	1400
KARS	Belen, N.M.	860
KART	Jerome, Idaho	1400
KARY	Prosser, Wash.	1310
KASE	Austin, Tex.	970
KASH	Eugene, Ore.	1600
KASI	Ames, Iowa	1430
KASK	Ontario, Calif.	1510
KASL	Newcastle, Wyo.	1240
KASM	Albany, Minn.	1150
KASO	Minden, La.	1240
KAST	Astoria, Ore.	1370
KASY	Auburn, Wash.	1220
KATE	Albert Lea, Minn.	1450
KATI	Casper, Wyo.	1400
KATL	Miles City, Mont.	1340
KATN	Boise, Idaho	1010
KATO	Safford, Ariz.	1230
KATQ	Texarkana, Tex.	940
KATR	Eugene, Ore.	1320
KATY	San Luis Obispo, Cal.	1340
KATZ	St. Louis, Mo.	1600
KAUS	Austin, Minn.	1480
KAVE	Carlsbad, N.Mex.	1240
KAVI	Rocky Ford, Colo.	1320
KAVL	Lancaster, Calif.	610
KAVR	Apple Valley, Calif.	960
KAWA	Waco, Tex.	1010
KAWL	York, Neb.	1370
KAWT	Douglas, Ariz.	1450
KAYC	Beaumont, Tex.	1450
KAYE	Puyallup, Wash.	1450
KAYG	Lakewood, Wash.	1480
KAYL	Storm Lake, Iowa	990
KAYO	Seattle, Wash.	1150
KAYS	Hays, Kans.	1400
KAYT	Rupert, Idaho	970
KBAL	San Saba, Tex.	1410
KBAM	Longview, Wash.	1270
KBAN	Bowie, Tex.	1410
KBAR	Burley, Idaho	1230
KBBA	Benton, Ark.	690
KBBB	Borger, Tex.	1600
KBBC	Centerville, Utah	1600
KBBO	Yakima, Wash.	1390
KBBR	North Bend, Oreg.	1340
KBBS	Buffalo, Wyo.	1450
KBCH	Oceanlake, Oreg.	1380
KBCL	Shreveport, La.	1220
KBEA	Mission, Kans.	1480
KBEC	Waxahachie, Tex.	1390
KBEE	Modesto, Calif.	970
KBEK	Elk City, Okla.	1240
KBEL	Idabel, Okla.	1240
KBEN	Carrizo Sprgs., Tex.	1450
KBER	San Antonio, Tex.	1150
KBET	Reno, Nev.	1340
KBEV	Portland, Oreg.	1010
KBFS	Belle Fourche, S.Dak.	1450
KBGN	Caldwell, Idaho	910
KBGO	Waco, Tex.	1580
KBHC	Nashville, Ark.	1260
KBHM	Branson, Mo.	1220
KBHS	Hot Springs, Ark.	590
KBIF	Fresno, Calif.	900
KBIG	Avalon, Calif.	740
KBIM	Roswell, N.Mex.	910
KBIS	Bakersfield, Calif.	970
KBIX	Muskogee, Okla.	1490
KBIZ	Ottumwa, Iowa	1240
KBJT	Fordyce, Ark.	1570
KBKR	Baker, Oreg.	1490
KBKW	Aberdeen, Wash.	1450
KBLA	Burbank, Calif.	1490
KBLF	Red Bluff, Calif.	1490
KBLI	Blackfoot, Idaho	690
KBLR	Bolivar, Mo.	1550
KBLT	Big Lake, Tex.	1290
KBLU	Yuma, Ariz.	1320
KBLY	Gold Beach, Oreg.	1220
KBMI	Henderson, Nev.	1400
KBMN	Bozeman, Mont.	1230
KBMO	Benson, Minn.	1290
KBMW	Breckinrdg., Minn.	1450
KBMX	Coalinga, Calif.	1470
KBMY	Billings, Mont.	1240
KBND	Bend, Oreg.	1110
KBOA	Kennett, Mo.	830
KBOE	Oskaloosa, Iowa	740
KBOI	Boise, Idaho	950
KBOK	Malvern, Ark.	1310
KBOL	Boulder, Colo.	1490
KBOM	Bismark-Mandan, N. Dak.	1270
KBON	Omaha, Nebr.	1490
KBOP	Pleasanton, Tex.	1380
KBOR	Brownsville, Tex.	1600
KBOW	Butte, Mont.	1490
KBOX	Dallas, Tex.	1480
KBOY	Medford, Oreg.	730
KBPS	Portland, Oreg.	1450
KBRC	Mt. Vernon, Wash.	1430
KBRI	Brinkley, Ark.	1570
KBRK	Brookings, S.Dak.	1430
KBRL	McCook, Nebr.	1300
KBRN	Brighton, Colo.	800
KBRO	Bremerton, Wash.	1490
KBRR	Leadville, Colo.	1230
KBRS	Springdale, Ark.	1340
KBRV	Soda Sprgs., Ida.	540
KBRX	O'Neill, Nebr.	1350
KBRZ	Freeport, Texas	1460
KBSF	Springhill, La.	1460
KBST	Big Spring, Tex.	1490
KBTA	Batesville, Ark.	1340
KBTC	Houston, Mo.	1250
KBTM	Jonesboro, Ark.	1230
KBTN	Neosho, Mo.	1420
KBTO	El Dorado, Kans.	1360
KBTR	Denver, Colo.	710
KBUC	Corona, Calif.	1370
KBUD	Athens, Tex.	1410
KBUH	Brigham City, Utah	800
KBUN	Bemidji, Minn.	1450
KBUR	Burlington, Iowa	1490
KBUS	Mexia, Tex.	1590
KBUY	Amarillo, Tex.	1010
KBUZ	Mesa, Ariz.	1310
KBVM	Lancaster, Calif.	1380
KBVU	Bellevue, Wash.	1540
KBWD	Brownwood, Tex.	1380
KBYE	Okla. City, Okla.	890
KBYG	Big Spring, Tex.	1400
KBYP	Shamrock, Tex.	1580
KBYR	Anchorage, Alaska	1270
KBZY	Salem, Oreg.	1490
KBZZ	LaJunta, Colo.	1400
KCAC	Phoenix, Ariz.	1010
KCAD	Abilene, Tex.	1560
KCAL	Redlands, Calif.	1410
KCAP	Helena, Mont.	1340
KCAR	Clarksville, Tex.	1350
KCAS	Slaton, Tex.	1050
KCBC	Des Moines, Iowa	1390
KCBD	Lubbock, Tex.	1590
KCBQ	San Diego, Calif.	1170
KCBS	San Fran., Calif.	740
KCCL	Paris, Ark.	1460
KCCO	Lawton, Okla.	1050
KCCR	Pierre, S.Dak.	1590
KCCT	Corpus Christi, Tex.	1150
KCDI	Kirkland, Wash	
KCEE	Tucson, Ariz.	790
KCEY	Turlock, Calif.	1390
KCFA	Spokane, Wash.	1330
KCFH	Cuero, Tex.	1600
KCFI	Cedar Falls, Iowa	1250
KCGM	Columbia, Mo.	1580
KCHA	Charles City, Iowa	1580
KCHE	Cherokee, Iowa	1440
KCHI	Chillicothe, Mo.	1010
KCHJ	Delano, Calif.	1010
KCHR	Charleston, Mo.	1350
KCHS	Truth or Consequences, New Mexico	1400
KCHV	Coachella, Calif.	970
KCHY	Cheyenne, Wyo.	1590
KCID	Caldwell, Idaho	1490
KCII	Washington, Iowa	1380
KCIJ	Shreveport, La.	1050
KCIL	Houma, La.	1490
KCIM	Carroll, Iowa	1380
KCIN	Victorville, Calif.	1590
KCJB	Minot, N.Dak.	910
KCJH	San Luis Obispo, Cal.	1280
KCKC	San Bernardino, Cal.	1350
KCKG	Sonora, Tex	1240
KCKN	Kansas City, Kans.	1340
KCKW	Jena, La.	1480
KCKY	Coolidge, Ariz.	1150
KCLA	Pine Bluff, Ark.	1400
KCLE	Cleburne, Tex.	1120
KCLF	Clifton, Ariz.	1400
KCLN	Clinton, Iowa	1390
KCLO	Leavenworth, Kans.	1410
KCLR	Ralls, Tex.	1530
KCLS	Flagstaff, Ariz.	600
KCLU	Rolla, Mo.	1590
KCLV	Clovis, N.Mex.	1240
KCLW	Hamilton, Tex.	900
KCLX	Colfax, Wash.	1450
KCMC	Texarkana, Tex.	1230
KCMJ	Palm Sprgs., Calif.	1010
KCMO	Kansas City, Mo.	810
KCMS	Manitou Sprgs., Colo.	1490
KCNI	Broken Bow, Nebr.	1280
KCNO	Alturas, Calif.	570
KCNY	San Marcos, Tex.	1470
KCOB	Newton, Iowa	1280
KCOG	Centerville, Iowa	1400
KCOH	Houston, Tex.	1430
KCOK	Tulare, Calif.	1270
KCOL	Ft. Collins, Colo.	1410
KCON	Conway, Ark.	1230
KCOR	San Antonio, Tex.	1350
KCOW	Alliance, Nebr.	1400
KCOY	Santa Maria, Calif.	1400
KCPX	Salt Lake City, Utah	1320
KCRA	Sacramento, Calif.	1320
KCRB	Chanute, Kans.	1460
KCRC	Enid, Okla.	1390
KCRG	Cedar Rapids, Iowa	1600
KCRM	Crane, Tex.	1380
KCRS	Midland, Tex.	550
KCRT	Trinidad, Colo.	1240
KCRV	Caruthersville, Mo.	1370
KCSJ	Pueblo, Colo.	590
KCSR	Chadron, Nebr.	1450
KCTA	Corpus Christi, Tex.	1030
KCTI	Gonzales, Tex.	1450
KCTY	Salinas, Calif.	980
KCTX	Childress, Tex.	1510
KCUB	Tucson, Ariz.	1290
KCUE	Red Wing, Minn.	1250
KCUL	Fort Worth, Tex.	1540
KCVL	Colville, Wash.	1270
KCVR	Lodi, Calif.	1570
KCYL	Lampasas, Tex.	1450
KDAB	Arvada, Colo.	1550
KDAC	Ft. Bragg, Calif.	1230
KDAO	Weed, Calif.	800
KDAK	Carrington, N.D.	1600
KDAL	Duluth, Minn.	610
KDAN	Eureka, Calif.	790
KDAV	Lubbock, Tex.	580
KDAY	Santa Monica, Calif.	1580
KDB	Santa Barbara, Calif.	1490
KDBC	Mansfield, La.	1360
KDBM	Dillon, Mont.	800
KDBS	Alexandria, La.	1410
KDDD	Dumas, Tex.	800
KDEC	Decorah, Iowa	1240
KDEF	Albuquerque, N.Mex.	1150
KDEN	Denver, Colo.	1340
KDEO	El Cajon, Calif.	910
KDES	Palm Sprgs., Calif.	920
KDET	Center, Tex.	930
KDEX	Dexter, Mo.	1590
KDEY	Boulder, Colo.	1360
KDGO	Durango, Colo.	1240
KDHI	Twenty-nine Palms, California	1250
KDHL	Faribault, Minn.	920
KDIA	Oakland, Calif.	1310
KDIO	Ortonville, Minn.	1350
KDIX	Dickinson, N.Dak.	1230
KDJI	Holbrook, Ariz.	1270
KDKA	Pittsburgh, Pa.	1020
KDKD	Clinton, Mo.	1280
KDLA	DeRidder, La.	1010
KDLK	Del Rio, Tex.	1230
KDLM	Detroit Lakes, Minn.	1340
KDLR	Devils Lake, N.Dak.	1240
KDLS	Perry, Iowa	1310
KDMA	Montevideo, Minn.	1450
KDMO	Carthage, Mo.	1490
KDMS	El Dorado, Ark.	1290
KDNT	Denton, Tex.	1440
KDOK	Tyler, Tex.	1330
KDOL	Mojave, Calif.	1340
KDOM	Windom, Minn.	1580
KDON	Salinas, Calif.	1460
KDOT	Reno, Nev.	1230
KDOV	Medford, Oreg.	1300
KDQN	DeQueen, Ark.	1390
KDRO	Sedalia, Mo.	1490
KDRS	Paragould, Ark.	1490
KDSJ	Deadwood, S.Dak.	980
KDSN	Denison, Iowa	1580
KDSX	Denison, Tex.	950
KDTA	Delta, Colo.	1400
KDTH	Dubuque, Iowa	1370
KDUZ	Hutchinson, Minn.	1260
KDWB	St. Paul, Minn.	630
KDWT	Stamford, Tex.	1200
KDXE	No. Little Rock, Ark.	1380
KDXU	St. George, Utah	1450
KDYL	Tooele, Utah	990
KDZA	Pueblo, Colo.	1230
KEAN	Brownwood, Tex.	1240
KEAP	Fresno, Calif.	980
KEBE	Jacksonville, Tex.	1400
KECK	Odessa, Tex.	920
KEDD	Dodge City, Kans.	1550
KEDO	Longview, Wash.	1400
KEED	Springfield, Oreg.	1050
KEEE	Nacogdoches, Tex.	1230
KEEL	Shreveport, La.	710
KEEN	San Jose, Calif.	1370
KEEP	Twin Falls, Idaho	1450
KEES	Gladewater, Tex.	1430
KEKO	Kailua, Hawaii	1130
KELA	Centralia, Wash.	1470
KELD	El Dorado, Ark.	1400
KELI	Tulsa, Okla.	1430
KELK	Elko, Nev.	1240
KELO	Sioux Falls, S.Dak.	1320
KELP	El Paso, Tex.	920
KELR	El Reno, Okla.	1460
KELY	Ely, Nev.	1230
KENA	Mena, Ark.	1450
KENE	Toppenish, Wash.	1490
KENI	Anchorage, Alaska	550
KENL	Arcata, Calif.	1340
KENM	Portales, N.Mex.	1450
KENN	Farmington, N.M.	1390
KENO	Las Vegas, Nev.	1460
KENS	San Antonio, Tex.	680
KENY	Bellingham-Ferndale, Wash.	930
KEOK	Payette, Idaho	1450
KEOS	Flagstaff, Ariz.	1290
KEPR	Kennewick, Wash.	610
KEPS	Eagle Pass, Tex.	1270
KERB	Kermit, Tex.	600
KERC	Eastland, Tex.	1590
KERG	Eugene, Oreg.	1280
KERN	Bakersfield, Calif.	1410
KERV	Kerrville, Tex.	1230
KESM	Eldorado Springs, Mo.	1580
KEST	Boise, Idaho	790
KETO	Seattle, Wash.	1590
KETX	Livingston, Tex.	1440
KEUN	Eunice, La.	1490
KEVE	Minneapolis, Minn.	1440
KEVL	White Castle, La.	1590
KEVT	Tucson, Ariz.	690
KEWB	Oakland, Calif.	910
KEWI	Topeka, Kans.	1440
KEX	Portland, Oreg.	1190
KEXO	Grand Junc., Colo.	1230
KEYD	Oakes, N.Dak.	1220
KEYE	Perryton, Tex.	1400
KEYJ	Jamestown, N.Dak.	1400
KEYL	Long Prairie, Minn.	1400
KEYR	Terrytown, Nebr.	690
KEYS	Corpus Christi, Tex.	1440
KEYY	Provo, Utah	1450
KEYZ	Williston, N.Dak.	1360
KEZU	Rapid City, S.Dak.	920
KEZY	Anaheim, Calif.	1190
KFAB	Omaha, Nebr.	1110
KFAC	Los Angeles, Calif.	1330
KFAL	Fulton, Mo.	900
KFAM	St. Cloud, Minn.	1450
KFAR	Fairbanks, Alaska	610
KFAX	San Francisco, Calif.	1100
KFAY	Fayetteville, Ark.	1250
KFBB	Great Falls, Mont.	1310
KFBC	Cheyenne, Wyo.	1240
KFBK	Sacramento, Calif.	1530
KFCB	Redfield, S. Dak.	1380
KFDA	Amarillo, Tex.	1440
KFDF	Van Buren, Ark.	1580
KFDI	Wichita, Kansas	1070
KFDM	Beaumont, Tex.	560
KFDR	Grand Coulee, Wash.	1360
KFEL	Pueblo, Colo.	970
KFEQ	St. Joseph, Mo.	680
KFFA	Helena, Ark.	1360
KFGO	Fargo, N.D.	790
KFGQ	Boone, Iowa	1260
KFH	Wichita, Kans.	1330
KFI	Los Angeles, Calif.	640
KFIF	Tucson, Ariz.	1550
KFIV	Modesto, Calif.	1360
KFIZ	Fond du Lac, Wis.	1450
KFJB	Marshalltown, Iowa	1230
KFJM	Grand Forks, N.Dak	1370
KFJZ	Ft. Worth, Tex.	1270
KFKA	Greeley, Colo.	1310
KFKF	Bellevue, Wash.	1330
KFKU	Lawrence, Kans.	1250
KFLD	Floydada, Tex.	900

C.L.	Location	Kc.
KFLJ	Walsenburg, Colo.	1380
KFLT	Mountain Home, Ida.	1240
KFLW	Klamath Falls, Oreg.	1450
KFLY	Corvallis, Oreg.	1240
KFMB	San Diego, Calif.	540
KFMJ	Tulsa, Okla.	1050
KFML	Denver, Colo.	1390
KFMD	Flat River, Mo.	1240
KFNF	Shenandoah, Iowa	920
KFNV	Ferriday, La.	1600
KFNW	Fargo, N.Dak.	900
KFOR	Lincoln, Nebr.	1240
KFOX	Long Beach, Calif.	1280
KFPW	Ft. Smith, Ark.	1230
KFQD	Anchorage, Alaska	730
KFRA	Franklin, La.	1390
KFRB	Fairbanks, Alaska	900
KFRC	San Francisco, Calif.	610
KFRD	Rosenberg, Tex.	980
KFRE	Fresno, Calif.	940
KFRM	Kansas City, Mo.	550
KFRO	Longview, Tex.	1370
KFRU	Columbia, Mo.	1400
KFSA	Ft. Smith, Ark.	950
KFSB	Joplin, Mo.	1310
KFSC	Denver, Colo.	1220
KFSD	San Diego, Calif.	600
KFSG	Los Angeles, Calif.	1150
KFST	Ft. Stockton, Tex.	860
KFTM	Ft. Morgan, Colo.	1400
KFTV	Paris, Tex.	1250
KFTW	Fredericktown, Mo.	1450
KFUN	Las Vegas, N.Mex.	1230
KFUO	St. Louis, Mo.	850
KFVS	Cape Girardeau, Mo.	960
KFWB	Los Angeles, Calif.	980
KFXD	Nampa, Idaho	580
KFXM	San Bernardino, Calif.	590
KFYN	Bonham, Tex.	1420
KFYO	Lubbock, Tex.	790
KFYR	Bismarck, N.Dak.	550
KGA	Spokane, Wash.	1510
KGAF	Gainesville, Tex.	1580
KGAK	Gallup, N.Mex.	1330
KGAL	Lebanon, Oreg.	920
KGAS	Carthage, Tex.	1590
KGAY	Salem, Oreg.	1430
KGB	San Diego, Calif.	1360
KGBC	Galveston, Tex.	1540
KGBS	Los Angeles, Calif.	1020
KGBT	Harlingen, Tex.	1530
KGBX	Springfield, Mo.	1260
KGCA	Rugby, N.D.	1450
KGCX	Sidney, Mont.	1480
KGDN	Edmonds, Wash.	630
KGEE	Bakersfield, Calif.	1230
KGEK	Sterling, Colo.	1230
KGEM	Boise, Idaho	1140
KGEN	Tulare, Calif.	1370
KGER	Long Beach, Calif.	1390
KGEZ	Kalispell, Mont.	600
KGFF	Shawnee, Okla.	1450
KGFJ	Los Angeles, Calif.	1230
KGFL	Roswell, N.Mex.	1400
KGFW	Kearney, Nebr.	1340
KGFX	Pierre, S.Dak.	630
KGGF	Coffeyville, Kans.	690
KGGG	Forest Grove, Oreg.	1570
KGGM	Albuquerque, N.Mex.	610
KGHF	Pueblo, Colo.	1350
KGHL	Billings, Mont.	790
KGHM	Brookfield, Mo.	1470
KGHS	International Falls, Minn.	1230
KGHT	Hollister, Calif.	1520
KGIL	San Fernando, Calif.	1260
KGIW	Alamosa, Colo.	1450
KGKB	Tyler, Tex.	1490
KGKL	San Angelo, Tex.	960
KGLC	Miami, Okla.	910
KGLE	Glendive, Mont.	590
KGLN	Glenwood Sprgs., Colo.	980
KGLO	Mason City, Iowa	1300
KGLU	Safford, Ariz.	1480
KGMB	Honolulu, Hawaii	590
KGMC	Englewood, Colo.	1150
KGMI	Bellingham, Wash.	790
KGMO	Cape Girardeau, Mo.	1220
KGMS	Sacramento, Calif.	1380
KGMT	Fairbury, Nebr.	1310
KGNB	New Braunfels, Tex.	1420
KGNC	Amarillo, Tex.	710
KGND	Dodge City, Kans.	1370
KGNS	Laredo, Tex.	1300
KGO	San Francisco, Calif.	810
KGON	Oregon City, Oreg.	1520
KGOS	Torrington, Wyo.	1490
KGPC	Grafton, N.Dak.	1340
KGRI	Henderson, Tex.	1000
KGRL	Bend, Oreg.	940
KGRN	Grinnell, Iowa	1410
KGRO	Gresham, Oreg.	1230
KGRS	Pasco, Wash.	1340
KGRT	Las Cruces, N.Mex.	570
KGST	Fresno, Calif.	1600
KGU	Honolulu, Hawaii	760
KGUC	Gunnison, Colo.	1490
KGUD	Santa Barbara, Calif.	990
KGUL	Port Lavaca, Tex.	1560
KGVL	Greenville, Tex.	1400
KGVO	Missoula, Mont.	1290
KGVW	Belgrade, Mont.	630
KGW	Portland, Oreg.	620
KGWA	Enid, Okla.	960
KGY	Olympia, Wash.	1240
KGYN	Guymon, Okla.	1220
KHAI	Honolulu, Hawaii	1090
KHAK	Cedar Rapids, Iowa	1360
KHAL	Homer, La.	1300
KHAR	Anchorage, Alaska	590
KHAS	Hastings, Nebr.	1230
KHAT	Phoenix, Ariz.	1480
KHBC	Hilo, Hawaii	970
KHBM	Monticello, Ark.	1430
KHBR	Hillsboro, Tex.	1560
KHEM	Big Springs, Tex.	1270
KHEN	Henryetta, Okla.	1590
KHEP	Phoenix, Ariz.	1280
KHER	Santa Maria, Calif.	1600
KHEY	El Paso, Tex.	690
KHFH	Fry, Ariz.	1420
KHHH	Pampa, Tex.	1230
KHIT	Walla Walla, Wash.	1320
KHJ	Los Angeles, Calif.	930
KHMO	Hannibal, Mo.	1070
KHOB	Hobbs, N.Mex.	1390
KHOE	Truckee, Calif.	1400
KHOG	Fayetteville, Ark.	1440
KHOK	Hoquiam, Wash.	1560
KHOT	Madera, Calif.	1250
KHOW	Denver, Colo.	630
KHOZ	Harrison, Ark.	900
KHQ	Spokane, Wash.	590
KHSJ	Hemet, Calif.	1320
KHSL	Chico, Calif.	1290
KHTN	Houston, Mo.	1250
KHUB	Fremont, Nebr.	1340
KHUM	Santa Rosa, Calif.	1580
KHUZ	Borger, Tex.	1490
KHVH	Honolulu, Hawaii	1040
KIAL	Astoria, Ore.	1230
KIBE	Palo Alto, Calif.	1220
KIBH	Seward, Alaska	1340
KIBL	Beeville, Tex.	1490
KIBS	Bishop, Calif.	1230
KICA	Clovis, N.M.	980
KICD	Spencer, Iowa	1240
KICK	Springfield, Mo.	1340
KICM	Golden, Colo.	1250
KICO	Calexico, Calif.	1490
KICY	Nome, Alaska	850
KID	Idaho Falls, Idaho	590
KIDD	Monterey, Calif.	630
KIDO	Boise, Idaho	630
KIEV	Glendale, Calif.	870
KIFG	Iowa Falls, Ia.	1510
KIFI	Idaho Falls, Idaho	1280
KIFN	Phoenix, Ariz.	860
KIFW	Sitka, Alaska	1230
KIHN	Hugo, Okla.	1340
KIHR	Hood River, Oreg.	1340
KIJV	Huron, S.Dak.	1340
KIKI	Honolulu, Hawaii	830
KIKK	Pasadena, Tex.	650
KIKD	Miami, Ariz.	1340
KIKS	Sulphur, La.	1310
KILE	Galveston, Tex.	1400
KILO	Grand Forks, S.Dak.	1440
KILT	Houston, Tex.	610
KIMA	Yakima, Wash.	1460
KIMB	Kimball, Nebr.	1280
KIML	Gillette, Wyo.	1490
KIMM	Rapid City, S.D.	1150
KIMN	Denver, Colo.	950
KIMO	Hilo, Hawaii	850
KIMP	Mt. Pleasant, Tex.	960
KIND	Independence, Kans.	1010
KINE	Kingsville, Tex.	1330
KING	Seattle, Wash.	1090
KINO	Winslow, Ariz.	1230
KINS	Eureka, Calif.	980
KINT	El Paso, Tex.	1590
KINY	Juneau, Alaska	800
KIOA	Des Moines, Iowa	940
KIOT	Barstow, Calif.	1310
KIOX	Bay City, Tex.	1270
KIPA	Hilo, Hawaii	1110
KIQS	Willows, Calif.	1560
KIRO	Seattle, Wash.	710
KIRT	Mission, Tex.	1580
KIRX	Kirksville, Mo.	1450
KISD	Sioux Falls, S.Dak.	1230
KISN	Vancouver, Wash.	910
KIST	Santa Barbara, Calif.	1340
KIT	Yakima, Wash.	1280
KITE	San Antonio, Tex.	930
KITI	Chehalis, Wash.	1420
KITN	Olympia, Wash.	920
KIUL	Garden City, Kans.	1240
KIUN	Pecos, Tex.	1400
KIUP	Durango, Colo.	930
KIVY	Crockett, Tex.	1290
KIXI	Seattle, Wash.	910
KIXL	Dallas, Tex.	1040
KIXX	Provo, Utah	1400
KIXZ	Amarillo, Tex.	940
KIZZ	El Paso, Tex.	1150
KJAM	Madison, S.Dak.	1390
KJAN	Atlantic, Iowa	1220
KJAX	Santa Rosa, Calif.	1150
KJAY	Sacramento, Calif.	1430
KJBC	Midland, Tex.	1150
KJCF	Festus, Mo.	1400
KJCK	Junction City, Kans.	1420
KJEF	Jennings, La.	1290
KJEM	Oklahoma City, Okla.	800
KJET	Beaumont, Tex.	1380
KJFJ	Webster City, Iowa	1570
KJIM	Ft. Worth, Tex.	870
KJKJ	Flagstaff, Ariz.	1400
KJLT	North Platte, Nebr.	970
KJNO	Juneau, Alaska	630
KJOE	Shreveport, La.	1480
KJOY	Stockton, Calif.	1280
KJPW	Waynesville, Mo.	1390
KJR	Seattle, Wash.	950
KJRG	Newton, Kans.	950
KJSK	Columbus, Nebr.	900
KKAL	Denver City, Tex.	1580
KKAN	Phillipsburg, Kans.	1490
KKAR	Pomona, Calif.	1220
KKAS	Silsbee, Tex.	1300
KKCM	Jacksonville, Ark.	1500
KKEY	Vancouver, Wash.	1150
KKHI	San Francisco, Calif.	1550
KKID	Pendleton, Oreg.	1240
KKIN	Aitkin, Minn.	930
KKIS	Pittsburg, Calif.	990
KKIT	Taos, N.Mex.	1340
KKJO	St. Joseph, Mo.	1550
KKOK	Lompoc, Calif.	1410
KLAC	Los Angeles, Calif.	570
KLAD	Klamath Falls, Oreg.	960
KLAK	Lakewood, Colo.	1600
KLAM	Cordova, Alaska	1450
KLAN	Lemoore, Calif.	1320
KLAS	Las Vegas, Nev.	1230
KLBK	Lubbock, Tex.	1340
KLBM	La Grande, Oreg.	1450
KLBS	Los Banos, Calif.	1330
KLCB	Libby, Mont.	1230
KLCN	Blytheville, Ark.	910
KLCO	Poteau, Okla.	1280
KLEA	Lovington, N.Mex.	630
KLEE	Ottumwa, Iowa	1480
KLEI	Kailua, Hawaii	1240
KLEM	LeMars, Iowa	1410
KLEN	Killeen, Tex.	1050
KLEO	Wichita, Kans.	1480
KLER	Orofino, Idaho	950
KLEX	Lexington, Mo.	1570
KLFD	Litchfield, Minn.	1410
KLFF	Mead, Wash.	1590
KLGA	Algona, Iowa	1600
KLGN	Logan, Utah	1390
KLGR	Redwood Falls, Minn.	1490
KLHS	Lordsburg, N.M.	950
KLIB	Liberal, Kans.	1470
KLIC	Monroe, La.	1230
KLID	Poplar Bluff, Mo.	1340
KLIF	Dallas, Tex.	1190
KLIK	Jefferson City, Mo.	950
KLIL	Estherville, Iowa	1340
KLIN	Lincoln, Nebr.	1400
KLIP	Fowler, Calif.	1220
KLIQ	Portland, Oreg.	1290
KLIR	Denver, Colo.	990
KLIX	Twin Falls, Idaho	1310
KLIZ	Brainerd, Minn.	1380
KLKC	Parsons, Kans.	1540
KLLA	Leesville, La.	1570
KLLL	Lubbock, Tex.	1460
KLME	Laramie, Wyo.	1490
KLMO	Longmont, Colo.	1050
KLMR	Lamar, Colo.	920
KLMS	Lincoln, Nebr.	1480
KLMX	Clayton, N.Mex.	1450
KLO	Ogden, Utah	1430
KLOA	Ridgecrest, Calif	1240
KLOE	Goodland, Kans.	730
KLOG	Kelso, Wash.	1490
KLOH	Pipestone, Minn.	1050
KLOK	San Jose, Calif.	1170
KLOO	Corvallis, Oreg.	1350
KLOS	Albuquerque, N.Mex.	1450
KLOU	Lake Charles, La.	1580
KLOW	Loveland, Colo.	1570
KLPC	Lompoc, Calif.	1330
KLPL	Lake Providence, La.	1050
KLPM	Minot, N.Dak.	1390
KLPR	Okla. City, Okla.	1140
KLPW	Union, Mo.	1220
KLRA	Little Rock, Ark.	1010
KLRS	Mountain Grove, Mo.	1360
KLTF	Little Falls, Minn.	960
KLTR	Blackwell, Okla.	1580
KLTZ	Glasgow, Mont.	1240
KLUB	Salt Lake City, Utah	570
KLUC	Las Vegas, Nev.	1050
KLUE	Longview, Tex.	1280
KLUK	Evanston, Wyo.	1240
KLUV	Haynesville, La.	1580
KLVL	Pasadena, Tex.	1480
KLVT	Levelland, Tex.	1230
KLWN	Lawrence, Kans.	1320
KLWT	Lebanon, Mo.	1230
KLYD	Bakersfield, Calif.	1350
KLYK	Spokane, Wash.	1230
KLYQ	Hamilton, Mont.	980
KLYR	Clarksville, Ark.	1360
KLZ	Denver, Colo.	560
KMA	Shenandoah, Iowa	960
KMAC	San Antonio, Tex.	630
KMAD	Madill, Okla.	1550
KMAE	McKinney, Tex.	1600
KMAK	Fresno, Calif.	1340
KMAM	Butler, Mo.	1530
KMAN	Manhattan, Kans.	1350
KMAQ	Maquoketa, Iowa	1320
KMAR	Winnsboro, La.	1570
KMBC	Kansas City, Mo.	980
KMBL	Junction, Tex.	1450
KMBO	Tucson, Ariz.	940
KMBY	Monterey, Calif.	1240
KMCD	Fairfield, Iowa	1570
KMCM	McMinnville, Oreg.	1260
KMCO	Conroe, Tex.	900
KMDO	Ft. Scott, Kans.	1600
KMED	Medford, Oreg.	1440
KMEN	San Bernardino, California	1290
KMEO	Omaha, Nebr.	660
KMET	Paradise, Calif.	930
KMHT	Marshall, Tex.	1450
KMIL	Cameron, Tex.	1330
KMIN	Grants, N.M.	980
KMIS	Portageville, Mo.	1050
KMJ	Fresno, Calif.	580
KMLB	Monroe, La.	1440
KMMJ	Grand Island, Nebr.	750
KMNS	Sioux City, Iowa	620
KMO	Tacoma, Wash.	1360
KMON	Great Falls, Mont.	560
KMOP	Tucson, Ariz.	1330
KMOR	Littleton, Colo.	1510
KMOX	St. Louis, Mo.	1120
KMPC	Los Angeles, Calif.	710
KMRC	Morgan City, La.	1430
KMRS	Morris, Minn.	1230
KMSL	Ukiah, Calif.	1250
KMUL	Muleshoe, Tex.	1380
KMUR	Murray, Utah	1230
KMUS	Muskogee, Okla.	1380
KMVI	Wailuku, Hawaii	550
KMYC	Marysville, Calif.	1410
KMYT	Clayton, Mo.	1320
KNAF	Fredericksburg, Tex.	910
KNAK	Salt Lake City, Utah	1280
KNAL	Victoria, Tex.	1410
KNBA	Vallejo, Calif.	1190
KNBC	San Francisco, Calif.	680
KNBE	Kanab, Utah	1240
KNBX	Kirkland, Wash.	1050
KNBY	Newport, Ark.	1280
KNCK	Concordia, Kans.	1390
KNCM	Moberly, Mo.	1230
KNCD	Garden City, Kans.	1050
KNCY	Nebraska City, Nebr.	1600
KNDC	Hettinger, N.Dak.	1490
KNDE	Aztec, N.Mex.	1340
KNDI	Honolulu, Hawaii	1270
KNDY	Marysville, Kans.	1570
KNEA	Jonesboro, Ark.	970
KNEB	Scottsbluff, Nebr.	960
KNED	McAlester, Okla.	1150
KNEL	Brady, Tex.	1490
KNEM	Nevada, Mo.	1240
KNET	Palestine, Tex.	1450
KNEW	Spokane, Wash.	790
KNEX	McPherson, Kans.	1540
KNEZ	Lompoc, Calif.	960
KNGS	Hanford, Calif.	620
KNIA	Knoxville, Iowa	1320
KNIM	Maryville, Mo.	1580
KNIN	Wichita Falls, Tex.	990
KNIT	Abilene, Tex.	1280
KNND	Cottage Grove, Oreg.	1400
KNOC	Natchitoches, La.	1450
KNOE	Monroe, La.	1390
KNOG	Nogales, Ariz.	1340
KNOK	Ft. Worth, Tex.	970
KNOP	N. Platte, Nebr.	1410
KNOR	Norman, Okla.	1400
KNOT	Prescott, Ariz.	1450
KNOW	Austin, Tex.	1490
KNOX	Grand Forks, N.Dak.	1310
KNPT	Newport, Ore.	1310
KNUI	Makawao, Hawaii	1310
KNUJ	New Ulm, Minn.	860
KNUZ	Houston, Tex.	1230
KNWC	Sioux Falls, S.D.	1270
KNWS	Waterloo, Iowa	1090
KNX	Los Angeles, Calif.	1070
KOA	Denver, Colo.	850
KOAC	Corvallis, Oreg.	550
KOAL	Price, Utah	1230
KOAM	Pittsburg, Kans.	860
KOB	Albuquerque, N.Mex.	770
KOBE	Las Cruces, N.Mex.	1450
KOBH	Hot Springs, S.Dak.	580
KOCA	Kilgore, Tex.	1240
KOCY	Oklahoma City, Okla.	1340
KODA	Houston, Tex.	1010
KODE	Joplin, Mo.	1230
KODI	Cody, Wyo.	1400
KODL	The Dalles, Oreg.	1440
KODY	North Platte, Nebr.	1240
KOEL	Oelwein, Iowa	950
KOFA	Yuma, Ariz.	1240
KOFE	Pullman, Wash.	1150
KOFI	Kalispell, Mont.	930
KOFO	Ottawa, Kans.	1220
KOFY	San Mateo, Calif.	1050
KOGA	Ogallala, Nebr.	930
KOGT	Orange, Tex.	1600
KOH	Reno, Nev.	630
KOHO	Honolulu, Hawaii	1170
KOHU	Hermiston, Oreg.	1570
KOIL	Omaha, Nebr.	1290
KOIN	Portland, Oreg.	970
KOJM	Havre, Mont.	610
KOKA	Shreveport, La.	1550
KOKE	Austin, Tex.	1370
KOKL	Okmulgee, Okla.	1240
KOKO	Warrensburg, Mo.	1450
KOKX	Keokuk, Iowa	1310
KOKY	Little Rock, Ark.	1440
KOL	Seattle, Wash.	1300
KOLD	Tucson, Ariz.	1450
KOLE	Port Arthur, Tex.	1340
KOLJ	Quanah, Tex.	1150
KOLO	Reno, Nev.	920
KOLR	Sterling, Colo.	1490
KOLS	Pryor, Okla.	1570
KOLT	Scottsbluff, Nebr.	1320
KOLY	Mobridge, S.Dak.	1300
KOMA	Okla. City, Okla.	1520

C.L.	Location	Kc.
KOME	Tulsa, Okla.	1300
KOMO	Seattle, Wash.	1000
KOMW	Omak, Wash.	680
KOMY	Watsonville, Calif.	1340
KONE	Reno, Nev.	1450
KONG	Visalia, Calif.	1400
KONI	Spanish Fork, Utah	1480
KONO	San Antonio, Tex.	860
KONP	Port Angeles, Wash.	1450
KOOK	Billings, Mont.	970
KOOL	Phoenix, Ariz.	960
KOOO	Omaha, Nebr.	1420
KOOS	Coos Bay, Oreg.	1230
KOPR	Butte, Mont.	550
KOPY	Alice, Tex.	1070
KOQT	Bellingham, Wash.	1550
KORA	Bryan, Tex.	1240
KORC	Mineral Wells, Tex.	1140
KORD	Pasco, Wash.	910
KORE	Eugene, Oreg.	1450
KORK	Las Vegas, Nev.	1340
KORN	Mitchell, S.Dak.	1490
KORT	Grangeville, Idaho	1230
KOSA	Odessa, Tex.	1230
KOSE	Osceola, Ark.	860
KOSI	Aurora, Colo.	1430
KOSY	Texarkana, Ark.	790
KOTA	Rapid City, S.Dak.	1380
KOTE	Fergus Falls, Minn.	1250
KOTN	Pine Bluff, Ark.	1490
KOTS	Deming, N.M.	1230
KOUR	Independence, Iowa	1220
KOVC	Valley City, N.Dak.	1490
KOVE	Lander, Wyo.	1330
KOVO	Provo, Utah	960
KOWB	Laramie, Wyo.	1290
KOWL	Bijou, Calif.	1490
KOWN	Escondido, Calif.	1450
KOXR	Oxnard, Calif.	910
KOY	Phoenix, Ariz.	550
KOYL	Odessa, Tex.	1310
KOYN	Billings, Mont.	910
KOZE	Lewiston, Idaho	1300
KOZI	Chelan, Wash.	1220
KOZY	Grand Rapids, Minn.	1490
KPAC	Port Arthur, Tex.	1250
KPAK	Minden, La.	1240
KPAL	Palm Springs, Calif.	1450
KPAM	Portland, Oreg.	1410
KPAN	Hereford, Tex.	860
KPAP	Redding, Calif.	1270
KPAS	Banning, Calif.	1490
KPAY	Chico, Calif.	1060
KPBA	Pine Bluff, Ark.	1590
KPBM	Carlsbad, N.Mex.	740
KPBR	El Paso, Tex.	1530
KPCA	Marked Tree, Ark.	1580
KPCN	Grand Prairie, Tex.	730
KPDN	Pampa, Tex.	1340
KPDQ	Portland, Oreg.	800
KPEG	Spokane, Wash.	1380
KPEL	Lafayette, La.	1420
KPEP	San Angelo, Tex.	1420
KPER	Gilroy, Calif.	1290
KPET	Lamesa, Tex.	690
KPGE	Page, Ariz.	1340
KPHO	Phoenix, Ariz.	910
KPIK	Colorado Sprgs., Colo.	1580
KPIN	Casa Grande, Ariz.	1260
KPIR	Eugene, Wash.	1500
KPLA	Plainview, Tex.	1050
KPLC	Lake Charles, La.	1470
KPLT	Paris, Tex.	1490
KPLW	Union, Mo.	1220
KPLY	Crescent City, Calif.	1240
KPMC	Bakersfield, Calif.	1560
KPNG	Port Neches, Tex.	1150
KPOC	Pocahontas, Ark.	1420
KPOD	Crescent City, Calif.	1310
KPOF	Denver, Colo.	910
KPOI	Honolulu, Hawaii	1380
KPOJ	Portland, Oreg.	1330
KPOK	Scottsdale, Ariz.	1440
KPOL	Los Angeles, Calif.	1540
KPON	Anderson, Calif.	1580
KPOR	Quincy, Wash.	1370
KPOW	Powell, Wyo.	1260
KPPC	Pasadena, Calif.	1240
KPQ	Wenatchee, Wash.	560
KPRB	Redmond, Oreg.	1240
KPRC	Houston, Tex.	950
KPRK	Livingston, Mont.	1340
KPRL	Paso Robles, Calif.	1230
KPRO	Riverside, Calif.	1440
KPRS	Kansas City, Mo.	1590
KPRT	Pratt, Kans.	1290
KPSO	Falfurrias, Tex.	1260
KPST	Preston, Idaho	1340
KPTL	Carson City, Nev.	1300
KPUG	Bellingham, Wash.	1170
KQAQ	Austin, Minn.	970
KQDF	Spokane, Wash.	1280
KQDI	Bismarck, N.D.	1350
KQDY	Minot, N.Dak.	1320
KQEN	Roseburg, Oreg.	1250
KQEO	Albuquerque, N.Mex.	920
KQIK	Lakeview, Oreg.	1230
KQMS	Redding, Calif.	1400
KQTE	Missoula, Mont.	1340
KQV	Pittsburgh, Pa.	1410
KQYX	Joplin, Mo.	1560
KRAC	Alamogordo, N.M.	1270
KRAD	E. Grand Forks, Minn.	1590
KRAE	Cheyenne, Wyo.	1480
KRAI	Craig, Colo.	550

C.L.	Location	Kc.
KRAK	Stockton, Calif.	1140
KRAL	Rawlins, Wyo.	1240
KRAM	Las Vegas, Nev.	920
KRAN	Morton, Tex.	1280
KRAY	Amarillo, Tex.	1360
KRBA	Lufkin, Tex.	1340
KRBC	Abilene, Tex.	1470
KRBI	St. Peter, Minn.	1310
KRBN	Red Lodge, Mont.	1450
KRCK	Ridgecrest, Calif.	1360
KRCO	Prineville, Oreg.	690
KRDG	Redding, Calif.	1230
KRDO	Colo. Springs, Colo.	1240
KRDP	Reedsport, Oreg.	1470
KRDU	Dinuba, Calif.	1240
KRE	Berkeley, Calif.	1400
KREB	Shreveport, La.	980
KRED	Eureka, Calif.	1480
KREH	Oakdale, La.	900
KREI	Farmington, Mo.	800
KREK	Sapulpa, Okla.	1550
KREM	Spokane, Wash.	970
KREO	Indio, Calif.	1400
KREW	Sunnyside, Wash.	1230
KREX	Grand Junc., Colo.	920
KRFO	Owatonna, Minn.	1390
KRFS	Superior, Nebr.	1600
KRGI	Grand Island, Neb.	1430
KRGV	Weslasco, Tex.	1290
KRHD	Duncan, Okla.	1350
KRIB	Mason City, Iowa	1490
KRIG	Odessa, Tex.	1410
KRIH	Rayville, La.	990
KRIO	McAllen, Tex.	910
KRIZ	Phoenix, Ariz.	1230
KRKC	King City, Calif.	1570
KRKD	Los Angeles, Calif.	1150
KRKO	Everett, Wash.	1380
KRKT	Albany, Ore.	990
KRLC	Lewiston, Idaho	1350
KRLD	Dallas, Tex.	1080
KRLN	Canon City, Colo.	1400
KRLW	Walnut Ridge, Ark.	1320
KRMD	Shreveport, La.	1340
KRMG	Tulsa, Okla.	740
KRML	Carmel, Calif.	1410
KRMO	Monett, Mo.	990
KRMS	Osage Beach, Mo.	1150
KRNO	San Bernardino, Calif.	1240
KRNR	Roseburg, Oreg.	1490
KRNS	Burns, Oreg.	1230
KRNT	Des Moines, Iowa	1350
KRNY	Kearney, Nebr.	1460
KROC	Rochester, Minn.	1340
KROD	El Paso, Tex.	600
KROE	Sheridan, Wyo.	930
KROF	Abbeville, La.	960
KROP	Brawley, Calif.	1300
KROS	Clinton, Iowa	1340
KROW	Dallas, Ore.	1460
KROX	Crookston, Minn.	1260
KROY	Sacramento, Calif.	1240
KRPL	Moscow, Idaho	1400
KRRR	Ruidoso, N.Mex.	1340
KRRV	Sherman, Tex.	910
KRSC	Othello, Wash.	1400
KRSO	Rapid City, S.Dak.	1340
KRSI	St. Louis Park, Minn.	950
KRSL	Russell, Kans.	990
KRSN	Los Alamos, N.Mex.	1490
KRSY	Roswell, N.Mex.	1230
KRTN	Raton, N.Mex.	1490
KRTR	Thermopolis, Wyo.	1490
KRUN	Ballinger, Tex.	1400
KRUS	Ruston, La.	1490
KRUX	Glendale, Ariz.	1360
KRVC	Ashland, Oreg.	1350
KRVN	Lexington, Nebr.	1010
KRXK	Rexburg, Idaho	1230
KRYS	Corpus Christi, Tex.	1360
KRZE	Farmington, N.M.	1280
KRZY	Albuquerque, N.M.	1580
KSAC	Manhattan, Kans.	580
KSAL	Salina, Kans.	1150
KSAM	Huntsville, Tex.	1490
KSAN	San Francisco, Calif.	1450
KSAY	San Francisco, Calif.	1010
KSBW	Salinas, Calif.	1380
KSCB	Liberal, Kans.	600
KSCJ	Sioux City, Iowa	1360
KSCO	Santa Cruz, Calif.	1080
KSD	St. Louis, Mo.	550
KSDN	Aberdeen, S.Dak.	930
KSDO	San Diego, Calif.	1130
KSDR	Waterton, S.Dak.	1480
KSEE	Santa Maria, Calif.	1480
KSEI	Pocatello, Idaho	930
KSEK	Pittsburg, Kans.	1340
KSEL	Lubbock, Tex.	950
KSEM	Moses Lake, Wash.	1470
KSEN	Shelby, Mont.	1150
KSEO	Durant, Okla.	750
KSET	El Paso, Tex.	1340
KSEW	Sitka, Alaska	1400
KSEY	Seymour, Tex.	1230
KSFA	Nacogdoches, Tex.	860
KSFE	Needles, Calif.	1340
KSFO	San Francisco, Calif.	560
KSGM	Chester, Ill.	980
KSHA	Medford, Ore.	860
KSIB	Creston, Iowa	1520
KSID	Sidney, Nebr.	1340
KSIG	Crowley, La.	1450
KSIL	Silver City, N.Mex.	1340
KSIM	Sikeston, Mo.	1400
KSIR	Wichita, Kans.	900
KSIS	Sedalia, Mo.	1050
KSIW	Woodward, Okla.	1450

C.L.	Location	Kc.
KSIX	Corpus Christi, Tex.	1230
KSJB	Jamestown, N.Dak.	600
KSKI	Sun Valley, Idaho	1340
KSKY	Dallas, Tex.	660
KSL	Salt Lake City, Utah	1160
KSLM	Salem, Oreg.	1390
KSLO	Opelousas, La.	1230
KSLV	Monte Vista, Colo.	1240
KSMA	Santa Maria, Calif.	1240
KSMN	Mason City, Iowa	1010
KSMO	Salem, Mo.	1340
KSNB	Santa Barbara, Calif.	1290
KSNN	Pocatello, Ida.	1290
KSNO	Aspen, Colo.	1260
KSNY	Snyder, Tex.	1450
KSO	Des Moines, Iowa	1460
KSOK	Arkansas City, Kans.	1280
KSON	San Diego, Calif.	1240
KSOO	Sioux Falls, S.Dak.	1140
KSOP	Salt Lake City, Utah	1370
KSOX	Raymondville, Tex.	1240
KSPA	Santa Paula, Calif.	1400
KSPI	Stillwater, Okla.	780
KSPL	Diboll, Tex.	1260
KSPT	Sandpoint, Idaho	1400
KSRA	Salmon, Idaho	960
KSRC	Socorro, N.Mex.	1290
KSRI	Salina, Kans.	910
KSRO	Santa Rosa, Calif.	1350
KSRV	Ontario, Oreg.	1380
KSSS	Colorado Springs, Colo.	740
KSST	Sulphur Springs, Tex.	1230
KSTA	Coleman, Tex.	1000
KSTB	Breckenridge, Tex.	1430
KSTH	St. Helen's, Oreg.	1600
KSTL	St. Louis, Mo.	690
KSTN	Stockton, Calif.	1420
KSTP	St. Paul, Minn.	1500
KSTR	Grand Junction, Colo.	620
KSTT	Davenport, Iowa	1170
KSTV	Stephenville, Tex.	1510
KSUB	Cedar City, Utah	590
KSUD	W. Memphis, Ark.	730
KSUE	Susanville, Calif.	1240
KSUM	Fairmont, Minn.	1370
KSUN	Bisbee, Ariz.	1230
KSVC	Richfield, Utah	980
KSVN	Ogden, Utah	730
KSVP	Artesia, N.Mex.	990
KSWA	Graham, Tex.	1330
KSWC	Tucson, Ariz.	1550
KSWI	Council Bluffs, Iowa	1560
KSWM	Aurora, Mo.	940
KSWO	Lawton, Okla.	1380
KSXX	Salt Lake City, Utah	630
KSYC	Yreka, Calif.	1490
KSYL	Alexandria, La.	970
KSYX	Santa Rosa, N.Mex.	1420
KTAC	Tacoma, Wash.	850
KTAE	Taylor, Tex.	1260
KTAN	Tucson, Ariz.	580
KTAR	Phoenix, Ariz.	620
KTAT	Frederick, Okla.	1570
KTBB	Tyler, Tex.	600
KTBC	Austin, Tex.	590
KTCB	Malden, Mo.	1470
KTCR	Minneapolis, Minn.	690
KTCS	Fort Smith, Ark.	1410
KTDO	Toledo, Oreg.	1230
KTEE	Idaho Falls, Idaho	900
KTEL	Walla Walla, Wash.	1490
KTEM	Temple, Tex.	1400
KTEO	San Angelo, Tex.	1340
KTER	Terrell, Tex.	1570
KTFI	Twin Falls, Idaho	1270
KTFO	Seminole, Tenn.	1250
KTFS	Texarkana, Tex.	1400
KTFY	Brownfield, Tex.	1300
KTHE	Thermopolis, Wyo.	1240
KTHO	Tahoe Valley, Calif.	590
KTHS	Berryville, Ark.	1480
KTHT	Houston, Tex.	790
KTIB	Thibodaux, La.	630
KTIL	Tillamook, Oreg.	1590
KTIM	San Rafael, Calif.	1510
KTIP	Porterville, Calif.	1450
KTIS	Minneapolis, Minn.	900
KTJS	Hobart, Okla.	1420
KTKN	Ketchikan, Alaska	930
KTKR	Taft, Calif.	1310
KTKT	Tucson, Ariz.	990
KTLD	Tullulah, La.	1360
KTLN	Denver, Colo.	1280
KTLO	Mtn. Home, Ark.	1490
KTLQ	Tahlequah, Okla.	1350
KTLU	Rusk, Tex.	1580
KTLW	Texas City, Tex.	920
KTMC	McAlester, Okla.	1400
KTMS	Santa Barbara, Calif.	1250
KTNC	Falls City, Nebr.	1230
KTNM	Tucumcari, N.Mex.	1400
KTNT	Tacoma, Wash.	1400
KTOC	Jonesboro, La.	920
KTOD	Sinton, Tex.	1590
KTOE	Mankato, Minn.	1420
KTOH	Lihue, Hawaii	1490
KTOK	Oklahoma City, Okla.	1000
KTON	Belton, Tex.	940
KTOO	Henderson, Nev.	1280
KTOP	Topeka, Kans.	1490
KTOW	Sand Spring, Okla.	1340
KTPA	Prescott, Ark.	1370
KTRB	Modesto, Calif.	860
KTRC	Santa Fe, N.Mex.	1400
KTRE	Lufkin, Tex.	1420
KTRF	Thief River Falls, Minn.	1230
KTRG	Honolulu, Hawaii	990

C.L.	Location	Kc.
KTRH	Houston, Tex.	740
KTRI	Sioux City, Iowa	1470
KTRM	Beaumont, Tex.	990
KTRN	Wichita Falls, Tex.	1290
KTRY	Bastrop, La.	730
KTSA	San Antonio, Tex.	550
KTSL	Burnett, Tex.	1340
KTSM	El Paso, Tex.	1380
KTTN	Trenton, Mo.	1600
KTTR	Rolla, Mo.	1490
KTTS	Springfield, Mo.	1400
KTTT	Columbus, Nebr.	1510
KTUC	Tucson, Ariz.	1400
KTUE	Tulia, Tex.	1260
KTUX	Pueblo, Colo.	1480
KTW	Seattle, Wash.	1250
KTWO	Casper, Wyo.	1470
KTXJ	Jasper, Tex.	1350
KTXO	Sherman, Tex.	1500
KTYM	Inglewood, Calif.	1460
KUAM	Agana, Guam	610
KUBA	Yuba City, Calif.	1600
KUBC	Montrose, Colo.	580
KUBE	Pendleton, Oreg.	1050
KUDE	Oceanside, Calif.	1320
KUDI	Great Falls, Mont.	1450
KUDL	Kansas City, Mo.	1380
KUDU	Ventura, Calif.	1590
KUEN	Wenatchee, Wash.	900
KUEQ	Phoenix, Ariz.	740
KUGN	Eugene, Oreg.	590
KUIK	Hillsboro, Oreg.	1360
KUJ	Walla Walla, Wash.	1420
KUKA	San Antonio, Tex.	1250
KUKI	Ukiah, Calif.	1400
KUKO	Post, Tex.	1370
KUKU	Willow Springs, Mo.	1330
KULA	Honolulu, Hawaii	690
KULE	Ephrata, Wash.	730
KULP	El Campo, Tex.	1390
KUMA	Pendleton, Oreg.	1290
KUND	Corpus Christi, Tex.	1400
KUOA	Siloam Springs, Ark.	1290
KUOM	Minneapolis, Minn.	770
KUPD	Tempe, Ariz.	1060
KUPI	Idaho Falls, Idaho	980
KURA	Moab, Utah	1450
KURL	Billings, Mont.	730
KURV	Edinburg, Tex.	710
KURY	Brookings, Oreg.	910
KUSD	Vermillion, S.Dak.	690
KUSH	Cushing, Okla.	1600
KUSN	St. Joseph, Mo.	1270
KUTA	Blanding, Utah	790
KUTI	Yakima, Wash.	980
KUTT	Fargo, N.Dak.	1550
KUTY	Palmdale, Calif.	1470
KUVR	Holdredge, Nebr.	1380
KUXL	Golden Valley, Minn.	1570
KUZN	W. Monroe, La.	1310
KUZZ	Bakersfield, Calif.	800
KVAN	Vancouver, Wash.	1480
KVCK	Wolf Point, Nebr.	1450
KVCL	Winnfield, La.	1270
KVCV	Redding, Calif.	600
KVEC	San Luis Obispo, Calif.	920
KVEE	Conway, Ark.	1330
KVEG	Las Vegas, Nev.	970
KVEL	Vernal, Utah	1250
KVEN	Ventura, Calif.	1450
KVET	Austin, Tex.	1300
KVFC	Cortez, Colo.	740
KVFD	Ft. Dodge, Iowa	1400
KVGB	Great Bend, Kans.	1590
KVI	Seattle, Wash.	570
KVIC	Cottonwood, Ariz.	1600
KVIL	Highland Park, Tex.	1150
KVIM	New Iberia, La.	1360
KVIN	Vinita, Okla.	1470
KVIP	Redding, Calif.	540
KVKM	Monahans, Tex.	1330
KVLB	Cleveland, Tex.	1410
KVLC	Little Rock, Ark.	1050
KVLF	Alpine, Tex.	1240
KVLG	LaGrange, Tex.	1570
KVLH	Pauls Valley, Okla.	1470
KVLL	Livingston, Tex.	1220
KVMA	Magnolia, Ark.	630
KVMC	Colorado City, Tex.	1320
KVML	Sonora, Calif.	1450
KVNA	Flagstaff, Ariz.	690
KVNC	Winslow, Ariz.	1010
KVNI	Coeur d'Alene, Idaho	1240
KVNU	Logan, Utah	610
KVOB	Bastrop, La.	1340
KVOC	Casper, Wyo.	1230
KVOD	Albuquerque, N. Mex.	730
KVOE	Emporia, Kans.	1400
KVOG	Ogden, Utah	1490
KVOL	Lafayette, La.	1330
KVOM	Morrilton, Ark.	800
KVON	Napa, Calif.	1440
KVOO	Tulsa, Okla.	1170
KVOP	Plainview, Tex.	1400
KVOR	Colo. Springs, Colo.	1300
KVOU	Uvalde, Tex.	1400
KVOW	Riverton, Wyo.	1450
KVOX	Moorhead, Minn.	1280
KVOY	Yuma, Ariz.	1400
KVOZ	Laredo, Tex.	1490
KVPH	Canyon, Tex.	1550
KVPI	Ville Platte, La.	1050
KVRC	Arkadelphia, Ark.	1240
KVRD	Cottonwood, Ariz.	1240
KVRE	Santa Rosa, Calif.	1460
KVRH	Salida, Colo.	1340
KVRS	Rock Springs, Wyo.	1360
KVSA	McGehee, Ark.	1220

C.L.	Location	Kc.
KVSF	Santa Fe, N.Mex.	1260
KVSH	Valentine, Nebr.	940
KVSO	Ardmore, Okla.	1240
KVWC	Vernon, Tex.	1490
KVWD	Pearsall, Tex.	1280
KVWM	Show Low, Ariz.	1050
KVWO	Cheyenne, Wyo.	1370
KWAC	Bakersfield, Calif.	1490
KWAD	Wadena, Minn.	920
KWAK	Stuttgart, Ark.	1240
KWAL	Wallace, Idaho	620
KWAM	Memphis, Tenn.	990
KWAT	Watertown, S.Dak.	950
KWBA	Baytown, Tex.	1360
KWBB	Wichita, Kans.	1410
KWBC	Navasota, Tex.	1550
KWBE	Beatrice, Nebr.	1450
KWBG	Boone, Iowa	1590
KWBW	Hutchinson, Kans.	1450
KWCB	Searcy, Ark.	1300
KWCL	Oak Grove, La.	1280
KWCO	Chickasha, Okla.	1560
KWEB	Rochester, Minn.	1270
KWED	Seguin, Tex.	1580
KWEI	Weiser, Idaho	1260
KWEL	Midland, Tex.	1600
KWEW	Hobbs, N.Mex.	1480
KWFR	San Angelo, Tex.	1260
KWFT	Wichita Falls, Tex.	620
KWG	Stockton, Calif.	1230
KWHI	Brenham, Tex.	1280
KWHK	Hutchinson, Kans.	1260
KWHN	Fort Smith, Ark.	1320
KWHO	Salt Lake City, Utah	860
KWHW	Altus, Okla.	1450
KWIC	Salt Lake City, Utah	1570
KWIK	Pocatello, Idaho	1240
KWIL	Albany, Oreg.	790
KWIN	Ashland, Oreg.	580
KWIP	Merced, Calif.	1580
KWIQ	Moses Lake, Wash.	1260
KWIV	Douglas, Wyo.	1050
KWIZ	Santa Ana, Calif.	1480
KWJJ	Portland, Oreg.	1080
KWK	St. Louis, Mo.	1380
KWKC	Abilene, Tex.	1340
KWKH	Shreveport, La.	1130
KWKW	Pasadena, Calif.	1300
KWKY	Des Moines, Iowa	1150
KWLA	Many, La.	1530
KWLC	Decorah, Iowa	1240
KWLD	Liberty, Tex.	1050
KWLM	Willmar, Minn.	1340
KWLW	Nampa, Idaho	1340
KWMT	Ft. Dodge, Iowa	540
KWNA	Winnemucca, Nev.	1400
KWNO	Winona, Minn.	1230
KWNT	Davenport, Iowa	1580
KWOA	Worthington, Minn.	730
KWOC	Poplar Bluff, Mo.	930
KWOE	Clinton, Okla.	1320
KWON	Bartlesville, Okla.	1400
KWOR	Worland, Wyo.	1340
KWOS	Jefferson City, Mo.	1240
KWOW	Pomona, Calif.	1600
KWPC	Muscatine, Iowa	860
KWPM	West Plains, Mo.	1450
KWPR	Claremore, Okla.	1270
KWRA	Idaho Falls, Idaho	1400
KWRD	Henderson, Tex.	1470
KWRE	Warrenton, Mo.	730
KWRF	Warren, Ark.	860
KWRO	Coquille, Oreg.	630
KWRT	Boonville, Mo.	1370
KWRV	McCook, Nebr.	1360
KWRW	Guthrie, Okla.	1490
KWSC	Pullman, Wash.	1250
KWSD	Mt. Shasta, Calif.	620
KWSH	Wewoka-Seminole, Oklahoma	1260
KWSK	Pratt, Kans.	1570
KWSL	Grand Junction, Colo.	1340
KWSO	Wasco, Calif.	1050
KWTC	Barstow, Calif.	1230
KWTO	Springfield, Mo.	560
KWTX	Waco, Tex.	1230
KWVN	Concord, Calif.	1480
KWVR	Enterprise, Oreg.	1340
KWVY	Waverly, Iowa	1470
KWWL	Waterloo, Iowa	1330
KWYK	Farmington, N.Mex.	960
KWYN	Wynne, Ark.	1400
KWYO	Sheridan, Wyo.	1410
KWYR	Winner, S.Dak.	1260
KWYZ	Everett, Wash.	1230
KXA	Seattle, Wash.	770
KXAR	Hope, Ark.	1490
KXEL	Waterloo, Iowa	1540
KXEN	St. Louis, Mo.	1010
KXEO	Mexico, Mo.	1340
KXEW	Tucson, Ariz.	1600
KXEX	Fresno, Calif.	1550
KXGI	Ft. Madison, Iowa	1360
KXGN	Glendive, Mont.	1400
KXIC	Iowa City, Iowa	800
KXIT	Dalhart, Tex.	1410
KXIV	Phoenix, Ariz.	1400
KXJK	Forrest City, Ark.	950
KXKW	Lafayette, La.	1520
KXL	Portland, Oreg.	750
KXLE	Ellensburg, Wash.	1240
KXLF	Butte, Mont.	1370
KXLJ	Helena, Mont.	1240
KXLL	Missoula, Mont.	1450
KXLO	Lewiston, Mont.	1230
KXLR	Little Rock, Ark.	1150
KXLW	Clayton, Mo.	1320
KXLY	Spokane, Wash.	920

C.L.	Location	Kc.
KXO	El Centro, Calif.	1230
KXOA	Sacramento, Calif.	1470
KXOK	St. Louis, Mo.	630
KXOL	Ft. Worth, Tex.	1360
KXOX	Sweetwater, Tex.	1240
KXRA	Alexandria, Minn.	1490
KXRJ	Russellville, Ark.	1490
KXRO	Aberdeen, Wash.	1320
KXRX	San Jose, Calif.	1500
KXXL	Bozeman, Mont.	1450
KXXX	Colby, Kans.	790
KXYZ	Houston, Tex.	1320
KYA	San Francisco, Calif.	1260
KYCA	Prescott, Ariz.	1490
KYCN	Wheatland, Wyo.	1340
KYES	Roseburg, Oreg.	950
KYJC	Medford, Oreg.	1230
KYME	Boise, Idaho	740
KYND	Tempe, Ariz.	1580
KYNG	Coos Bay, Oreg.	1420
KYNO	Fresno, Calif.	1300
KYNT	Yankton, S.Dak.	1450
KYOK	Houston, Tex.	1590
KYOR	Blythe, Calif.	1450
KYOS	Merced, Calif.	1480
KYOU	Greeley, Colo.	1450
KYRO	Potosi, Mo.	1280
KYSM	Mankato, Minn.	1230
KYSN	Colorado Sprgs., Colo.	1460
KYSS	Missoula, Mont.	910
KYUM	Yuma, Ariz.	560
KYVA	Gallup, N.Mex.	1230
KYW	Cleveland, Ohio	1100
KZEE	Weatherford, Tex.	1220
KZEY	Tyler, Tex.	690
KZIP	Amarillo, Tex.	1310
KZIX	Fort Collins, Colo.	600
KZNG	Hot Springs, Ark.	1470
KZOK	Prescott, Ariz.	1340
KZOL	Farwell, Tex.	1570
KZON	Tolleson, Ariz.	1190
KZOO	Honolulu, Hawaii	1210
KZOT	Marianna, Ark.	1460
KZOW	Globe, Ariz.	1240
KZUN	Opportunity, Wash.	630
KZZN	Littlefield, Tex.	1490
WAAA	Winston-Salem, N.C.	980
WAAB	Worcester, Mass.	1440
WAAF	Chicago, Ill.	950
WAAG	Adel, Ga.	1470
WAAK	Dallas, N.C.	960
WAAP	Peoria, Ill.	1350
WAAT	Trenton, N.J.	1300
WAAX	Gadsden, Ala.	570
WAAY	Huntsville, Ala.	1550
WABA	Aguadilla, P.Rico	850
WABB	Mobile, Ala.	1480
WABC	New York, N.Y.	770
WABF	Fairhope, Ala.	1220
WABG	Greenwood, Miss.	960
WABH	Deerfield, Va.	1150
WABI	Bangor, Maine	910
WABJ	Adrian, Mich.	1490
WABL	Amite, La.	1570
WABO	Waynesboro, Miss.	990
WABQ	Cleveland, Ohio	1540
WABR	Winter Park, Fla.	1440
WABT	Tuskegee, Ala.	580
WABV	Abbeville, S.C.	1590
WABW	Annapolis, Md.	810
WABY	Albany, N.Y.	1400
WABZ	Albemarle, N.C.	1010
WACA	Camden, S.C.	1590
WACB	Kittanning, Pa.	1380
WACE	Chicopee, Mass.	730
WACK	Newark, N.Y.	1420
WACL	Waycross, Ga.	570
WACO	Waco, Tex.	1460
WACR	Columbus, Miss.	1050
WACT	Tuscaloosa, Ala.	1420
WADA	Shelby, N.C.	1390
WADC	Akron, Ohio	1350
WADE	Wadesboro, N.C.	1210
WADK	Newport, R.I.	1540
WADO	New York, N.Y.	1280
WADP	Kane, Pa.	960
WADS	Ansonia, Conn.	690
WAEB	Allentown, Pa.	790
WAEL	Mayaguez, P.Rico	600
WAFC	Staunton, Va.	900
WAFS	Amsterdam, N.Y.	1570
WAGE	Leesburg, Va.	1290
WAGF	Dothan, Ala.	1320
WAGG	Franklin, Tenn.	950
WAGM	Presque Isle, Maine	950
WAGN	Menominee, Mich.	1340
WAGR	Lumberton, N.C.	580
WAGS	Bishopville, S.C.	1380
WAGY	Forest City, N.C.	1320
WAIK	Galesburg, Ill.	1590
WAIL	Baton Rouge, La.	1460
WAIM	Anderson, S.C.	1230
WAIN	Columbia, Ky.	1270
WAIR	Winston-Salem, N.C.	1340
WAIT	Chicago, Ill.	820
WAJF	Decatur, Ala.	1490
WAJR	Morgantown, W.Va.	1440
WAKE	Atlanta, Ga.	1340
WAKI	McMinnville, Tenn.	1230
WAKN	Aiken, S.C.	990
WAKO	Lawrenceville, Ill.	910
WAKR	Akron, Ohio	1590
WAKU	Latrobe, Pa.	1570
WAKY	Louisville, Ky.	790
WALA	Mobile, Ala.	1410
WALD	Walterboro, S.C.	1220
WALE	Fall River, Mass.	1400
WALG	Albany, Ga.	1590

C.L.	Location	Kc.
WALK	Patchogue, N.Y.	1370
WALL	Middletown, N.Y.	1340
WALM	Albion, Mich.	1260
WALO	Humacao, P.R.	1240
WALT	Tampa, Fla.	1110
WALY	Herkimer, N.Y.	1420
WAMD	Aberdeen, Md.	970
WAME	Miami, Fla.	1260
WAMI	Opp, Ala.	860
WAML	Laurel, Miss.	1340
WAMM	Flint, Mich.	1420
WAMO	Homestead, Pa.	860
WAMR	Venice, Fla.	1320
WAMS	Wilmington, Del.	1380
WAMW	Washington, Ind.	1580
WAMY	Amory, Miss.	1580
WANA	Anniston, Ala.	1490
WANB	Waynesburg, Pa.	1580
WAND	Canton, Ohio	900
WANE	Ft. Wayne, Ind.	1450
WANN	Annapolis, Md.	1190
WANS	Anderson, S.C.	1280
WANT	Richmond, Va.	990
WANY	Albany, Ky.	1390
WAOK	Atlanta, Ga.	1380
WAOV	Vincennes, Ind.	1450
WAPA	San Juan, P.R.	680
WAPC	Riverhead, N.Y.	1570
WAPE	Jacksonville, Fla.	690
WAPF	McComb, Miss.	980
WAPG	Arcadia, Fla.	1480
WAPI	Birmingham, Ala.	1070
WAPL	Appleton, Wis.	1570
WAPO	Chattanooga, Tenn.	1150
WAPX	Montgomery, Ala.	1600
WAQE	Towson, Md.	1570
WAQI	Ashtabula, Ohio	1600
WARA	Attleboro, Mass.	1320
WARB	Covington, La.	730
WARD	Johnstown, Pa.	1490
WARE	Ware, Mass.	1250
WARF	Jasper, Ala.	1240
WARI	Abbeville, Ala.	1480
WARK	Hagerstown, Md.	1490
WARL	Arlington, Va.	780
WARM	Scranton, Pa.	590
WARN	Ft. Pierce, Fla.	1330
WARO	Canonsburg, Pa.	540
WARU	Peru, Ind.	1600
WASA	Havre de Grace, Md.	1330
WASK	Lafayette, Ind.	1450
WATA	Boone, N.C.	1450
WATC	Gaylord, Mich.	900
WATE	Knoxville, Tenn.	620
WATH	Athens, Ohio	970
WATK	Antigo, Wis.	900
WATM	Atmore, Ala.	1590
WATN	Watertown, N.Y.	1240
WATO	Oak Ridge, Tenn.	1290
WATP	Marion, S.C.	1430
WATR	Waterbury, Conn.	1320
WATS	Sayre, Pa.	960
WATT	Cadillac, Mich.	1240
WATV	Birmingham, Ala.	900
WATW	Ashland, Wis.	1400
WATZ	Alpena, Mich.	1450
WAUB	Auburn, N.Y.	1590
WAUC	Wauchula, Fla.	1310
WAUD	Auburn, Ala.	1230
WAUG	Augusta, Ga.	1050
WAUX	Waukesha, Wis.	1510
WAVE	Louisville, Ky.	970
WAVI	Dayton, Ohio	1210
WAVL	Apollo, Pa.	910
WAVN	Stillwater, Minn.	1220
WAVO	Avondale Estates, Ga.	1420
WAVP	Avon Park, Fla.	1390
WAVU	Albertville, Ala.	630
WAVY	Portsmouth, Va.	1350
WAVZ	New Haven, Conn.	1300
WAWA	West Allis, Wis.	1590
WAWK	Kendallville, Ind.	1570
WAWZ	Zarephath, N.J.	1380
WAXE	Vero Beach, Fla.	1370
WAXU	Georgetown, Ky.	1580
WAXX	Chippewa Falls, Wis.	1150
WAYB	Waynesboro, Va.	1490
WAYE	Dundalk, Md.	860
WAYN	Rockingham, N.C.	900
WAYR	Orange Park, Fla.	550
WAYS	Charlotte, N.C.	610
WAYX	Waycross, Ga.	1230
WAYZ	Waynesboro, Pa.	1380
WAZA	Bainbridge, Ga.	1360
WAZE	Clearwater, Fla.	860
WAZF	Yazoo City, Miss.	1230
WAZL	Hazelton, Pa.	1490
WAZS	Summerville, S.C.	780
WAZY	Lafayette, Ind.	1410
WBAA	West Lafayette, Ind.	920
WBAB	Babylon, N.Y.	1440
WBAC	Cleveland, Tenn.	1340
WBAG	Burlington, N.C.	1150
WBAL	Baltimore, Md.	1090
WBAM	Montgomery, Ala.	740
WBAP	Ft. Worth, Tex.	570, 820
WBAR	Bartow, Fla.	1460
WBAT	Marion, Ind.	1400
WBAW	Barnwell, S.C.	740
WBAX	Wilkes-Barre, Pa.	1240
WBAY	Green Bay, Wis.	1360
WBAZ	Kingston, N.Y.	1550
WBBA	Pittsfield, Ill.	1580
WBBB	Burlington, N.C.	920
WBBF	Rochester, N.Y.	950
WBBI	Abingdon, Va.	1230
WBBK	Blakely, Ga.	1260
WBBL	Richmond, Va.	1480

C.L.	Location	Kc.
WBBM	Chicago, Ill.	780
WBBO	Forest City, N.C.	780
WBBQ	Augusta, Ga.	1340
WBBR	E. St. Louis, Ill.	1490
WBBT	Lyons, Ga.	1340
WBBW	Youngstown, Ohio	1240
WBBX	Portsmouth, N.H.	1380
WBBY	Wood River, Ill.	590
WBBZ	Ponca City, Okla.	1230
WBCA	Bay Minette, Ala.	1150
WBCB	Levittown, Pa.	1490
WBCH	Hastings, Mich.	1220
WBCI	Williamsburg, Va.	740
WBCK	Battle Creek, Mich.	930
WBCM	Bay City, Mich.	1440
WBCR	Christiansburg, Va.	1260
WBCU	Union, S.C.	1460
WBEC	Pittsfield, Mass.	1420
WBEE	Harvey, Ill.	1570
WBEJ	Elizabethton, Tenn.	1240
WBEL	South Beloit, Ill.	1380
WBEN	Buffalo, N.Y.	930
WBER	Moncks Corner, N.C.	950
WBET	Brockton, Mass.	1460
WBEU	Beaufort, S.C.	960
WBEV	Beaver Dam, Wis.	1430
WBEX	Chillicothe, Ohio	1490
WBFC	Fremont, Mich.	1490
WBFD	Bedford, Pa.	1310
WBGC	Chipley, Fla.	1240
WBGN	Bowling Green, Ky.	1340
WBGR	Jesup, Ga.	1370
WBHB	Fitzgerald, Ga.	1240
WBHC	Hampton, S.C.	1270
WBHF	Cartersville, Ga.	1450
WBHM	Birmingham, Ala.	1550
WBHP	Huntsville, Ala.	1230
WBIA	Augusta, Ga.	1230
WBIC	Islip, N.Y.	540
WBIE	Marietta, Ga.	1050
WBIG	Greensboro, N.C.	1470
WBIL	Leesburg, Fla.	1410
WBIP	Booneville, Miss.	1400
WBIR	Knoxville, Tenn.	1240
WBIS	Bristol, Conn.	1440
WBIW	Bedford, Ind.	1340
WBIZ	Eau Claire, Wis.	1400
WBKH	Hattiesburg, Miss.	950
WBKN	Newton, Miss.	1410
WBKV	West Bend, Wis.	1470
WBLA	Elizabethtown, N.C.	1440
WBLE	Batesville, Miss.	1290
WBLF	Bellefonte, Pa.	1330
WBLG	Lexington, Ky.	1300
WBLJ	Dalton, Ga.	1230
WBLO	Evergreen, Ala.	1470
WBLR	Batesburg, S.C.	1430
WBLT	Bedford, Va.	1350
WBLU	Salem, Va.	1480
WBLY	Springfield, Ohio	1600
WBMA	Beaufort, N.C.	1400
WBMC	McMinnville, Tenn.	960
WBMD	Baltimore, Md.	750
WBMK	West Point, Ga.	1310
WBML	Macon, Ga.	1240
WBMT	Black Mountain, N.C.	1350
WBNB	Charlotte Amalie, Virgin Islands	1000
WBNC	Conway, N.H.	1050
WBNL	Boonville, Ind.	1540
WBNR	Beacon, N.Y.	1260
WBNS	Columbus, Ohio	1460
WBNT	Oneida, Tenn.	1310
WBNX	New York, N.Y.	1380
WBOB	Galax, Va.	1360
WBOC	Salisbury, Md.	960
WBOF	Virginia Beach, Va.	1550
WBOK	New Orleans, La.	800
WBOP	Pensacola, Fla.	980
WBOS	Brookline, Mass.	1600
WBOW	Terre Haute, Ind.	1230
WBOY	Clarksburg, W.Va.	1400
WBPZ	Lock Haven, Pa.	1230
WBRB	Mt. Clemens, Mich.	1430
WBRC	Birmingham, Ala.	960
WBRD	Bradenton, Fla.	1420
WBRE	Wilkes-Barre, Pa.	1340
WBRG	Lynchburg, Va.	1050
WBRK	Pittsfield, Mass.	1340
WBRL	Berlin, N.H.	1400
WBRM	Marion, N.C.	1250
WBRN	Big Rapids, Mich.	1460
WBRO	Waynesboro, Ga.	1310
WBRT	Bardstown, Ky.	1320
WBRV	Boonville, N.Y.	900
WBRW	Brewster, N.Y.	1510
WBRX	Berwick, Pa.	1280
WBRY	Waterbury, Conn.	1590
WBSA	Boaz, Ala.	1300
WBSC	Bennettsville, S.C.	1550
WBSG	Blackshear, Ga.	1350
WBSM	New Bedford, Mass.	1420
WBT	Charlotte, N.C.	1110
WBTA	Batavia, N.Y.	1490
WBTH	Williamson, W.Va.	1400
WBTM	Danville, Va.	1330
WBTN	Bennington, Vt.	1370
WBTO	Linton, Ind.	1600
WBTS	Bridgeport, Ala.	1480
WBUC	Buckhannon, W.Va.	1460
WBUD	Trenton, N.J.	1260
WBUT	Butler, Pa.	1050
WBUX	Doylestown, Pa.	1570
WBUY	Lexington, N.C.	1440
WBUZ	Fredonia, N.Y.	1570

C.L.	Location	Kc.
WBVA	Waynesboro, Va.	970
WBVL	Barbourville, Ky.	950
WBVM	Utica, N.Y.	1550
WBVP	Beaver Falls, Pa.	1230
WBYE	Calera, Ala.	1370
WBYG	Savannah, Ga.	1450
WBYS	Canton, Ill.	1560
WBZ	Boston, Mass.	1030
WBZA	Springfield, Mass.	1030
WBZI	Brazil, Ind.	1380
WBZY	Torrington, Conn.	990
WCAL	Northfield, Minn.	770
WCAM	Camden, N.J.	1310
WCAO	Baltimore, Md.	600
WCAP	Lowell, Mass.	980
WCAR	Detroit, Mich.	1130
WCAT	Orange, Mass.	1390
WCAU	Philadelphia, Pa.	1210
WCAW	Charleston, W.Va.	680
WCAX	Burlington, Vt.	620
WCAY	Cayce, S.C.	620
WCAZ	Carthage, Ill.	990
WCBA	Corning, N.Y.	1350
WCBG	Chambersburg, Pa.	1590
WCBI	Columbus, Miss.	550
WCBL	Benton, Ky.	1290
WCBM	Baltimore, Md.	680
WCBS	New York, N.Y.	880
WCBT	Roanoke Rapids, N.C.	1230
WCBY	Cheboygan, Mich.	1240
WCCC	Hartford, Conn.	1290
WCCM	Lawrence, Mass.	800
WCCN	Neillsville, Wis.	1370
WCCO	Minneapolis, Minn.	830
WCCW	Traverse City, Mich.	1310
WCDJ	Edenton, N.C.	1260
WCDL	Carbondale, Pa.	1440
WCDS	Glasgow, Ky.	1440
WCDT	Winchester, Tenn.	1340
WCEC	Rocky Mount, N.C.	810
WCED	DuBois, Pa.	1420
WCEF	Parksburg, W.Va.	1050
WCEH	Hawkinsville, Ga.	610
WCEM	Cambridge, Md.	1240
WCEN	Mt. Pleasant, Mich.	1150
WCER	Charlotte, Mich.	1390
WCFL	Chicago, Ill.	1000
WCFR	Springfield, Vt.	1480
WCFV	Clifton Forge, Va.	1230
WCGA	Calhoun, Ga.	900
WCGC	Belmont, N.C.	1270
WCGO	Chicago Hghts., Ill.	1600
WCGR	Canandaigua, N.Y.	1550
WCHA	Chambersburg, Pa.	800
WCHB	Inkster, Mich.	1440
WCHI	Chillicothe, Ohio	1350
WCHJ	Brookhaven, Miss.	1470
WCHK	Canton, Ga.	1290
WCHL	Chapel Hill, N.C.	1360
WCHN	Norwich, N.Y.	970
WCHO	Washington Court House, Ohio	1250
WCHS	Charleston, W.Va.	580
WCHV	Charlottesville, Va.	1260
WCIL	Carbondale, Ill.	1020
WCIN	Cincinnati, Ohio	1480
WCJU	Columbia, Miss.	1450
WCKB	Dunn, N.C.	780
WCKI	Greer, S.C.	1300
WCKM	Winnsboro, S.C.	1250
WCKR	Miami, Fla.	610
WCKY	Cincinnati, Ohio	1530
WCLA	Claxton, Ga.	1470
WCLB	Camilla, Ga.	1220
WCLC	Jamestown, Tenn.	1260
WCLD	Cleveland, Miss.	1490
WCLE	Cleveland, Tenn.	1570
WCLG	Morgantown, W.Va.	1300
WCLI	Corning, N.Y.	1450
WCLO	Janesville, Wis.	1230
WCLS	Columbus, Ga.	1580
WCLT	Newark, Ohio	1430
WCLW	Mansfield, Ohio	1570
WCMA	Corinth, Miss.	1230
WCMB	Harrisburg, Pa.	1460
WCMC	Wildwood, N.J.	1230
WCME	Brunswick, Maine	900
WCMI	Ashland, Ky.	1340
WCMN	Arecibo, P.R.	1280
WCMP	Pine City, Minn.	1350
WCMR	Elkhart, Ind.	1270
WCMS	Norfolk, Va.	1050
WCMT	Martin, Tenn.	1410
WCMY	Ottawa, Ill.	1430
WCNB	Connersville, Ind.	1580
WCNC	Elizabeth City, N.C.	1240
WCNF	Weldon, N.C.	1400
WCNH	Quincy, Fla.	1230
WCNL	Newport, N. H.	1010
WCNR	Bloomsburg, Pa.	930
WCNT	Centralia, Ill.	1210
WCNU	Crestview, Fla.	1010
WCNX	Middletown, Conn.	1150
WCOA	Pensacola, Fla.	1370
WCOC	Meridian, Miss.	910
WCOG	Greensboro, N.C.	1320
WCOH	Newnan, Ga.	1400
WCOJ	Coatesville, Pa.	1420
WCOL	Columbus, Ohio	1230
WCON	Cornelia, Ga.	1450
WCOP	Boston, Mass.	1150
WCOR	Lebanon, Tenn.	900
WCOS	Columbia, S.C.	1400
WCOU	Lewiston, Maine	1240
WCOV	Montgomery, Ala.	1170
WCOW	Sparta, Wis.	1290

C.L.	Location	Kc.
WCOY	Columbia, Pa.	1580
WCPA	Clearfield, Pa.	900
WCPC	Houston, Miss.	1320
WCPH	Etowah, Tenn.	1220
WCPM	Cumberland, Ky.	1280
WCPO	Cincinnati, Ohio	1230
WCPS	Tarboro, N.C.	760
WCQS	Alma, Ga.	1400
WCRA	Effingham, Ill.	1090
WCRB	Waltham, Mass.	1330
WCRE	Cheraw, S.C.	1420
WCRI	Scottsboro, Ala.	1050
WCRK	Morristown, Tenn.	1150
WCRL	Oneonta, Ala.	1570
WCRM	Clare, Mich.	990
WCRO	Johnstown, Pa.	1230
WCRR	Corinth, Miss.	1330
WCRS	Greenwood, S.C.	1450
WCRT	Birmingham, Ala.	1260
WCRV	Washington, N.J.	1580
WCRW	Chicago, Ill.	1240
WCRY	Macon, Ga.	900
WCSC	Charleston, S.C.	1390
WCSH	Portland, Maine	970
WCSI	Columbus, Ind.	1010
WCSM	Celina, Ohio	1350
WCSR	Hillsdale, Mich.	1340
WCSS	Amsterdam, N.Y.	1490
WCST	Berkeley Springs, W.Va.	1010
WCTA	Andalusia, Ala.	920
WCTC	New Brunswick, N.J.	1450
WCTT	Corbin, Ky.	680
WCTW	New Castle, Ind.	1550
WCUB	Manitowoc, Wis.	980
WCUE	Cuyahoga Falls, Ohio	1150
WCUM	Cumberland, Md.	1230
WCVA	Culpeper, Va.	1490
WCVI	Connellsville, Pa.	1340
WCVP	Murphy, N.C.	600
WCVQ	Kodiak, Alaska	960
WCVS	Springfield, Ill.	1450
WCWC	Ripon, Wis.	1600
WCYB	Bristol, Va.	690
WCYN	Cynthiana, Ky.	1400
WDAD	Indiana, Pa.	1450
WDAE	Tampa, Fla.	1250
WDAF	Kansas City, Mo.	610
WDAK	Columbus, Ga.	540
WDAL	Meridian, Miss.	1330
WDAN	Danville, Ill.	1490
WDAR	Darlington, S.C.	1350
WDAS	Philadelphia, Pa.	1480
WDAX	McRae, Ga.	1410
WDAY	Fargo, N. Dak.	970
WDBC	Escanaba, Mich.	680
WDBF	Delray Beach, Fla.	1420
WDBJ	Roanoke, Va.	960
WDBL	Springfield, Tenn.	1590
WDBM	Statesville, N.C.	550
WDBO	Orlando, Fla.	580
WDBQ	Dubuque, Iowa	1490
WDCF	Dade City, Fla.	1350
WDCR	Hanover, N.H.	1340
WDDT	Greenville, Miss.	900
WDDW	Halfway, Md.	1410
WDDY	Gloucester, Va.	1420
WDEA	Ellsworth, Me.	1350
WDEB	Pensacola, Fla.	610
WDEC	Americus, Ga.	1290
WDEE	Hamden, Conn.	1220
WDEF	Chattanooga, Tenn.	1370
WDEH	Sweetwater, Tenn.	800
WDEL	Wilmington, Del.	1150
WDEV	Waterbury, Vt.	550
WDEW	Westfield, Mass.	1570
WDGY	Minneapolis, Minn.	1130
WDIA	Memphis, Tenn.	1070
WDIG	Dothan, Ala.	1450
WDIX	Orangeburg, S.C.	1150
WDJS	Mt. Olive, N.C.	1430
WDKD	Kingstree, S.C.	1310
WDKN	Dickson, Tenn.	1260
WDLA	Walton, N.Y.	1270
WDLB	Marshfield, Wis.	1450
WDLC	Port Jervis, N.Y.	1490
WDLR	Delaware, Ohio	1550
WDLM	E. Moline, Ill.	960
WDLP	Panama City, Fla.	590
WDLT	Indianola, Miss.	1380
WDMC	Otsego, Mich.	980
WDMF	Buford, Ga.	1460
WDMG	Douglas, Ga.	860
WDMJ	Marquette, Mich.	1320
WDMS	Lynchburg, Va.	1320
WDMV	Pocomoke City, Md.	540
WDNC	Durham, N.C.	620
WDNE	Elkins, W.Va.	1240
WDNG	Anniston, Ala.	1450
WDNT	Dayton, Tenn.	1280
WDOB	Canton, Miss.	1370
WDOC	Prestonsburg, Ky.	1310
WDOD	Chattanooga, Tenn.	1310
WDOE	Dunkirk, N.Y.	1410
WDOG	Marine City, Mich.	1590
WDOK	Cleveland, Ohio	1260
WDOL	Athens, Ga.	1470
WDON	Wheaton, Md.	1540
WDOR	Sturgeon Bay, Wis.	910
WDOS	Oneonta, N.Y.	730
WDOT	Burlington, Va.	1400
WDOV	Dover, Del.	1410
WDOW	Dowagiac, Mich.	1440
WDQN	DuQuoin, Ill.	1580
WDRC	Hartford, Conn.	1360
WDSC	Dillon, S.C.	800
WDSG	Dyersburg, Tenn.	1450
WDSK	Cleveland, Miss.	1410

C.L.	Location	Kc.
WDSM	Superior, Wis.	710
WDSP	DeFuniak Springs, Florida	1280
WDSR	Lake City, Fla.	1340
WDSU	New Orleans, La.	1280
WDUN	Gainesville, Ga.	1240
WDUX	Waupaca, Wis.	800
WDUZ	Green Bay, Wis.	1400
WDVA	Danville, Va.	1250
WDVH	Gainesville, Fla.	980
WDVL	Vineland, N.J.	1270
WDWD	Dawson, Ga.	990
WDWS	Champaign, Ill.	1400
WDXB	Chattanooga, Tenn.	1490
WDXE	Lawrenceburg, Tenn.	1370
WDXI	Jackson, Tenn.	1310
WDXL	Lexington, Tenn.	1490
WDXN	Clarksville, Tenn.	540
WDXR	Paducah, Ky.	1560
WDXY	Sumter, S.C.	1240
WDZ	Decatur, Ill.	1050
WEAB	Greer, S.C.	800
WEAG	Alcoa, Tenn.	1470
WEAM	Arlington, Va.	1390
WEAN	Providence, R.I.	790
WEAQ	Eau Claire, Wis.	790
WEAS	College Park, Ga.	1570
WEAT	W. Palm Beach, Fla.	850
WEAV	Plattsburg, N.Y.	960
WEAW	Evanston, Ill.	1330
WEBB	Baltimore, Md.	1360
WEBC	Duluth, Minn.	560
WEBJ	Brewton, Ala.	1240
WEBO	Owego, N.Y.	1330
WEBQ	Harrisburg, Ill.	1240
WEBR	Buffalo, N.Y.	970
WEBY	Milton, Fla.	1330
WECL	Eau Claire, Wis.	1050
WEDC	Chicago, Ill.	1240
WEDO	McKeesport, Pa.	810
WEEB	Southern Pines, N.C.	990
WEED	Rocky Mount, N.C.	1390
WEEE	Rensselaer, N.Y.	1300
WEEI	Boston, Mass.	590
WEEL	Fairfax, Va.	1310
WEEN	Lafayette, Tenn.	1460
WEER	Warrenton, Va.	1570
WEET	Richmond, Va.	1320
WEEU	Reading, Pa.	850
WEEW	Washington, N.C.	1320
WEEX	Easton, Pa.	1230
WEEZ	Chester, Pa.	1590
WEGO	Concord, N.C.	1410
WEGP	Presque Isle, Maine	1390
WEHH	Elmira Heights-Horseheads, N. Y.	1590
WEIC	Charleston, Ill.	1270
WEIM	Fitchburg, Mass.	1280
WEIR	Weirton, W.Va.	1430
WEIS	Center, Ala.	990
WEJL	Scranton, Pa.	630
WEKR	Fayetteville, Tenn.	1240
WEKY	Richmond, Ky.	1340
WEKZ	Monroe, Wis.	1260
WELB	Elba, Ala.	1350
WELC	Welch, W.Va.	1150
WELD	Fisher, W.Va.	690
WELE	S. Daytona, Fla.	1590
WELI	New Haven, Conn.	960
WELK	Charlottesville, Va.	1010
WELL	Battle Creek, Mich.	1400
WELM	Elmira, N.Y.	1410
WELO	Tupelo, Miss.	580
WELP	Easley, S.C.	1360
WELR	Roanoke, Ala.	1360
WELS	Kinston, N.C.	1010
WELW	Willoughby, O.	1330d
WELY	Ely, Minn.	1450
WELZ	Belzoni, Miss.	1460
WEMB	Erwin, Tenn.	1420
WEMD	Easton, Md.	1460
WEMJ	Laconia, N.H.	1490
WEMP	Milwaukee, Wis.	1250
WENA	Bayamon, P.R.	1560
WENC	Whiteville, N.C.	1220
WEND	Edensburg, Pa.	1580
WENE	Endicott, N.Y.	1430
WENK	Union City, Tenn.	1240
WENN	Birmingham, Ala.	1320
WENO	Madison, Tenn.	1430
WENT	Gloversville, N.Y.	1340
WENY	Elmira, N.Y.	1230
WEOK	Poughkeepsie, N.Y.	1390
WEOL	Elyria, Ohio	930
WEPG	S. Pittsburgh, Tenn.	910
WEPM	Martinsburg, W.Va.	1340
WERA	Plainfield, N.J.	1590
WERD	Atlanta, Ga.	860
WERE	Cleveland, Ohio	1300
WERH	Hamilton, Ala.	970
WERI	Westerly, R.I.	1230
WERL	Eagle River, Wis.	950
WERT	Van Wert, Ohio	1220
WESA	Charleroi, Pa.	940
WESB	Bradford, Pa.	1490
WESC	Greenville, S.C.	660
WESN	N. Augusta, S.C.	1550
WESO	Southbridge, Mass.	970
WESR	Tasley, Va.	1330
WEST	Easton, Pa.	1400
WESX	Salem, Mass.	1230
WESY	Leland, Miss.	1580
WETB	Johnson City, Tenn.	790
WETC	Wendell-Zebulon, N.C.	540
WETH	St. Augustine, Fla.	1420
WETO	Gadsden, Ala.	930
WETT	Ocean City, Md.	1590
WETU	Wetumpka, Ala.	1250

C.L.	Location	Kc.
WETZ	New Martinsville, West Virginia	1330
WEUC	Ponce, P.R.	1420
WEUP	Huntsville, Ala.	1600
WEVA	Emporia, Va.	860
WEVD	New York, N.Y.	1330
WEVE	Eveleth, Minn.	1340
WEW	St. Louis, Mo.	770
WEWO	Laurinburg, N.C.	1080
WEXL	Royal Oak, Mich.	1340
WEYE	Sanford, N.C.	1290
WEYY	Talladega, Ala.	1580
WEZB	Birmingham, Ala.	1220
WEZE	Boston, Mass.	1260
WEZJ	Williamsburg, Ky.	1440
WEZN	Elizabethtown, Pa.	1600
WEZY	Cocoa, Fla.	1350
WFAA	Dallas, Tex.	570, 820
WFAB	Miami, Fla.	990
WFAG	Farmville, N.C.	1250
WFAH	Alliance, Ohio	1310
WFAI	Fayetteville, N.C.	1230
WFAR	Farrell, Pa.	1470
WFAS	White Plains, N.Y.	1230
WFAU	Augusta, Me.	1340
WFAX	Falls Church, Va.	1220
WFBC	Greenville, S.C.	1330
WFBG	Altoona, Pa.	1290
WFBL	Syracuse, N.Y.	1390
WFBM	Indianapolis, Ind.	1260
WFBR	Baltimore, Md.	1300
WFCT	Fountain City, Tenn.	1430
WFDF	Flint, Mich.	910
WFDR	Manchester, Ga.	1370
WFEA	Manchester, N.Y.	1370
WFEB	Sylacauga, Ala.	1340
WFEC	Miami, Fla.	1220
WFFF	Columbia, Miss.	1600
WFFG	Marathon, Fla.	1300
WFGM	Fitchburg, Mass.	960
WFGN	Gaffney, S.C.	1570
WFGW	Black Mountains, N.C.	1010
WFHG	Bristol, Va.	980
WFHK	Pell City, Ala.	1430
WFHR	Wis. Rapids, Wis.	1320
WFIG	Sumter, S.C.	1290
WFIL	Philadelphia, Pa.	560
WFIN	Findlay, Ohio	1330
WFIS	Fountain Inn, S.C.	1600
WFIW	Fairfield, Ill.	1390
WFKN	Franklin, Ky.	1220
WFKY	Frankfort, Ky.	1490
WFLA	Tampa, Fla.	970
WFLB	Fayetteville, N.C.	1490
WFLI	Lookout Mtn., Tenn.	1070
WFLN	Philadelphia, Pa.	900
WFLO	Farmville, Va.	870
WFLR	Dundee, N.Y.	1570
WFLS	Fredericksburg, Va.	1350
WFLW	Monticello, Ky.	1360
WFMC	Goldsboro, N.C.	730
WFMD	Frederick, Md.	930
WFMH	Cullman, Ala.	1460
WFMJ	Youngstown, Ohio	1390
WFMO	Fairmont, N.C.	860
WFMW	Madisonville, Ky.	730
WFNC	Fayetteville, N.C.	1390
WFNL	No. Augusta, S.C.	1600
WFOB	Fostoria, Ohio	1430
WFOM	Marietta, Ga.	1230
WFOR	Hattiesburg, Miss.	1400
WFOX	Milwaukee, Wis.	860
WFOY	St. Augustine, Fla.	1240
WFPA	Fort Payne, Ala.	1400
WFPG	Atlantic City, N.J.	1450
WFPM	Fort Valley, Ga.	1150
WFPR	Hammond, La.	1400
WFRA	Franklin, Pa.	1430
WFRB	Frostburg, Md.	560
WFRC	Reidsville, N.C.	1600
WFRL	Freeport, Ill.	1570
WFRM	Coudersport, Pa.	600
WFRO	Fremont, Ohio	900
WFRX	West Frankfort, Ill.	1300
WFSC	Franklin, N.C.	1050
WFSG	Boca Raton, Fla.	740
WFSR	Bath, N.Y.	1380
WFST	Caribou, Maine	600
WFTC	Kinston, N.C.	960
WFTG	London, Ky.	1400
WFTL	Ft. Lauderdale, Fla.	1400
WFTM	Maysville, Ky.	1240
WFTR	Front Royal, Va.	1450
WFTW	Ft. Walton Beach, Florida	1260
WFUL	Fulton, Ky.	1270
WFUN	Huntsville, Ala.	1450
WFUR	Grand Rapids, Mich.	1570
WFVA	Fredericksburg, Va.	1230
WFVG	Fuquay Sprgs., N.C.	1460
WFWL	Camden, Tenn.	1220
WFYC	Alma, Mich.	1280
WFYI	Mineola, N.Y.	1520
WGAA	Cedartown, Ga.	1340
WGAC	Augusta, Ga.	580
WGAD	Gadsden, Ala.	1350
WGAF	Valdosta, Ga.	910
WGAI	Elizabeth City, N.C.	560
WGAL	Lancaster, Pa.	1490
WGAN	Portland, Maine	560
WGAP	Maryville, Tenn.	1400
WGAR	Cleveland, Ohio	1220
WGAS	S. Gastonia, N.C.	1420
WGAT	Gate City, Va.	1050
WGAU	Athens, Ga.	1340
WGAW	Gardner, Mass.	1340
WGBA	Columbus, Ga.	1270

C.L.	Location	Kc.
WGBB	Freeport, N.Y.	1240
WGBF	Evansville, Ind.	1280
WGBG	Greensboro, N.C.	1400
WGBI	Scranton, Pa.	910
WGBR	Goldsboro, N. C.	1150
WGBS	Miami, Fla.	710
WGCB	Red Lion, Pa.	1440
WGCD	Chester, S.C.	1490
WGCM	Gulfport, Miss.	1240
WGEA	Geneva, Ala.	1150
WGEE	Indianapolis, Ind.	1590
WGEM	Quincy, Ill.	1440
WGET	Gettysburg, Pa.	1320
WGEZ	Beloit, Wis.	1490
WGFA	Watseka, Ill.	1360
WGFS	Covington, Ga.	1430
WGGA	Gainesville, Ga.	550
WGGG	Gainesville, Fla.	1230
WGGH	Marion, Ill.	1150
WGGO	Salamanca, N.Y.	1590
WGH	Newport News, Va.	1310
WGHC	Clayton, Ga.	1570
WGHM	Skowegan, Maine	1150
WGHN	Grd. Haven, Mich.	1370
WGHO	Kingston, N.Y.	920
WGIG	Brunswick, Ga.	1440
WGIL	Galesburg, Ill.	1400
WGIR	Manchester, N.H.	610
WGIV	Charlotte, N.C.	1600
WGKA	Atlanta, Ga.	1600
WGL	Fort Wayne, Ind.	1250
WGLC	Centreville, Miss.	1580
WGLD	Chardon, Ohio	1560
WGLI	Babylon, N.Y.	1290
WGMA	Hollywood, Fla.	1320
WGML	Hinesville, Ga.	990
WGMM	Millington, Tenn.	1380
WGMS	Washington, D.C.	570
WGN	Chicago, Ill.	720
WGNC	Gastonia, N.C.	1450
WGNI	Wilmington, N.C.	1450
WGNO	Granite City, Ill.	920
WGNP	Indian Rocks Beach, Fla.	1520
WGNS	Murfreesboro, Tenn.	1450
WGNY	Newburgh, N.Y.	1220
WGOG	Walhalla, S.C.	1460
WGOH	Grayson, Ky.	1370
WGOK	Mobile, Ala.	900
WGOL	Goldsboro, N.C.	1300
WGOV	Valdosta, Ga.	950
WGPA	Bethlehem, Pa.	1100
WGPC	Albany, Ga.	1450
WGR	Buffalo, N.Y.	550
WGRA	Cairo, Ga.	790
WGRD	Grand Rapids, Mich.	1410
WGRF	Aguadella, P.R.	1340
WGRM	Greenwood, Miss.	1240
WGRO	Lake City, Fla.	960
WGRP	Greenville, Pa.	940
WGRV	Greeneville, Tenn.	1340
WGRY	Gary, Ind.	1370
WGSA	Ephrata, Pa.	1310
WGSB	Geneva, Ill.	1480
WGSM	Huntington, N.Y.	740
WGSR	Millen, Ga.	1570
WGST	Atlanta, Ga.	920
WGSV	Guntersville, Ala.	1270
WGSW	Greenwood, S.C.	1350
WGTA	Summerville, Ga.	930
WGTC	Greenville, N.C.	1590
WGTL	Kannapolis, N.C.	870
WGTM	Wilson, N.C.	590
WGTN	Georgetown, S.C.	1400
WGTO	Cypress Gardens, Fla.	540
WGUN	Decatur, Ga.	1010
WGUS	North Augusta, S.C.	1380
WGUY	Bangor, Maine	1250
WGVA	Geneva, N.Y.	1240
WGVM	Greenville, Miss.	1260
WGWC	Selma, Ala.	1340
WGWR	Asheboro, N.C.	1260
WGY	Schenectady, N.Y.	810
WGYV	Greenville, Ala.	1380
WHA	Madison, Wis.	970
WHAB	Baxley, Ga.	1260
WHAI	Greenfield, Mass.	1240
WHAK	Rogers City, Mich.	960
WHAL	Shelbyville, Tenn.	1400
WHAM	Rochester, N.Y.	1180
WHAN	Haines City, Fla.	930
WHAP	Hopewell, Va.	1340
WHAR	Clarksburg, W.Va.	1340
WHAS	Louisville, Ky.	840
WHAT	Philadelphia, Pa.	1340
WHAV	Haverhill, Mass.	1490
WHAW	Weston, W.Va.	980
WHAY	New Britain, Conn.	910
WHAZ	Troy, N.Y.	1330
WHB	Kansas City, Mo.	710
WHBB	Selma, Ala.	1490
WHBC	Canton, Ohio	1480
WHBF	Rock Island, Ill.	1270
WHBG	Harrisonburg, Va.	1360
WHBL	Sheboygan, Wis.	1330
WHBN	Harrodsburg, Ky.	1420
WHBO	Tampa, Fla.	1050
WHBQ	Memphis, Tenn.	560
WHBT	Harriman, Tenn.	1600
WHBU	Anderson, Ind.	1240
WHBY	Appleton, Wis.	1230
WHCC	Waynesville, N.C.	1400
WHCO	Sparta, Ill.	1230
WHCU	Ithaca, N.Y.	870
WHDF	Houghton, Mich.	1400
WHDH	Boston, Mass.	850
WHDL	Olean, N.Y.	1450
WHDM	McKenzie, Tenn.	1440
WHEB	Portsmouth, N.H.	750
WHEC	Rochester, N.Y.	1460
WHEE	Martinsville, Va.	1370
WHEN	Syracuse, N.Y.	620
WHEO	Stuart, Va.	1270
WHEP	Foley, Ala.	1310
WHER	Memphis, Tenn.	1430
WHEW	Riviera Beach, Fla.	1600
WHEY	Millington, Tenn.	1220
WHFB	Benton Harbor, Mich.	1060
WHFC	Cicero, Ill.	1450
WHGB	Harrisburg, Pa.	1400
WHGR	Houghton L., Mich.	1290
WHHH	Warren, Ohio	1440
WHHL	Holly Hill, S.C.	1440
WHHM	Memphis, Tenn.	1340
WHHT	Lucedale, Miss.	1440
WHHV	Hillsville, Va.	1400
WHHY	Montgomery, Ala.	1440
WHIE	Griffin, Ga.	1320
WHIH	Portsmouth, Va.	1400
WHIL	Medford, Mass.	1430
WHIM	E. Providence, R.I.	1110
WHIN	Gallatin, Tenn.	1010
WHIO	Dayton, Ohio	1290
WHIP	Mooresville, N.C.	1350
WHIR	Danville, Ky.	1230
WHIS	Bluefield, W.Va.	1440
WHIT	New Bern, N.C.	1450
WHIY	Orlando, Fla.	1270
WHIZ	Zanesville, Ohio	1240
WHJB	Greensburg, Pa.	620
WHJC	Matawan, W.Va.	1360
WHK	Cleveland, Ohio	1420
WHKP	Hendersonville, N.C.	1450
WHKY	Hickory, N.C.	1290
WHLB	Virginia, Minn.	1400
WHLD	Niagara Falls, N.Y.	1270
WHLF	South Boston, Va.	1400
WHLI	Hempstead, N.Y.	1100
WHLL	Wheeling, W.Va.	1600
WHLM	Bloomsburg, Pa.	550
WHLN	Harlan, Ky.	1410
WHLO	Akron, Ohio	640
WHLP	Centerville, Tenn.	1570
WHLS	Port Huron, Mich.	1450
WHLT	Huntington, Ind.	1300
WHMA	Anniston, Ala.	1390
WHMC	Gaithersburg, Md.	1150
WHMI	Howell, Mich.	1350
WHMP	Northampton, Mass.	1400
WHN	New York, N.Y.	1050
WHNC	Henderson, N.C.	890
WHNY	McComb, Miss.	1250
WHO	Des Moines, Iowa	1040
WHOA	San Juan, P.R.	870
WHOC	Philadelphia, Miss.	1490
WHOF	Canton, Ohio	1060
WHOK	Lancaster, Ohio	1320
WHOL	Allentown, Pa.	600
WHOM	New York, N.Y.	1480
WHOO	Orlando, Fla.	990
WHOP	Hopkinsville, Ky.	1230
WHOS	Decatur, Ala.	800
WHOT	Campbell, Ohio	1330
WHOU	Houlton, Maine	1340
WHOW	Clinton, Ill.	1520
WHP	Harrisburg, Pa.	580
WHPB	Belton, S.C.	1390
WHPE	High Point, N.C.	1070
WHRT	Hartselle, Ala.	860
WHRV	Ann Arbor, Mich.	1600
WHSC	Hartsville, S.C.	1450
WHSL	Wilmington, N.C.	1490
WHSM	Hayward, Wis.	910
WHSY	Hattiesburg, Miss.	1230
WHTC	Holland, Mich.	1450
WHTG	Eatontown, N.J.	1410
WHUB	Cookeville, Tenn.	1400
WHUC	Hudson, N.Y.	1230
WHUM	Reading, Pa.	1240
WHUN	Huntington, Pa.	1150
WHUT	Anderson, Ind.	1470
WHVF	Wausau, Wis.	1230
WHVR	Hanover, Pa.	1280
WHWB	Rutland, Vt.	1000
WHWH	Princeton, N.J.	1350
WHYE	Roanoke, Va.	910
WHYL	Carlisle, Pa.	960
WHYN	Springfield, Mass.	560
WIAC	San Juan, P.R.	740
WIAM	Williamston, N.C.	900
WIBA	Madison, Wis.	1310
WIBB	Macon, Ga.	1280
WIBC	Indianapolis, Ind.	1070
WIBG	Philadelphia, Pa.	990
WIBM	Jackson, Mich.	1450
WIBR	Baton Rouge, La.	1300
WIBU	Poynette, Wis.	1240
WIBV	Belleville, Ill.	1260
WIBW	Topeka, Kans.	580
WIBX	Utica, N.Y.	950
WICC	Bridgeport, Conn.	600
WICE	Providence, R.I.	1290
WICH	Norwich, Conn.	1310
WICK	Scranton, Pa.	1400
WICO	Salisbury, Md.	1320
WICU	Erie, Pa.	1330
WICY	Malone, N.Y.	1490
WIDE	Biddeford, Maine	1400
WIDU	Fayetteville, N.C.	1600
WIEL	Elizabethtown, Ky.	1400
WIFM	Elkin, N.C.	1540
WIGL	Superior, Wis.	970
WIGM	Medford, Wis.	1490
WIGO	Indianapolis, Ind.	810
WIIN	Atlanta, Ga.	970
WIKB	Iron River, Mich.	1230
WIKC	Bogalusa, La.	1490
WIKE	Newport, Vt.	1490
WIKY	Evansville, Ind.	820
WIL	St. Louis, Mo.	1430
WILA	Danville, Va.	1580
WILD	Boston, Mass.	1090
WILE	Cambridge, Ohio	1270
WILI	Willimantic, Conn.	1400
WILK	Wilkes-Barre, Pa.	980
WILL	Urbana, Ill.	580
WILM	Wilmington, Del.	1450
WILO	Frankfort, Ind.	1570
WILS	Lansing, Mich.	1320
WILZ	St. Petersburg Beach, Florida	1590
WIMA	Lima, Ohio	1150
WIMO	Winder, Ga.	1300
WIMS	Michigan City, Ind.	1420
WINA	Charlottesville, Va.	1400
WINC	Winchester, Va.	1400
WIND	Chicago, Ill.	560
WINF	Manchester, Conn.	1230
WING	Dayton, Ohio	1410
WINI	Murphysboro, Ill.	1420
WINK	Fort Myers, Fla.	1240
WINN	Louisville, Ky.	1240
WINQ	Tampa, Fla.	1010
WINR	Binghamton, N.Y.	680
WINS	New York, N.Y.	1010
WINT	Winter Haven, Fla.	1360
WINX	Rockville, Md.	1600
WINY	Putnam, Conn.	1350
WINZ	Miami, Fla.	940
WIOI	New Boston, Ohio	1010
WIOK	Normal, Ill.	1440
WION	Ionia, Mich.	1430
WIOS	Tawas City, Mich.	1480
WIOU	Kokomo, Ind.	1350
WIP	Philadelphia, Pa.	610
WIPC	Lake Wales, Fla.	1280
WIPR	San Juan, P.R.	940
WIPS	Ticonderoga, N.Y.	1250
WIRA	Fort Pierce, Fla.	1400
WIRB	Enterprise, Ala.	600
WIRC	Hickory, N.C.	630
WIRD	Lake Placid, N.Y.	920
WIRE	Indianapolis, Ind.	1430
WIRJ	Humboldt, Tenn.	740
WIRK	W. Palm Beach, Fla.	1290
WIRL	Peoria, Ill.	1290
WIRO	Ironton, Ohio	1230
WIRV	Irvine, Ky.	1550
WIRY	Plattsburg, N.Y.	1340
WIS	Columbia, S.C.	560
WISA	Isabella, P.R.	1390
WISE	Asheville, N.C.	1310
WISH	Indianapolis, Ind.	1310
WISL	Shamokin, Pa.	1480
WISM	Madison, Wis.	1480
WISN	Milwaukee, Wis.	1150
WISO	Ponce, P.R.	1260
WISP	Kinston, N.C.	1230
WISR	Butler, Pa.	680
WIST	Charlotte, N.C.	1240
WISV	Virouqua, Wis.	1360
WITA	San Juan, P.R.	1140
WITH	Baltimore, Md.	1230
WITW	Washington, N.C.	930
WITY	Danville, Ill.	980
WITZ	Jasper, Ind.	990
WIVE	Ashland, Va.	1430
WIVI	Christiansted, V.I.	970
WIVK	Knoxville, Tenn.	860
WIVV	Vieques, P.R.	1370
WIVY	Jacksonville, Fla.	1050
WIXK	New Richmond, Wis.	1590
WIXN	Dixon, Ill.	1460
WIXX	Oakland Park, Fla.	1520
WIYN	Rome, Ga.	1360
WIZE	Springfield, Ohio	1340
WIZR	Johnstown, N.Y.	930
WIZS	Henderson, N.C.	1450
WIZZ	Streator, Ill.	1250
WJAB	Westbrook, Me.	1440
WJAC	Johnstown, Pa.	850
WJAG	Norfolk, Nebr.	780
WJAK	Jackson, Tenn.	1460
WJAM	Marion, Ala.	1310
WJAN	Ishpeming, Mich.	970
WJAR	Providence, R.I.	920
WJAS	Pittsburgh, Pa.	1320
WJAT	Swainsboro, Ga.	800
WJAX	Jacksonville, Fla.	930
WJAY	Mullins, S.C.	1280
WJAZ	Albany, Ga.	960
WJBB	Haleyville, Ala.	1230
WJBC	Bloomington, Ill.	1230
WJBD	Salem, Ill.	1350
WJBK	Detroit, Mich.	1500
WJBL	Holland, Mich.	1260
WJBM	Jerseyville, Ill.	1480
WJBO	Baton Rouge, La.	1150
WJBS	DeLand, Fla.	1490
WJBT	Wheeling, W.Va.	1470
WJCD	Seymour, Ind.	1390
WJCM	Sebring, Fla.	960
WJCO	Jackson, Mich	1510
WJCW	Johnson City, Tenn.	910
WJDA	Quincy, Mass.	1300
WJDB	Thomasville, Ala.	630
WJDX	Jackson, Miss.	620
WJDY	Salisbury, Md.	1470
WJEF	Grand Rapids, Mich.	1230
WJEH	Gallipolis, Ohio	990
WJEJ	Hagerstown, Md.	1240
WJEM	Valdosta, Ga.	1150
WJER	Dover, Ohio	1450
WJES	Johnston, S.C.	1570
WJET	Erie, Pa.	1400
WJFC	Jefferson City, Tenn.	1480
WJHO	Opelika, Ala.	1400
WJIG	Tullahoma, Tenn.	740
WJIL	Jacksonville, Ill.	1550
WJIM	Lansing, Mich.	1240
WJIV	Savannah, Ga.	900
WJJC	Commerce, Ga.	1270
WJJD	Chicago, Ill.	1160
WJJL	Niagara Falls, N.Y.	1440
WJJM	Lewisburg, Tenn.	1490
WJLB	Detroit, Mich.	1400
WJLD	Homewood, Ala.	1400
WJLK	Asbury Park, N.J.	1310
WJLS	Beckley, W.Va.	560
WJMA	Orange, Va.	1340
WJMB	Brookhaven, Miss.	1340
WJMC	Rice Lake, Wis.	1240
WJMJ	Philadelphia, Pa.	1540
WJMO	Cleveland Hgts., Ohio	1490
WJMR	New Orleans, La.	990
WJMS	Ironwood, Mich.	630
WJMW	Athens, Ala.	730
WJMX	Florence, S.C.	970
WJNC	Jacksonville, N.C.	1240
WJNO	W. Palm Beach, Fla.	1230
WJOB	Hammond, Ind.	1230
WJOE	Ward Ridge, Fla.	1570
WJOI	Florence, Ala.	1340
WJOL	Joliet, Ill.	1340
WJON	St. Cloud, Minn.	1240
WJOR	South Haven, Mich.	940
WJOT	Lake City, S.C.	1260
WJOY	Burlington, Vt.	1230
WJPA	Washington, Pa.	1450
WJPD	Ishpeming, Mich.	1240
WJPF	Herrin, Ill.	1340
WJPG	Green Bay, Wis.	1440
WJPR	Greenville, Miss.	1330
WJPS	Evansville, Ind.	1330
WJQS	Jackson, Miss.	1400
WJR	Detroit, Mich.	760
WJRC	Joliet, Ill.	1510
WJRD	Tuscaloosa, Ala.	1150
WJRI	Lenoir, N.C.	1340
WJRL	Rockford, Ill.	1150
WJRM	Troy, N.C.	1390
WJRZ	Newark, N.J.	970
WJSB	Crestview, Fla.	1050
WJSO	Jonesboro, Tenn.	1590
WJTN	Jamestown, N.Y.	1240
WJUD	St. Johns, Mich.	1580
WJUN	Mexico, Pa.	1220
WJVA	South Bend, Ind.	1580
WJW	Cleveland, Ohio	850
WJWL	Georgetown, Del.	900
WJWS	South Hill, Va.	1370
WJWT	Demopolis, Ala.	1350
WJXN	Jackson, Miss.	1450
WJZM	Clarksville, Tenn.	1400
WKAI	Macomb, Ill.	1510
WKAL	Rome, N.Y.	1450
WKAM	Goshen, Ind.	1460
WKAN	Kankakee, Ill.	1320
WKAP	Allentown, Pa.	1320
WKAQ	San Juan, P.R.	580
WKAR	East Lansing, Mich.	870
WKAT	Miami Beach, Fla.	1360
WKAY	Glasgow, Ky.	1490
WKAZ	Charleston, W.Va.	950
WKBC	N. Wilkesboro, N.C.	810
WKBH	La Crosse, Wis.	1410
WKBI	St. Mary's, Pa.	1400
WKBJ	Milan, Tenn.	1600
WKBK	Keene, N.H.	1220
WKBL	Covington, Tenn.	1250
WKBN	Youngstown, Ohio	570
WKBO	Harrisburg, Pa.	1230
WKBR	Manchester, N.H.	1250
WKBV	Richmond, Ind.	1490
WKBW	Buffalo, N. Y.	1520
WKBX	Kissimmee, Fla.	1220
WKBZ	Muskegon, Mich.	850
WKCT	Bowling Green, Ky.	930
WKCW	Warrenton, Va.	1420
WKDA	Nashville, Tenn.	1240
WKDE	Altavista, Va.	1280
WKDK	Newberry, S.C.	1240
WKDL	Clarksdale, Miss.	1600
WKDN	Camden, N.J.	800
WKDX	Hamlet, N.C.	1400
WKEE	Huntington, W. Va.	800
WKEI	Kewanee, Ill.	1450
WKEN	Dover, Del.	1600
WKEU	Griffin, Ga.	1450
WKEY	Covington, Va.	1340
WKFD	Wickford, R.I.	1370
WKGN	Knoxville, Tenn.	1340
WKHM	Jackson, Mich.	970
WKIC	Hazard, Ky.	1390
WKID	Urbana, Ill.	1580
WKIG	Glenville, Ga.	1580
WKIK	Leonardtown, Md.	1370
WKIN	Kingsport, Tenn.	1320
WKIP	Poughkeepsie, N.Y.	1450
WKIS	Orlando, Fla.	740
WKIX	Raleigh, N.C.	850
WKIZ	Key West, Fla.	1500
WKJB	Mayaguez, P.R.	710
WKJG	Fort Wayne, Ind.	1380
WKJR	Muskegon, Mich.	1520
WKKD	Aurora, Ill.	1580
WKKO	Cocoa, Fla.	860
WKKS	Vanceburg, Ky.	1570
WKLA	Ludington, Mich.	1450

C.L.	Location	Kc.
WKLC	St. Albans, W.Va.	1300
WKLE	Washington, Ga.	1370
WKLF	Clanton, Ala.	980
WKLJ	Sparta, Wis.	990
WKLK	Cloquet, Minn.	1230
WKLM	Wilmington, N.C.	980
WKLO	Louisville, Ky.	1080
WKLV	Blackstone, Va.	1440
WKLX	Paris, Ky.	1440
WKLY	Hartwell, Ga.	980
WKLZ	Kalamazoo, Mich.	1470
WKMC	Roaring Sprgs., Pa.	1370
WKMF	Flint, Mich.	1470
WKMH	Dearborn, Mich.	1310
WKMI	Kalamazoo, Mich.	1360
WKMK	Blountstown, Fla.	1370
WKMT	Kings Mtn., N.C.	1220
WKNE	Keene, N.H.	1290
WKNX	Saginaw, Mich.	1210
WKNY	Kingston, N.Y.	1490
WKOA	Hopkinsville, Ky.	1480
WKOK	Sunbury, Pa.	1240
WKOP	Binghamton, N.Y.	1360
WKOS	Ocala, Fla.	1370
WKOV	Wellston, Ohio	1330
WKOW	Madison, Wis.	1070
WKOX	Framingham, Mass.	1190
WKOY	Bluefield, W.Va.	1240
WKOZ	Kosciusko, Miss.	1350
WKPA	New Kensington, Pa.	1150
WKPR	Kalamazoo, Mich.	1420
WKPT	Kingsport, Tenn.	1400
WKRC	Cincinnati, Ohio	550
WKRG	Mobile, Ala.	710
WKRK	Murphy, N.C.	1320
WKRM	Columbia, Tenn.	1340
WKRO	Cairo, Ill.	1490
WKRS	Waukegan, Ill.	1220
WKRT	Cortland, N.Y.	920
WKRW	Cartersville, Ga.	
WKRZ	Oil City, Pa.	1340
WKSB	Milford, Del.	930
WKSC	Kershaw, S.C.	1300
WKSK	W. Jefferson, N.C.	1600
WKSR	Pulaski, Tenn.	1420
WKST	New Castle, Pa.	1280
WKTC	Charlotte, N.C.	1310
WKTG	Thomasville, Ga.	730
WKTJ	Farmington, Maine	1380
WKTL	Sheboygan, Wis.	950
WKTQ	South Paris, Maine	1450
WKTX	Atlantic Beach, Fla.	1600
WKTY	LaCrosse, Wis.	580
WKUL	Cullman, Ala.	1340
WKVA	Lewistown, Pa.	920
WKVM	San Juan, P.R.	810
WKVT	Brattleboro, Vt.	1490
WKWF	Key West, Fla.	1600
WKWK	Wheeling, W.Va.	1400
WKWS	Rocky Mount, Va.	1290
WKXL	Concord, N.H.	1450
WKXV	Knoxville, Tenn.	900
WKXY	Sarasota, Fla.	930
WKY	Oklahoma City, Okla.	930
WKYB	Paducah, Ky.	570
WKYN	Rio Piedras, P.R.	630
WKYR	Keyser, W.Va.	1270
WKYW	Louisville, Ky.	900
WKZO	Kalamazoo, Mich.	590
WLAC	Nashville, Tenn.	1510
WLAD	Danbury, Conn.	800
WLAF	LaFollette, Tenn.	1450
WLAG	La Grange, Ga.	1240
WLAK	Lakeland, Fla.	1430
WLAM	Lewiston, Maine	1470
WLAN	Lancaster, Pa.	1390
WLAP	Lexington, Ky.	630
WLAQ	Rome, Ga.	1410
WLAR	Athens, Tenn.	1450
WLAS	Jacksonville, N.C.	910
WLAT	Conway, S.C.	1330
WLAU	Laurel, Miss.	1600
WLAV	Grand Rapids, Mich.	1340
WLAW	Lawrenceville, Ga.	1360
WLAY	Muscle Shoals, Ala.	1450
WLBA	Gainesville, Ga.	1580
WLBB	Carrollton, Ga.	1100
WLBC	Muncie, Ind.	1340
WLBE	Leesburg, Fla.	790
WLBG	Laurens, S.C.	860
WLBH	Mattoon, Ill.	1170
WLBI	Denham Springs, La.	1220
WLBJ	Bowling Green, Ky.	1410
WLBK	DeKalb, Ill.	1360
WLBL	Stevens Point, Wis.	930
WLBN	Lebanon, Ky.	1590
WLBR	Lebanon, Pa.	1270
WLBZ	Bangor, Maine	620
WLCK	Scottsville, Ky.	1250
WLCM	Lancaster, S.C.	1360
WLCN	Laurensburg, N.C.	1300
WLCO	Eustis, Fla.	1240
WLCS	Baton Rouge, La.	910
WLCX	LaCrosse, Wis.	1490
WLCY	St. Petersburg, Fla.	1380
WLDB	Atlantic City, N.J.	1490
WLDS	Jacksonville, Ill.	1180
WLDY	Ladysmith, Wis.	1340
WLEA	Hornell, N.Y.	1480
WLEC	Sandusky, Ohio	1450
WLEE	Richmond, Va.	1480
WLEM	Emporium, Pa.	1240
WLEO	Ponce, P.R.	1170
WLET	Toccoa, Ga.	1420
WLEU	Erie, Pa.	1450
WLEW	Bad Axe, Mich.	1340
WLFA	Lafayette, Ga.	1590
WLFH	Little Falls, N.Y.	1230
WLGS	Lawrenceville, Va.	580
WLIB	New York, N.Y.	1190
WLIJ	Shelbyville, Tenn.	1580
WLIK	Newport, Tenn.	1270
WLIL	Lenoir, Tenn.	730
WLIP	Kenosha, Wis.	1050
WLIQ	Mobile, Ala.	1360
WLIS	Old Saybrook, Conn.	1420
WLIV	Livingston, Tenn.	920
WLIZ	Lake Worth, Fla.	1380
WLKM	Three Rivers, Mich.	1510
WLKW	Providence, R.I.	990
WLLE	Raleigh, N.C.	570
WLLH	Lowell, Mass.	1400
WLLY	Wilson, N.C.	1350
WLMJ	Jackson, Ohio	1280
WLNA	Peekskill, N.Y.	1420
WLNG	Sag Harbor, N.Y.	1600
WLNH	Laconia, N.H.	1350
WLOA	Braddock, Pa.	1550
WLOB	Portland, Maine	1310
WLOC	Munfordville, Ky.	1150
WLOD	Pompano Beach, Fla.	980
WLOE	Leaksville, N.C.	1490
WLOF	Orlando, Fla.	950
WLOG	Logan, W.Va.	1230
WLOH	Princeton, W.Va.	1490
WLOI	LaPorte, Ind.	1540
WLOK	Memphis, Tenn.	1480
WLOL	Minneapolis, Minn.	1330
WLON	Lincolnton, N.C.	1050
WLOS	Asheville, N.C.	1380
WLOU	Louisville, Ky.	1350
WLOW	Aiken, S.C.	1300
WLOX	Biloxi, Miss.	1490
WLPM	Suffolk, Va.	1460
WLPO	LaSalle, Ill.	1220
WLPS	Lehighton, Pa.	1150
WLS	Chicago, Ill.	890
WLSB	Copper Hill, Tenn.	1400
WLSC	Loris, S.C.	1570
WLSD	Big Stone Gap, Va.	1220
WLSE	Wallace, N.C.	1400
WLSH	Lansford, Pa.	1410
WLSI	Pikeville, Ky.	900
WLSM	Louisville, Miss.	1270
WLST	Escanaba, Mich.	600
WLSV	Wellsville, N.Y.	790
WLTC	Gastonia, N.C.	1370
WLUV	Loves Park, Ill.	1520
WLVA	Lynchburg, Va.	590
WLVN	Nashville, Tenn.	1560
WLW	Cincinnati, Ohio	700
WLYB	Albany, Ga.	1250
WLYC	Williamsport, Pa.	1050
WLYN	Lynn, Mass.	1360
WLYO	New Orleans, La.	940
WMAB	Munising, Mich.	1400
WMAC	Netter, Ga.	1360
WMAF	Madison, Fla.	1230
WMAG	Forest, Miss.	860
WMAJ	State College, Pa.	1450
WMAK	Nashville, Tenn.	1300
WMAL	Washington, D.C.	630
WMAM	Marinette, Wis.	570
WMAN	Mansfield, Ohio	1400
WMAP	Monroe, N.C.	1060
WMAQ	Chicago, Ill.	670
WMAS	Springfield, Mass.	1450
WMAT	Lansing, Mich.	1010
WMAX	Grand Rapids, Mich.	1480
WMAY	Springfield, Ill.	970
WMAZ	Macon, Ga.	940
WMBA	Ambridge, Pa.	1460
WMBC	Macon, Miss.	1400
WMBD	Peoria, Ill.	1470
WMBG	Richmond, Va.	1380
WMBH	Joplin, Mo.	1450
WMBI	Chicago, Ill.	1110
WMBL	Morehead City, N.C.	740
WMBM	Miami Beach, Fla.	1490
WMBN	Petoskey, Mich.	1340
WMBO	Auburn, N.Y.	1340
WMBR	Jacksonville, Fla.	1460
WMBS	Uniontown, Pa.	590
WMC	Memphis, Tenn.	790
WMCA	New York, N.Y.	570
WMCH	Church Hill, Tenn.	1260
WMCP	Columbia, Tenn.	1280
WMCR	Oneida, N.Y.	1600
WMCW	Harvard, Ill.	1600
WMDC	Hazlehurst, Miss.	1220
WMDD	Fajardo, P.R.	1480
WMDN	Midland, Mich.	1490
WMEG	Eau Gallie, Fla.	920
WMEK	Chase City, Va.	980
WMEN	Tallahassee, Fla.	1330
WMEV	Marion, Va.	1010
WMEX	Boston, Mass.	1510
WMFC	Monroeville, Ala.	1360
WMFD	Wilmington, N.C.	630
WMFG	Hibbing, Minn.	1240
WMFJ	Daytona Beach, Fla.	1450
WMFR	High Point, N.C.	1230
WMFT	Terre Haute, Ind.	1300
WMGA	Moultrie, Ga.	1400
WMGR	Bainbridge, Ga.	930
WMGS	Bowling Green, Ohio	730
WMGW	Meadville, Pa.	1490
WMGY	Montgomery, Ala.	800
WMID	Atlantic City, N.J.	1340
WMIE	Miami, Fla.	1140
WMIK	Middlesboro, Ky.	560
WMIL	Milwaukee, Wis.	1290
WMIN	Mpls.-St. Paul, Minn.	1400
WMIQ	Iron Mountain, Mich.	1450
WMIS	Natchez, Miss.	1240
WMIX	Mt. Vernon, Ill.	940
WMJM	Cordele, Ga.	1490
WMLF	Pineville, Ky.	1230
WMLO	Beverly, Mass.	1570
WMLS	Sylacauga, Ala.	1290
WMLT	Dublin, Ga.	1330
WMMB	Melbourne, Fla.	1240
WMMH	Marshall, N.C.	1460
WMMM	Westport, Conn.	1260
WMMN	Fairmont, W.Va.	920
WMMS	Bath, Maine	730
WMMW	Meriden, Conn.	1470
WMNA	Gretna, Va.	730
WMNB	No. Adams, Mass.	1230
WMNC	Morganton, N.C.	1430
WMNE	Menomonie, Wis.	1360
WMNI	Columbus, Ohio	920
WMNS	Olean, N.Y.	1360
WMNT	Manati, P.R.	1500
WMNZ	Montezuma, Ga.	1050
WMOA	Marietta, Ohio	1490
WMOC	Chattanooga, Tenn.	1450
WMOD	Moundsville, W.Va.	1370
WMOE	Mobile, Ala.	1550
WMOG	Brunswick, Ga.	1490
WMOH	Hamilton, Ohio	1450
WMOK	Metropolis, Ill.	920
WMON	Montgomery, W.Va.	1340
WMOP	Ocala, Fla.	900
WMOR	Morehead, Ky.	1330
WMOU	Berlin, N.H.	1230
WMOV	Ravenswood, W.Va.	1360
WMOX	Meridian, Miss.	1240
WMOZ	Mobile, Ala.	960
WMPA	Aberdeen, Miss.	1240
WMPC	Lapeer, Mich.	1230
WMPL	Hancock, Mich.	920
WMPM	Smithfield, N.C.	1270
WMPO	Middleport-Pomroy, Ohio	1390
WMPP	Chicago Heights, Ill.	1470
WMPS	Memphis, Tenn.	680
WMPT	So. Williamsport, Pa.	1450
WMRB	Greenville, S.C.	1490
WMRC	Milford, Mass.	1490
WMRE	Monroe, Ga.	1490
WMRF	Lewistown, Pa.	1490
WMRI	Marion, Ind.	860
WMRN	Marion, Ohio	1490
WMRO	Aurora, Ill.	1280
WMRP	Flint, Mich.	1570
WMSA	Massena, N.Y.	1340
WMSJ	Sylva, N.C.	1480
WMSK	Morganfield, Ky.	1550
WMSL	Decatur, Ala.	1400
WMSR	Manchester, Tenn.	1320
WMST	Mt. Sterling, Ky.	1150
WMT	Cedar Rapids, Iowa	600
WMTA	Central City, Ky.	1380
WMTC	Vancleve, Ky.	730
WMTD	Hinton, W. Va.	1380
WMTE	Manistee, Mich.	1340
WMTL	Leitchfield, Ky.	1580
WMTM	Moultrie, Ga.	1300
WMTN	Morristown, Tenn.	1300
WMTR	Morristown, N.J.	1250
WMTS	Murfreesboro, Tenn.	860
WMUS	Muskegon, Mich.	1090
WMUU	Greenville, S.C.	1260
WMVA	Martinsville, Va.	1450
WMVB	Millville, N.J.	1440
WMVG	Milledgeville, Ga.	1450
WMVO	Mt. Vernon, Ohio	1300
WMYB	Myrtle Beach, S.C.	1450
WMYN	Mayodan, N.C.	1420
WMYR	Ft. Myers, Fla.	1410
WNAB	Bridgeport, Conn.	1450
WNAC	Boston, Mass.	680
WNAD	Norman, Okla.	640
WNAE	Warren, Pa.	1310
WNAG	Grenada, Miss.	1400
WNAH	Nashville, Tenn.	1360
WNAK	Nanticoke, Pa.	730
WNAM	Neenah, Wis.	1280
WNAR	Norristown, Pa.	1110
WNAT	Natchez, Miss.	1450
WNAU	New Albany, Miss.	1470
WNAV	Annapolis, Md.	1430
WNAX	Yankton, S.Dak.	570
WNBC	New York, N.Y.	660
WNBF	Binghamton, N.Y.	1290
WNBH	New Bedford, Mass.	1340
WNBP	Newburyport, Mass.	1470
WNBS	Murray, Ky.	1340
WNBT	Wellsboro, Pa.	1490
WNBZ	Saranac Lake, N.Y.	1240
WNCA	Siler City, N.C.	1570
WNCC	Barnesboro, Pa.	950
WNCG	N. Charleston, S.C.	910
WNCO	Ashland, Ohio	1340
WNDB	Daytona Beach, Fla.	1150
WNDR	Syracuse, N.Y.	1260
WNDU	South Bend, Ind.	1490
WNEB	Worcester, Mass.	1230
WNEG	Taccoa, Ga.	630
WNER	Live Oak, Fla.	1250
WNES	Central City, Ky.	1050
WNEW	New York, N.Y.	1130
WNEX	Macon, Ga.	1400
WNGA	Nashville, Ga.	1600
WNGO	Mayfield, Ky.	1320
WNHC	New Haven, Conn.	1340
WNIA	Cheektowaga, N.Y.	1230
WNIK	Arecibo, P.R.	1230
WNIL	Niles, Mich.	1290
WNJH	Hammonton, N.J.	1580
WNJR	Newark, N.J.	1430
WNKY	Neon, Ky.	1480
WNLC	New London, Conn.	1510
WNLK	Norwalk, Conn.	1350
WNMP	Evanston, Ill.	1590
WNNC	Newton, N.C.	1230
WNNJ	Newton, N.J.	1360
WNNT	Warsaw, Va.	690
WNOE	New Orleans, La.	1060
WNOG	Naples, Fla.	1270
WNOK	Columbia, S.C.	1230
WNOO	Chattanooga, Tenn.	1260
WNOP	Newport, Ky.	740
WNOR	Norfolk, Va.	1230
WNOS	High Point, N.C.	1590
WNOW	York, Pa.	1250
WNOX	Knoxville, Tenn.	990
WNPS	New Orleans, La.	1450
WNPT	Tuscaloosa, Ala.	1280
WNPV	Lansdale, Pa.	1440
WNRG	Grundy, Va.	1250
WNRI	Woonsocket, R.I.	1380
WNRK	Newark, Del.	1260
WNRV	Narrows, Va.	990
WNSH	Highland Park, Ill.	1430
WNSL	Laurel, Miss.	1260
WNSM	Valparaiso-Niceville, Florida	1340
WNTT	Tazewell, Tenn.	1250
WNUE	Ft. Walton Beach, Fla.	950
WNUZ	Talladega, Ala.	1230
WNVA	Norton, Va.	1350
WNVL	Nicholasville, Ky.	1250
WNVY	Pensacola, Fla.	1230
WNXT	Portsmouth, Ohio	1260
WNYC	New York, N.Y.	830
WOAI	San Antonio, Tex.	1200
WOAP	Owosso, Mich.	1080
WOAY	Oak Hill, W.Va.	860
WOBS	Jacksonville, Fla.	1360
WOBT	Rhinelander, Wis.	1240
WOC	Davenport, Iowa	1420
WOCB	W. Yarmouth, Mass.	1240
WOCH	North Vernon, Ind.	1460
WOCK	Okeechobee, Fla.	1570
WODY	Bassett, Va.	900
WOHI	E. Liverpool, Ohio	1490
WOHO	Toledo, Ohio	1470
WOHP	Bellefontaine, Ohio	1390
WOHS	Shelby, N.C.	730
WOI	Ames, Iowa	640
WOIA	Saline, Mich.	1290
WOIC	Columbia, S.C.	1320
WOKA	Douglas, Ga.	1310
WOKB	Winter Garden, Fla	1600
WOKE	Charleston, S.C.	1340
WOKJ	Jackson, Miss.	1590
WOKK	Meridian, Miss.	1450
WOKO	Albany, N.Y.	1460
WOKS	Columbus, Ga.	1340
WOKW	Brockton, Mass.	1410
WOKY	Milwaukee, Wis.	920
WOKZ	Alton, Ill.	1570
WOL	Washington, D.C.	1450
WOLD	Marion, Va.	1330
WOLF	Syracuse, N.Y.	1490
WOLS	Florence, Ala.	1230
WOMI	Owensboro, Ky.	1490
WOMP	Bellaire, Ohio	1290
WOMT	Manitowoc, Wis.	1240
WONA	Winona, Miss.	1570
WOND	Pleasantville, N.J.	1400
WONE	Dayton, Ohio	980
WONN	Lakeland, Fla.	1230
WONW	Defiance, Ohio	1280
WOOD	Grand Rapids, Mich.	1300
WOOF	Dothan, Ala.	560
WOOK	Washington, D.C.	1340
WOOO	Deland, Fla.	1310
WOOW	Greenville, N.C.	1340
WOPA	Oak Park, Ill.	1490
WOPI	Bristol, Tenn.	1490
WOR	New York, N.Y.	710
WORA	Mayaguez, P.R.	760
WORC	Worcester, Mass.	1310
WORD	Spartanburg, S.C.	910
WORG	Orangeburg, S.C.	1580
WORK	York, Pa.	1350
WORL	Boston, Mass.	950
WORM	Savannah, Tenn.	1010
WORT	New Smyrna Beach, Florida	1550
WORX	Madison, Ind.	1270
WOSC	Fulton, N.Y.	1300
WOSH	Oshkosh, Wis.	1490
WOSU	Columbus, Ohio	820
WOTR	Corry, Pa.	1370
WOTT	Watertown, N.Y.	1410
WOTW	Nashua, N.H.	900
WOUB	Athens, Ohio	1340
WOVE	Welch, W.Va.	1340
WOW	Omaha, Nebr.	590
WOWE	Allegan, Mich.	1580
WOWI	New Albany, Ind.	1570
WOWL	Florence, Ala.	1240
WOWO	Ft. Wayne, Ind.	1190
WOWW	Naugatuck, Conn.	860
WOWY	Clewiston, Fla.	500d
WOXF	Oxford, N.C.	1340
WOZK	Ozark, Ala.	900
WPAB	Ponce, P.R.	550
WPAC	Patchogue, N.Y.	1580
WPAD	Paducah, Ky.	1450
WPAG	Ann Arbor, Mich.	1050
WPAL	Charleston, S.C.	730
WPAM	Pottsville, Pa.	1450
WPAP	Fernandina Beach, Florida	1570
WPAQ	Mount Airy, N.C.	740
WPAR	Parkersburg, W.Va.	1450

C.L.	Location	Kc.
WPAT	Paterson, N.J.	930
WPAX	Thomasville, Ga.	1240
WPAY	Portsmouth, Ohio	1400
WPAZ	Pottstown, Pa.	1370
WPBC	Minneapolis, Minn.	980
WPCC	Clinton, S.C.	1400
WPCF	Panama City, Fla.	1430
WPCO	Mt. Vernon, Ind.	1590
WPDM	Potsdam, N.Y.	1470
WPDQ	Jacksonville, Fla.	600
WPDR	Portage, Wis.	1350
WPDX	Clarksburg, W.Va.	750
WPEG	Winston-Salem, N.C.	1550
WPEH	Louisville, Ga.	1420
WPEL	Montrose, Pa.	1250
WPEN	Philadelphia, Pa.	950
WPEO	Peoria, Ill.	1020
WPEP	Taunton, Mass.	1570
WPET	Greensboro, N.C.	950
WPFA	Pensacola, Fla.	790
WPFB	Middletown, Ohio	910
WPFE	Eastman, Ga.	1580
WPFP	Park Falls, Wis.	1450
WPGA	Perry, Ga.	980
WPGC	Bradbury Hghts., Md.	1580
WPGW	Portland, Ind.	1440
WPHB	Philipsburg, Pa.	1260
WPIC	Sharon, Pa.	790
WPID	Piedmont, Ala.	1280
WPIK	Alexandria, Va.	730
WPIN	St. Petersburg, Fla.	680
WPIT	Pittsburgh, Pa.	730
WPKE	Pikeville, Ky.	1240
WPKO	Waverly, Ohio	1380
WPKY	Princeton, Ky.	1580
WPLA	Plant City, Fla.	910
WPLB	Greenville, Mich.	1380
WPLK	Rockmart, Ga.	1220
WPLM	Plymouth, Mass.	1390
WPLO	Atlanta, Ga.	590
WPLY	Plymouth, Wis.	1420
WPME	Punxsutawney, Pa.	1540
WPMH	Portsmouth, Va.	1010
WPMP	Pascagoula, Miss.	1580
WPNC	Plymouth, N.C.	1470
WPNF	Brevard, N.C.	1240
WPNX	Phenix City, Ala.	1460
WPOM	Pompano Beach, Fla.	1470
WPON	Pontiac, Mich.	1460
WPOP	Hartford, Conn.	1410
WPOR	Portland, Maine	1490
WPOW	New York, N.Y.	1330
WPPA	Pottsville, Pa.	1360
WPQR	McKeesport, Pa.	1360
WPRA	Mayaguez, P.R.	990
WPRC	Lincoln, Ill.	1370
WPRE	Prairie Du Chien, Wis.	980
WPRN	Butler, Ala.	1220
WPRO	Providence, R.I.	630
WPRP	Ponce, P.R.	910
WPRS	Paris, Ill.	1440
WPRT	Prestonsburg, Ky.	960
WPRW	Manassas, Va.	1460
WPRY	Perry, Fla.	1400
WPTF	Raleigh, N.C.	680
WPTR	Albany, N.Y.	1540
WPTS	Pittston, Pa.	1540
WPTW	Piqua, Ohio	1570
WPTX	Lexington Pk., Md.	920
WPUP	Gainesville, Fla.	1390
WPUV	Pulaski, Va.	1580
WPVA	Colonial Hghts., Va.	1290
WPVL	Painesville, Ohio	1460
WPYB	Benson, N.C.	1580
WQAM	Miami, Fla.	560
WQBC	Vicksburg, Miss.	1420
WQDY	Calais, Maine	1230
WQIC	Meridian, Miss.	1390
WQIK	Jacksonville, Fla.	1280
WQMN	Superior, Wis.	1320
WQMR	Silver Spring, Md.	1050
WQOK	Greenville, S.C.	1440
WQSN	Charleston, S.C.	1450
WQSR	Solvay, N.Y.	1320
WQTE	Monroe, Mich.	560
WQTY	Arlington, Fla.	1220
WQUA	Moline, Ill.	1230
WQVA	Quantico, Va.	1250
WQXI	Atlanta, Ga.	790
WQXL	Columbia, S.C.	1320
WQXQ	Ormond Bch., Fla.	1380
WQXR	New York, N.Y.	1560
WQXT	Palm Beach, Fla.	1340
WRAA	Luray, Va.	1330
WRAB	Arab, Ala.	1380
WRAC	Racine, Wis.	1460
WRAD	Radford, Va.	1460
WRAG	Carrollton, Ala.	590
WRAJ	Anna, Ill.	1440
WRAK	Williamsport, Pa.	1400
WRAL	Raleigh, N.C.	1240
WRAM	Monmouth, Ill.	1330
WRAN	Dover, N.J.	1510
WRAP	Norfolk, Va.	850
WRAW	Reading, Pa.	1340
WRAY	Princeton, Ind.	1250
WRBB	Tarpon Springs, Fla.	1470
WRBC	Jackson, Miss.	1300
WRBL	Columbus, Ga.	1420
WRC	Washington, D.C.	980
WRCD	Dalton, Ga.	1430
WRCK	Tuscumbia, Ala.	1410
WRCO	Richland, Wis.	1450
WRCS	Ahoskie, N.C.	970
WRCV	Philadelphia, Pa.	1060
WRDB	Reedsburg, Wis.	1400
WRDO	Augusta, Maine	1400
WRDW	Augusta, Ga.	1480
WREB	Holyoke, Mass.	930
WREC	Memphis, Tenn.	600
WREL	Lexington, Va.	1450
WREM	Remsen, N.Y.	1480
WREN	Topeka, Kans.	1250
WREO	Ashtabula, Ohio	970
WREV	Reidsville, N.C.	1220
WRFB	Tallahassee, Fla.	1410
WRFC	Athens, Ga.	960
WRFD	Worthington, Ohio	880
WRFS	Alexander City, Ala.	1050
WRGA	Rome, Ga.	1470
WRGM	Richmond, Va.	1590
WRGR	Starke, Fla.	1490
WRGS	Rogersville, Tenn.	1370
WRHC	Jacksonville, Fla.	1400
WRHI	Rock Hill, S.C.	1340
WRIB	Providence, R.I.	1220
WRIC	Richlands, Va.	540
WRIG	Wausau, Wis.	1400
WRIM	Pahokee, Fla.	1250
WRIP	Rossville, Ga.	980
WRIS	Roanoke, Va.	1410
WRIT	Milwaukee, Wis.	1340
WRIV	Riverhead, N.Y.	1390
WRIX	Griffin, Ga.	1410
WRIZ	Coral Gables, Fla.	1550
WRJC	Mauston, Wis.	1270
WRJN	Racine, Wis.	1400
WRJS	San German, P.R.	1090
WRJW	Picayune, Miss.	1320
WRKB	Kannapolis, N.C.	1460
WRKD	Rockland, Maine	1450
WRKH	Rockwood, Tenn.	580
WRKM	Carthage, Tenn.	1350
WRKT	Cocoa Beach, Fla.	1300
WRLA	Luray, Va.	1590
WRLD	Lanitt, Ala.	1490
WRMA	Montgomery, Ala.	950
WRMF	Titusville, Fla.	1050
WRMN	Elgin, Ill.	1410
WRMS	Beardstown, Ill.	790
WRMT	Rocky Mount, N.C.	1490
WRNB	New Bern, N.C.	1490
WRNE	Wis. Rapids, Wis.	1220
WRNL	Richmond, Va.	910
WRNY	Rome, N.Y.	1350
WROA	Gulfport, Miss.	1390
WROB	West Point, Miss.	1450
WROC	Rochester, N.Y.	1280
WROD	Daytona Beach, Fla.	1340
WROK	Rockford, Ill.	1440
WROL	Fountain City, Tenn.	1490
WROM	Rome, Ga.	710
WRON	Ronceverte, W.Va.	1400
WROS	Scottsboro, Ala.	1330
WROV	Roanoke, Va.	1240
WROW	Albany, N.Y.	590
WROX	Clarksdale, Miss.	1450
WROY	Carmi, Ill.	1460
WROZ	Evansville, Ind.	1400
WRPB	Warner Robbins, Ga.	1350
WRPM	Poplarville, Miss.	1530
WRR	Dallas, Tex.	1310
WRRR	Rockford, Ill.	1330
WRRZ	Clinton, N.C.	880
WRSA	Saratoga Sprgs., N.Y.	1280
WRSC	State College, Pa.	1390
WRSL	Stanford, Ky.	1520
WRSW	Warsaw, Ind.	1480
WRTA	Altoona, Pa.	1240
WRTL	Rantoul, Ill.	250d
WRUF	Gainesville, Fla.	850
WRUM	Rumford, Maine	790
WRUN	Utica, N.Y.	1150
WRUS	Russellville, Ky.	610
WRVA	Richmond, Va.	1140
WRVK	Mt. Vernon, Ky.	1460
WRVM	Rochester, N.Y.	680
WRWD	Augusta, Ga.	1480
WRWH	Cleveland, Ga.	1380
WRWJ	Selma, Ala.	1570
WRXO	Roxboro, N.C.	1430
WRYM	New Britain, Conn.	840
WRYT	Pittsburgh, Pa.	1250
WSAC	Fort Knox, Ky.	1470
WSAF	Sarasota, Fla.	1220
WSAI	Cincinnati, Ohio	1360
WSAJ	Grove City, Pa.	1340
WSAL	Logansport, Ind.	1230
WSAM	Saginaw, Mich.	1400
WSAN	Allentown, Pa.	1470
WSAO	Sanitobia, Miss.	1550
WSAR	Fall River, Mass.	1480
WSAT	nr. Salisbury, N.C.	1280
WSAU	Wausau, Wis.	550
WSAV	Savannah, Ga.	630
WSAY	Rochester, N.Y.	1370
WSAZ	Huntington, W.Va.	930
WSB	Atlanta, Ga.	750
WSBA	York, Pa.	910
WSBB	New Smyrna Beach, Florida	1230
WSBC	Chicago, Ill.	1240
WSBS	Gt. Barrington, Mass.	860
WSBT	South Bend, Ind.	960
WSCM	Panama City Beach, Florida	1290
WSCR	Scranton, Pa.	1320
WSDB	Homestead, Fla.	1430
WSDC	Mocksville, N.C.	1560
WSDR	Sterling, Ill.	1240
WSEB	Sebring, Fla.	1340
WSEL	Pontotoc, Miss.	1440
WSEN	Baldwinsville, N.Y.	1050
WSER	Elkton, Md.	1550
WSET	Glen Falls, N.Y.	1410
WSEV	Sevierville, Tenn.	930
WSFB	Quitman, Ga.	1490
WSFC	Somerset, Ky.	1240
WSFR	Sanford, Fla.	1360
WSFT	Thomaston, Ga.	1220
WSGA	Savannah, Ga.	1400
WSGC	Elberton, Ga.	1400
WSGN	Birmingham, Ala.	610
WSGO	Oswego, N.Y.	1440
WSGW	Saginaw, Mich.	790
WSHF	Sheffield, Ala.	1290
WSHN	Fremont, Mich.	1550
WSHO	New Orleans, La.	1230
WSHP	Shippenburg, Pa.	1480
WSIB	Beaufort, S.C.	1490
WSIC	Statesville, N.C.	1400
WSID	Baltimore, Md.	1010
WSIG	Mount Jackson, Va.	790
WSIM	Prichard, Ala.	1270
WSIP	Paintsville, Ky.	1490
WSIR	Winter Haven, Fla.	1490
WSIV	Pekin, Ill.	1140
WSIX	Nashville, Tenn.	980
WSJC	Magee, Miss.	1280
WSJM	St. Joseph, Mich.	1400
WSJS	Winston-Salem, N.C.	600
WSKI	Montpelier-Barre, Vt.	1240
WSKP	Miami, Fla.	1450
WSKT	Colonial Village, Tennessee	1580
WSKY	Asheville, N.C.	1230
WSLB	Ogdensburg, N.Y.	1400
WSLG	Clermont, Fla.	1340
WSLI	Jackson, Miss.	930
WSLM	Salem, Ind.	1220
WSLS	Roanoke, Va.	610
WSM	Nashville, Tenn.	650
WSMA	Smyrna, Ga.	1550
WSMB	New Orleans, La.	1350
WSME	Sanford, Maine	1220
WSMG	Greenville, Tenn.	1450
WSMI	Litchfield, Ill.	1540
WSMN	Nashua, N.H.	1590
WSMT	Sparta, Tenn.	1050
WSNE	Cummings, Ga.	1410
WSNJ	nr. Bridgeton, N.J.	1240
WSNO	Barre, Vt.	1450
WSNT	Sandersville, Ga.	1490
WSNW	Seneca Twnshp., S.C.	1150
WSNY	Schenectady, N.Y.	1240
WSOC	Charlotte, N.C.	930
WSOK	Savannah, Ga.	1230
WSOL	Tampa, Fla.	1300
WSON	Henderson, Ky.	860
WSOO	Slt. Ste. Marie, Mich.	1230
WSOQ	No. Syracuse, N.Y.	1220
WSOR	Windsor, Conn.	1480
WSOY	Decatur, Ill.	1340
WSPA	Spartanburg, S.C.	950
WSPB	Sarasota, Fla.	1450
WSPD	Toledo, Ohio	1370
WSPN	Saratoga Sprgs., N.Y.	900
WSPR	Springfield, Mass.	1270
WSPT	Stevens Pt., Wis.	1010
WSPZ	Spencer, W.Va.	1400
WSRA	Milton, Fla.	1490
WSRC	Durham, N.C.	1410
WSRO	Marlborough, Mass.	1470
WSRW	Hillsboro, Ohio	1590
WSSB	Durham, N.C.	1490
WSSC	Sumter, S.C.	1340
WSSO	Starkville, Miss.	1230
WSSV	Petersburg, Va.	1240
WSTC	Stamford, Conn.	1400
WSTK	Woodstock, Va.	1230
WSTL	Eminence, Ky.	1600
WSTP	Salisbury, N.C.	1490
WSTR	Sturgis, Mich.	1230
WSTS	Massena, N.Y.	1050
WSTU	Suart, Fla.	1450
WSTV	Steubenville, Ohio	1340
WSUB	Groton, Conn.	980
WSUH	Oxford, Miss.	1420
WSUI	Iowa City, Iowa	910
WSUN	St. Petersburg, Fla.	620
WSUX	Seaford, Del.	1280
WSUZ	Palatka, Fla.	800
WSVA	Harrisonburg, Va.	550
WSVL	Shelbyville, Ind.	1520
WSVN	Valdese, N.C.	1490
WSVS	Crewe, Va.	800
WSWN	Belle Glade, Fla.	900
WSWV	Pennington Gap, Va.	1570
WSWW	Platteville, Wis.	1590
WSYB	Rutland, Vt.	1380
WSYD	Mt. Airy, N.C.	1300
WSYL	Sylvania, Ga.	1490
WSYR	Syracuse, N.Y.	570
WTAB	Tabor City, N.C.	1370
WTAC	Flint, Mich.	600
WTAD	Quincy, Ill.	930
WTAG	Worcester, Mass.	580
WTAL	Tallahassee, Fla.	1270
WTAN	Clearwater, Fla.	1340
WTAO	Cambridge, Mass.	740
WTAP	Parkersburg, W.Va.	1230
WTAQ	LaGrange, Ill.	1300
WTAR	Norfolk, Va.	790
WTAW	Bryan, Tex.	1150
WTAX	Springfield, Ill.	1240
WTAY	Robinson, Ill.	1570
WTBC	Tuscaloosa, Ala.	1230
WTBF	Troy, Ala.	970
WTBO	Cumberland, Md.	1450
WTCB	Flomaton, Ala.	990
WTCH	Shawano, Wis.	960
WTCJ	Tell City, Ind.	1230
WTCM	Traverse City, Mich.	1400
WTCN	Minneapolis, Minn.	1280
WTCO	Campbellsville, Ky.	1450
WTCR	Ashland, Ky.	1420
WTCS	Fairmont, W.Va.	1490
WTCW	Whitesburg, Ky.	920
WTEL	Philadelphia, Pa.	860
WTGA	Thomaston, Ga.	1590
WTGR	Charleston, W.Va.	1490
WTHG	Jackson, Ala.	1290
WTHI	Terre Haute, Ind.	1480
WTHM	Lapeer, Mich.	1530
WTHR	Panama City, Fla.	1480
WTHT	Hazleton, Pa.	1300
WTIC	Hartford, Conn.	1080
WTID	Newport News, Va.	1270
WTIF	Tifton, Ga.	1340
WTIG	Massillon, Ohio	900
WTIK	Durham, N.C.	1310
WTIL	Mayaguez, P.R.	1300
WTIM	Taylorville, Ill.	1410
WTIP	Charleston, W.Va.	1240
WTIX	New Orleans, La.	690
WTJH	East Point, Ga.	1260
WTJS	Jackson, Tenn.	1390
WTKM	Hartford, Wis.	1540
WTKO	Ithaca, N.Y.	1470
WTKY	Tompkinsville, Ky.	1370
WTLB	Utica, N.Y.	1310
WTLK	Taylorsville, N.C.	1570
WTLO	Somerset, Ky.	1480
WTLS	Tallasee, Ala.	1300
WTMA	Charleston, S.C.	1250
WTMB	Tomah, Wis.	1390
WTMC	Ocala, Fla.	1290
WTMJ	Milwaukee, Wis.	620
WTMP	Tampa, Fla.	1150
WTMT	Louisville, Ky.	620
WTNC	Thomasville, N.C.	790
WTND	Orangeburg, S.C.	920
WTNS	Coshocton, Ohio	1560
WTNT	Tallahassee, Fla.	1450
WTOB	Winston-Salem, N.C.	1380
WTOC	Savannah, Ga.	1290
WTOD	Toledo, Ohio	1560
WTOE	Spruce Pine, N.C.	1470
WTOJ	Tomah, Wis.	1460
WTOL	Toledo, Ohio	1230
WTON	Staunton, Va.	1240
WTOP	Washington, D.C.	1500
WTOR	Torrington, Conn.	1490
WTOT	Marianna, Fla.	980
WTPI	Cookville, Tenn.	1550
WTPR	Paris, Tenn.	710
WTRA	Latrobe, Pa.	1480
WTRB	Ripley, Tenn.	1570
WTRC	Elkhart, Ind.	1340
WTRL	Bradenton, Fla.	1490
WTRN	Tyrone, Pa.	1340
WTRO	Dyersburg, Tenn.	1330
WTRP	LaGrange, Ga.	620
WTRR	Sanford, Fla.	1400
WTRU	Muskegon, Mich.	1600
WTRW	Two Rivers, Wis.	1590
WTRX	Flint, Mich.	1330
WTRY	Troy, N.Y.	980
WTSA	Brattleboro, Vt.	1450
WTSB	Lumberton, N.C.	1340
WTSL	Hanover-Lebanon, New Hampshire	1400
WTSN	Dover, N.H.	1270
WTSV	Claremont, N.H.	1230
WTTB	Vero Beach, Fla.	1490
WTTC	Towanda, Pa.	1550
WTTF	Tiffin, Ohio	1600
WTTH	Port Huron, Mich.	1380
WTTL	Madisonville, Ky.	1310
WTTM	Trenton, N.J.	920
WTTN	Watertown, Wis.	1580
WTTR	Westminster, Md.	1470
WTTS	Bloomington, Ind.	1370
WTUF	Mobile, Ala.	840
WTUG	Tuscaloosa, Ala.	790
WTUP	Tupelo, Miss.	1490
WTUX	Wilmington, Del.	1290
WTVB	Coldwater, Mich.	1590
WTVL	Waterville, Maine	1490
WTVN	Columbus, Ohio	610
WTWA	Thomson, Ga.	1240
WTWB	Auburndale, Fla.	1570
WTWN	St. Johnsbury, Vt.	1340
WTXL	W. Spgfd., Mass.	1490
WTYC	Rock Hill, S.C.	1150
WTYM	East Longmeadow, Mass.	1600
WTYN	Tryon, N.C.	1550
WTYS	Marianna, Fla.	1340
WUFD	Amherst, N.Y.	1080
WULA	Eufaula, Ala.	1240
WUNE	Baton Rouge, La.	1550
WUNO	Rio Piedras, P.R.	1320
WUNS	Lewisburg, Pa.	1010
WUSJ	Lockport, N.Y.	1340
WUSM	Havelock, N.C.	1330
WUST	Bethesda, Md.	1120
WVAL	Sauk Rapids, Minn.	800
WVAM	Altoona, Pa.	1430
WVAR	Richwood, W.Va.	1280
WVCG	Coral Gables, Fla.	1070
WVCH	Chester, Pa.	740
WVEC	Hampton, Va.	1490
WVGT	Mt. Dora, Fla.	1580
WVIM	Vicksburg, Miss.	1490
WVIP	Mt. Kisco, N.Y.	1310
WVJP	Caguas, P.R.	1110
WVJS	Owensboro, Ky.	1420
WVKO	Columbus, Ohio	1580
WVLD	Valdosta, Ga.	1450

C.L.	Location	Kc.
WVLK	Lexington, Ky.	590
WVLN	Olney, Ill.	740
WVMC	Mt. Carmel, Ill.	1360
WVMI	Biloxi, Miss.	570
WVNA	Tuscumbia, Ala.	1590
WVNJ	Newark, N.J.	620
WVOE	Chadburn, N.C.	1590
WVOH	Hazelhurst, Ga.	920
WVOK	Birmingham, Ala.	690
WVOL	Berry Hill, Tenn.	1470
WVOM	Iuka, Miss.	1270
WVOP	Vidalia, Ga.	970
WVOS	Liberty, N.Y.	1240
WVOT	Wilson, N.C.	1420
WVOX	New Rochelle, N.Y.	1460
WVPO	Stroudsburg, Pa.	840
WVSC	Somerset, Pa.	990
WVVW	Grafton, W.Va.	1260
WWBC	Bay City, Mich.	1250
WWBD	Bamberg, S.C.	790
WWBZ	Vineland, N.J.	1360
WWCA	Gary, Ind.	1270
WWCC	Bremen, Ga.	1440
WWCH	Clarion, Pa.	1300
WWCO	Waterbury, Conn.	1240
WWDC	Washington, D.C.	1260
WWGP	Sanford, N.C.	1050
WWGS	Tifton, Ga.	1430
WWHG	Hornell, N.Y.	1320
WWHY	Huntington, W.Va.	1470
WWIL	Ft. Lauderdale, Fla.	1580
WWIN	Baltimore, Md.	1400
WWIS	Black River Falls, Wis.	1260
WWIT	Canton, N.C.	970
WWIZ	Lorain, Ohio	1380
WWJ	Detroit, Mich.	950
WWJB	Brooksville, Fla.	1450
WWKY	Winchester, Ky.	1380
WWL	New Orleans, La.	870
WWML	Portage, Wis.	1470
WWNC	Asheville, N.C.	570
WWNH	Rochester, N.H.	930
WWNR	Beckley, W.Va.	620
WWNS	Statesboro, Ga.	1240
WWNY	Watertown, N.Y.	790
WWOD	Lynchburg, Va.	1390
WWOK	Charlotte, N.C.	1480
WWOL	Buffalo, N.Y.	1120
WWOM	New Orleans, La.	600
WWON	Woonsocket, R.I.	1240
WWOW	Conneaut, Ohio	1360
WWPA	Williamsport, Pa.	1340
WWPF	Palatka, Fla.	1260
WWRI	W. Warwick, R.I.	1450
WWRJ	White River Junc., Vt.	910
WWRL	Woodside, N.Y.	1600
WWRO	Caro, Mich.	1360
WWSC	Glens Falls, N.Y.	1450
WWSR	St. Albans, Vt.	1420
WWST	Wooster, Ohio	960
WWSW	Pittsburgh, Pa.	970
WWVA	Wheeling, W.Va.	1170
WWWB	Jasper, Ala.	1360
WWWF	Fayette, Ala.	990
WWWR	Russellville, Ala.	920
WWWW	Rio Piedras, P.R.	1520
WWXL	Manchester, Ky.	1450
WWYN	Erie, Pa.	1260
WWYO	Pineville, W.Va.	970
WXAL	Demopolis, Ala.	1400
WXGI	Richmond, Va.	950
WXIG	Windemere, Fla.	1480
WXLI	Dublin, Ga.	1230
WXLL	Big Delta, Alaska	980
WXLW	Indianapolis, Ind.	950
WXMT	Merrill, Wis.	730
WXOK	Baton Rouge, La.	1260
WXRF	Guayama, P.R.	1590
WXTN	Lexington, Miss.	1150
WXTR	Pawtucket, R.I.	550
WXVA	Charleston, W.Va.	1550
WXVW	Jeffersonville, Ind.	1450
WXXX	Hattiesburg, Miss.	1310
WXYJ	Jamestown, N.Y.	1340
WXYZ	Detroit, Mich.	1270
WYAL	Scotland Neck, N.C.	1280
WYAM	Bessemer, Ala.	1450
WYCL	York, S.C.	1580
WYDE	Birmingham, Ala.	850
WYGO	Corbin, Ky.	1330
WYHE	Bristol, Tenn.	1550
WYLD	New Orleans, La.	940
WYMB	Manning, S.C.	1410
WYND	Sarasota, Fla.	1280
WYNG	Warwick-East Greenwich, R.I.	1590
WYNK	Baton Rouge, La.	1380
WYNN	Florence, S.C.	540
WYNR	Chicago, Ill.	1390
WYNZ	Ypsilanti, Mich.	1520
WYOU	Tampa, Fla.	1550
WYPR	Danville, Va.	970
WYRE	Pittsburgh, Pa.	1080
WYRN	Louisburg, N.C.	1480
WYSE	Lakeland, Fla.	1330
WYSH	Clinton, Tenn.	1380
WYSI	Ypsilanti, Mich.	1480
WYSL	Buffalo, N.Y.	1400
WYSR	Franklin, Va.	1250
WYTH	Madison, Ga.	1250
WYTI	Rocky Mount, Va.	1570
WYVE	Wytheville, Va.	1280
WYZE	Atlanta, Ga.	1480
WZEP	DeFuniak Sprgs., Fla.	1460
WZKY	Albemarle, N.C.	1580
WZOB	Ft. Payne, Ala.	1250
WZOE	Princeton, Ill.	1490
WZOK	Jacksonville, Fla.	1320
WZOO	Spartanburg, S.C.	1400
WZRH	Zephyr Hills, Fla.	1400
WZRO	Jacksonville Beach, Florida	1010
WZYX	Cowan, Tenn.	1440

Canadian AM Stations By Call Letters

C.L.	Location	Kc.
CBA	Sackville, N.B.	1070
CBAF	Moncton, N.B.	1300
CBE	Windsor, Ont.	1550
CBF	Montreal, Que.	690
CBG	Gander, Nfld.	1450
CBH	Halifax, N.S.	790
CBI	Sydney, N.S.	1140
CBJ	Chicoutimi, Que.	1580
CBK	Regina, Sask.	540
CBL	Toronto, Ont.	740
CBM	Montreal, Que.	940
CBN	St. John's, Nfld.	640
CBO	Ottawa, Ont.	910
CBT	Grand Falls, Nfld.	990
CBU	Vancouver, B.C.	690
CBV	Quebec, Que.	980
CBW	Winnipeg, Man.	990
CBX	Edmonton, Alta.	1010
CBXA	Edmonton, Alta.	740
CBY	Corner Brook, Nfld.	990
CFAB	Windsor, N.S.	1450
CFAC	Calgary, Alta.	960
CFAM	Altona, Man.	1290
CFAR	Flin Flon, Man.	590
CFAX	Victoria, B.C.	870
CFBC	Saint John, N.B.	930
CFBM	Brochet, Man.	1450
CFBR	Sudbury, Ont.	550
CFCB	Corner Book, Nfld.	570
CFCF	Montreal, Que.	600
CFCH	North Bay, Ont.	600
CFCL	Timmins, Ont.	620
CFCN	Calgary, Alta.	1060
CFCO	Chatham, Ont.	630
CFCP	Courtenay, B.C.	1440
CFCW	Camrose, Alta.	790
CFCY	Charlottetown, P.E.I.	630
CFDA	Victoriaville, Que.	1380
CFGB	Goose Bay, Nfld.	1340
CFGM	Richmond Hill, Ont.	1310
CFGP	Grande Prairie, Alta.	1050
CFGR	Gravelbourg, Sask.	1230
CFGT	St. Joseph d'Alma, Que.	1270
CFJC	Kamloops, B.C.	910
CFJR	Brockville, Ont.	1450
CFKL	Schefferville, Que.	1230
CFLM	LaTuque, Que.	1240
CFML	Cornwall, Ont.	1110
CFNB	Fredericton, N.B.	550
CFNS	Saskatoon, Sask.	1170
CFNW	Norman Wells, Northwest Territory	1240
CFOB	Fort Frances, Ont.	800
CFOR	Orillia, Ont.	1570
CFOS	Owen Sound, Ont.	560
CFOX	Pointe Claire, Que.	1470
CFPA	Port Arthur, Ont.	1230
CFPL	London, Ont.	980
CFPR	Prince Rupert, B.C.	1240
CFQC	Saskatoon, Sask.	600
CFRA	Ottawa, Ont.	560
CFRB	Toronto, Ont.	1010
CFRC	Kingston, Ont.	1490
CFRG	Gravelbourg, Sask.	710
CFRN	Edmonton, Alta.	1260
CFRS	Simcoe, Ont.	1560
CFRY	Portage la Prairie, Man.	920
CFSL	Weyburn, Sask.	1340
CFTK	Terrace, B.C.	590
CFUN	Vancouver, B.C.	1410
CFWH	Whitehorse, Yukon T.	570
CFYK	Yellowknife, N.W.T.	1340
CFYT	Dawson, Yukon T.	1230
CHAB	Moose Jaw, Sask.	800
CHAD	Amos, Que.	1340
CHAT	Medicine Hat, Alta.	1270
CHCM	Marystown Nfld.	560
CHEC	Lethbridge, Alta.	1090
CHED	Edmonton, Alta.	630
CHEF	Granby, Que.	1450
CHEX	Peterborough, Ont.	980
CHFA	Edmonton, Alta.	680
CHFC	Churchill, Man.	1230
CHFI	Toronto, Ont.	1540
CHGB	St. Anne de la Pocatiere, Que.	1350
CHIC	Brampton, Ont.	1090
CHIQ	Hamilton, Ont.	1280
CHLC	Havterive, Que.	580
CHLN	Three Rivers, Que.	550
CHLO	St. Thomas, Ont.	680
CHLP	Montreal, Que.	1410
CHLT	Sherbrooke, Que.	630
CHML	Hamilton, Ont.	900
CHNC	New Carlisle, Que.	610
CHNO	Sudbury, Ont.	900
CHNS	Halifax, N.S.	960
CHOK	Sarnia, Ont.	1070
CHOV	Pembroke, Ont.	1350
CHOW	Welland, Ontario	1470
CHQM	Vancouver, BC.	1320
CHRC	Quebec, Que.	800
CHRD	Drummondville, Que.	1340
CHRL	Roberval, Que.	910
CHRS	St. Jean, Que.	1090
CHSJ	Saint John, N.B.	1150
CHUB	Nanaimo, B.C.	1570
CHUC	Port Hope, Ont.	1500
CHUM	Toronto, Ont.	1050
CHVC	Niagara Falls, Ont.	1600
CHWK	Chilliwack, B.C.	1270
CHWO	Oakville, Ont.	1250
CJAD	Montreal, Que.	800
CJAF	Cabano, Que.	1340
CJAT	Trail, B.C.	610
CJAV	Port Alberni, B.C.	1240
CJBC	Toronto, Ont.	860
CJBQ	Belleville, Ont.	800
CJBR	Rimouski, Que.	900
CJCA	Edmonton, Alta.	930
CJCB	Sydney, N.S.	1270
CJCH	Halifax, N.S.	920
CJCJ	Woodstock, N.B.	920
CJCS	Stratford, Ont.	1240
CJDC	Dawson Creek, B.C.	560
CJEM	Edmundston, N.B.	570
CJET	Smiths Falls, Ont.	630
CJFP	Riviere du Loup, Que.	1400
CJFX	Antigonish, N.S.	580
CJGX	Yorkton, Sask.	940
CJIB	Vernon, B.C.	940
CJIC	Sault Ste. Marie, Ont.	1050
CJJC	Langley Prairie, B.C.	850
CJKL	Kirkland Lake, Ont.	560
CJLM	Joliette, Que.	1350
CJLR	Quebec, Que.	1060
CJLS	Yarmouth, N. S.	1340
CJLX	Ft. Williams, Ont.	800
CJME	Regina, Sask.	1300
CJMS	Montreal, Que.	1280
CJMT	Chicoutimi, Que.	1420
CJNB	N. Battleford, Sask.	1460
CJNR	Blind River, Ont.	730
CJOB	Winnipeg, Man.	680
CJOC	Lethbridge, Alta.	1220
CJON	St. John's, Nfld.	930
CJOR	Vancouver, B.C.	600
CJOY	Guelph, Ont.	1460
CJQC	Quebec, Que.	1340
CJRH	Richmond Hill, Ont.	1310
CJRL	Kenora, Ont.	1220
CJRW	Summerside, P.E.I.	1240
CJSO	Sorel, Que.	1320
CJSP	Leamington, Ont.	710
CJSS	Cornwall, Ont.	1220
CJVI	Victoria, B.C.	900
CKAC	Montreal, Que.	730
CKAD	Wilmot Station, N.S.	1490
CKAR	Huntsville, Ont.	590
CKAR-1	Parry Sound, Ont.	1340
CKBB	Barrie, Ont.	950
CKBI	Prince Albert, Sask.	900
CKBL	Matane, Que.	1250
CKBM	Montmagny, Que.	1490
CKBS	St. Hyacinthe, Que.	1240
CKBW	Bridgewater, N.S.	1000
CKCH	Hull, Que.	970
CKCK	Regina, Sask.	620
CKCL	Truro, N.S.	600
CKCN	Seven Iles, Que.	560
CKCQ	Quesnel, B.C.	570
CKCQ-1	Williams Lake, B.C.	1240
CKCR	Kitchener, Ont.	1490
CKCV	Quebec, Que.	1280
CKCW	Moncton, N.B.	1220
CKCY	Sault Ste. Marie, Ont.	920
CKDA	Victoria, B.C.	1220
CKDH	Amherst, N.S.	1400
CKDM	Dauphin, Man.	730
CKEC	New Glasgow, N.S.	1320
CKEK	Cranbrook, B.C.	570
CKEN	Kentville, N.S.	1350
CKEY	Toronto, Ont.	580
CKFH	Toronto, Ont.	1430
CKGB	Timmins, Ont.	680
CKGM	Montreal, Que.	980
CKGR	Galt, Ont.	1110
CKJL	St. Jerome, Que.	900
CKKW	Kitchener, Ont.	1320
CKLB	Oshawa, Ont.	1350
CKLC	Kingston, Ont.	1380
CKLD	Thetford Mines, Que.	1230
CKLG	N. Vancouver, B.C.	730
CKLM	Montreal, Que.	1570
CKLN	Nelson, B.C.	1390
CKLS	LaSarre, Que.	1240
CKLW	Windsor, Ont.	800
CKLY	Lindsay, Ont.	910
CKML	Mont Laurier, Que.	610
CKMP	Midland, Ont.	1230
CKMR	Newcastle, N.B.	790
CKNB	Campbellton, N.B.	950
CKNL	Ft. St. John, B.C.	970
CKNW	New Westminster, British Columbia	980
CKNX	Wingham, Ont.	920
CKOC	Hamilton, Ont.	1150
CKOK	Penticton, B.C.	800
CKOM	Saskatoon, Sask.	1250
CKOT	Tillsonburg, Ont.	1510
CKOV	Kelowna, B.C.	630
CKOX	Woodstock, Ont.	1340
CKOY	Ottawa, Ont.	1310
CKPC	Brantford, Ont.	1380
CKPG	Prince George, B.C.	550
CKPR	Fort William, Ont.	580
CKPT	Peterborough, Ont.	1420
CKRB	Ville St. Georges, Que.	1460
CKRC	Winnipeg, Man.	630
CKRD	Red Deer, Alta.	850
CKRM	Regina, Sask.	980
CKRN	Rouyn, Que.	1400
CKRS	Jonquiere, Que.	590
CKSA	Lloydminster, Alta.	1150
CKSB	St. Boniface, Man.	1050
CKSL	London, Ont.	1290
CKSM	Shawinigan, Quebec	1220
CKSO	Sudbury, Ont.	790
CKSW	Swift Current, Sask.	1400
CKTB	St. Catharines, Ont.	610
CKTR	Three Rivers, Que.	1150
CKTS	Sherbrooke, Que.	900
CKUA	Edmonton, Alta.	580
CKVD	Val d'Or, Que.	1230
CKVL	Verdun, Que.	850
CKVM	Ville Marie, Que.	710
CKWS	Kingston, Ont.	960
CKWX	Vancouver, B.C.	1130
CKX	Brandon, Man.	1150
CKXL	Calgary, Alta.	1140
CKY	Winnipeg, Man.	580
CKYL	Peace River, Alta.	610
VOAR	St. John's, Nfld.	1230
VOCM	St. John's, Nfld.	590
VOWR	St. John's, Nfld.	800

Mexican and Cuban AM Stations

Mexican stations audible in the Southwest; the more powerful Cuban stations

Mexico

BAJA CALIFORNIA

Location	C.L.	Kc.	W.P.
Cuervos	XEDY	1460	1000
El Saugal	XEDX	1010	500
Ensenada	XEPF	1400	250
	XEXK	920	250
Mexicali	XED	1050	5000
	XEAA	1340	250
	XEAO	910	250
	XECL	990	5000
	XEGE	1150	1000
Tijuana	XEC	1310	250
	XETRA	690	50000
	XEAU	1470	5000
	XEAZ	1270	500
	XEBG	1550	1000
	XEGM	950	2500
	XEMO	860	5000
	XEXX	1420	2000

CHIHUAHUA

Location	C.L.	Kc.	W.P.
Chihuahua	XEM	1390	500
	XEBU	620	1000
	XEBW	1280	1000
	XEFI	580	1000
	XERA	1490	250
Ciudad Camargo			
	XEHA	580	1000
Ciudad Delicias			
	XEBN	1240	250
	XEJK	1340	250
Ciudad Juarez	XEF	1420	250
	XEJ	970	5000
	XEP	1300	500
	XEFV	1240	250
	XELO	800	150000
	XEWG	1490	250
	XEYC	1460	1000
Hidalgo	XEJS	1150	500
N. Casas Grandes			
	XETX	1010	250

COAHUILA

Location	C.L.	Kc.	W.P.
iudad Acuna	XEKD	1010	1000
onclova	XEMF	1260	250
iedras Negras	XEMJ	920	1000
	XEMU	580	5000
Sabinas	XEBX	610	5000
Saltillo	XESJ	1250	500
	XESG	1510	1000
Torreon	XEBP	1310	5000
Villa Acuna	XEDH	1340	250
	XERF	1570	250000

DISTRITO FEDERAL

Location	C.L.	Kc.	W.P.
Mexico City	XEB	1220	100000
	XEDF	970	10000
	XEL	1260	5000
	XEN	690	20000
	XEQ	940	150000
	XEW	900	250000
	XEX	730	500000
	XEFR	1530	5000
	XEJP	1150	10000
	XELA	830	10000
	XELZ	1440	5000
	XEMX	1380	5000
	XENK	620	5000
	XEOY	1000	50000
	XEPH	590	5000
	XEQK	1350	1000
	XEQR	1030	10000
	XERC	790	1000
	XERG	690	250
	XERCN	1110	50000
	XERH	1500	50000
	XERPM	660	10000
	XESM	1470	10000
	XEUN	860	5000

DURANGO

Location	C.L.	Kc.	W.P.
Durango	XEDU	860	1000

NUEVO LEON

Location	C.L.	Kc.	W.P.
Linares	XER	1260	250
Monterrey	XEG	1050	150000
	XENL	860	5000
	XEH	1420	1000
	XET	990	5000
	XEAR	570	1000
	XEAW	1280	1000
	XEFB	630	5000
	XEMR	1370	500
	XEOK	920	500

SAN LUIS POTOSI

Location	C.L.	Kc.	W.P.
San Luis Potosi	XEWA	540	150000

SONORA

Location	C.L.	Kc.	W.P.
Agua Prieta	XEAQ	1490	250
	XEFH	1310	1000
Cananea	XEFQ	980	500
Ciudad Obregon	XEOX	1430	1000
Hermosillo	XEBH	920	5000
	XEDL	1250	500
	XEDM	1580	50000
	XEHQ	590	500
Magdalena	XEDJ	1450	100
Naco	XETM	1350	1000
Nogales	XEHF	1370	5000
San Luis	XECB	1450	250
Santa Ana	XEAB	1400	250

TAMAULIPAS

Location	C.L.	Kc.	W.P.
Cuidad Miquel	XEHI	1470	500
Aleman	XEWD	1430	2000
Cuidad Camargo	XEZD	1400	250
Matamoros	XEO	970	1000
	XEAM	1310	250
	XEMS	1490	250
	XEMT	1340	250
Nuevo Laredo	XEAS	1410	250
	XEBK	1340	100
	XEDF	790	1000
	XEFE	790	1000
	XEK	960	5000
	XEWL	1090	2500
	XEXD	1370	50000
Reynosa	XEOR	1390	1000
	XERI	810	500
	XERT	590	5000
Rio Brava	XEOQ	1110	1000
Rio Bravo	XEFD	1170	1000
Tampico	XEFW	810	50000
Valle Hermosa	XEVI	1450	1000

Cuba

Location	C.L.	Kc.	W.P.
Camaguey	CMJB	880	1000
	CMJL	920	5000
	CMJN	960	1000
	CMJE	680	1000
	CMFA	1110	1000
	CMJR	1030	1000
	CMJC	1000	1000
	CMJF	1340	1000
Camajuani	CMHD	890	1000
Ciego de Avila	CMJY	760	1000
	CMJT	700	1000
	CMSS	800	1000
	CMJV	900	1000
Cienfuegos	CMHN	680	1000
Consulacion Del Sur		880	1000
Cruces	CMAK	1210	1000
Guantanamo	CMKS	1070	1000
Habana	CMW	590	2500
	CMCY	550	15000
	CMQ	630	25000
	CMCU	660	1000
	CMBC	690	50000
	CMCD	760	10000
	CMCH	790	10000
	CMBZ	630	5000
	CMBL	660	15000
	CMCF	910	10000
	CMBF	950	5000
	CMCK	980	5000
	CMBQ	1010	5000
	CMCX	1060	10000
	CMCA	730	10000
	CMCB	1330	1000
Holguin	CMKJ	730	5000
	CMKP	670	1000
Holguin Orte	CMKM	560	5000
	CMKV	600	1000
	CMKD	970	1000
	CMDC	770	1000
Marianao	CMZ	1560	5000
Neuvitas	CMJO	1300	1000
Pinar del Rio	CMAB	740	5000
	CMAF	680	1000
	CMAN	840	1000
	CMAQ	920	1000
Sagua La Grande	CMHA	1280	1000
Santa Clara	CMHI	570	10000
	CMHG	670	1000
	CMHC	1410	1000
	CMHQ	840	15000
	CMHW	810	1000
	CMHO	1310	1000
	CMHM	1130	1000
Sancti Spiritus	CMHT	990	1000
Santiago	CMDA	1320	1000
	CMKC	770	1000
	CMDB	680	1000
	CMKL	800	2000
	CMKW	1000	2000
	CMKR	1090	1000
	CMKU	630	2000
	CMDL	1150	1000
	CMKN	930	1000
	CMKB	1170	1000
Victoria de las Tunas	CMDQ	840	1000
	CMKT	1520	1000

U. S. FM Stations by States

Abbreviations: Mc., megacycles; asterisk (*) indicates educational station

ALABAMA

Location	C.L.	Mc.
Albertville	WAVU-FM	105.1
Alexander City	WRFS-FM	106.1
Andalusia	WCTA-FM	98.1
Anniston	WHMA-FM	100.5
Athens	WJDF	104.3
Birmingham	WAPI-FM	99.5
	WBRC-FM	106.9
	WSFM	93.7
Clanton	WKLF-FM	100.9
Cullman	WFMH-FM	101.1
Decatur	WHOS-FM	102.1
Homewood	WJLN	104.7
Huntsville	WAHR	99.1
	WNDA	92.9
Mobile	WKRG-FM	99.9
Montgomery	WAJM	103.3
	WFMI	98.9
Sylacauga	WMLS-FM	98.3
Tuscumbia	WVNA	100.3
Tuscaloosa	WTBD-FM	95.7
	WUOA	*91.7

ALASKA

Location	C.L.	Mc.
Anchorage	KNIK	105.5
	KBYR-FM	102.1

ARIZONA

Location	C.L.	Mc.
Globe	KWJB-FM	100.3
Mesa	KBUZ-FM	104.7
Phoenix	KELE	95.5
	KFCA	*88.5
	KDDL-FM	94.5
	KITH	101.3
	KDY-FM	92.5
	KPHD-FM	96.9
	KTAR-FM	98.7
	KYEW	93.3
Sun City	KTPM	106.3
Tempe	KUPD-FM	97.9
Tucson	KFMM	99.5
	KSDM	92.1

ARKANSAS

Location	C.L.	Mc.
Blytheville	KLCN-FM	96.1
Ft. Smith	KFPW-FM	94.9
Jonesboro	KBTM-FM	101.9
	KASU	91.9
Little Rock	KARK	103.7
Mammoth Springs	KAMS	103.9
Osceola	KOSE-FM	98.1
Pine Bluff	KDTN-FM	92.3
Siloam Springs	KUDA-FM	105.7

CALIFORNIA

Location	C.L.	Mc.
Alameda	KJAZ	92.7
Anaheim	KEZR-FM	95.9
Arcata	KTDD	*90.5
Atherton	KPEN	101.3
Auburn	KAFI	101.1
Avalon	KBIQ	104.3
Bakersfield	KERN-FM	94.1
	KQXR	101.5
Berkeley	KPFA	94.1
	KPFB	*89.3
	KRE-FM	102.9
Bijou	KHUR	99.9
Claremont	KSPC	*88.9
Coachella	KCHQ-FM	93.7
El Cajon	KUFM	93.3
Eureka	KIEM	96.3
Fresno	KARM-FM	101.9
	KCIB-FM	94.5
	KMJ-FM	97.9
	KRFM	93.7
	KXQR	102.7
Garden Grove	KGGK	94.3
Glendale	KFMU	97.1
	KUTE	101.9
Hayward	KBBM	101.7
Inglewood	KTYM-FM	103.9
LaSierra	KSDA	*89.7
Lodi	KCVR-FM	97.7
Long Beach	KFOX-FM	102.3
	KLON	*88.1
	KNDB	97.9
Los Altos	KPGM	97.7
Los Angeles	KABC-FM	95.5
	KBBI	107.5
	KBCA	105.1
	KBMS	105.9
	KCBH	98.7
	KFAC-FM	92.3
	KFMU	
	KGLA	*103.5
	KHJ	101.1
	KMLA	100.3
	KNX-FM	93.1
	KPFK	*90.7
	KPOL-FM	93.9
	KRHM	94.7
	KRKD-FM	96.3
	KLAC-FM	102.7
	KUSC	*91.5
	KXLU	*88.7
	KHOF	99.5
Marysville	KMYC-FM	99.9
Modesto	KBEE-FM	103.3
	KTRB-FM	104.1
Monterey	KHFR	96.9
Mountain View	KFJC	*88.5
Newport Beach	KNBB	103.1
Oakland	KAFE	98.1
Oceanside	KUDE	102.1
Ontario	KASK-FM	93.5
Oxnard	KAAR	104.7
Pasadena	KPCS	89.3
	KPPC-FM	106.7
Redondo Beach	KAPP	93.5
Redlands	KCHL FM	96.7
Ridgecrest	KLDA-FM	105.5
Riverside	KPLI	99.1
	KACE-FM	92.7
	KDUO	97.5
Sacramento	KCRA-FM	96.1
	KFBK-FM	96.9
	KEBR	100.5
	KHIQ	105.1
	KJML	95.3
	KRAK-FM	92.9
	KSFM	96.9
	KXRQ	98.5
	KXOA-FM	107.9
Salinas	KSBW-FM	102.5
San Bernardino	KVCR	*91.9
	KFMW	99.9
	KEBS	*89.5
San Diego	KOGO-FM	94.1
	KFMB-FM	100.7
	KFMX-FM	96.5
	KGB-FM	101.5
	KITT	105.3
	KJLM	98.1
	KLRO	94.9
	KPRI	106.5
	KSDS	*88.3
San Fernando	KVFM	94.3
San Francisco	KALW	*91.7
	KBAY-FM	104.5
	KBCD	105.3
	KCBS-FM	98.9
	KDFC	102.1
	KEAR	97.3
	KFRC-FM	106.1
	KGO-FM	103.7
	KNBR-FM	99.7
	KHIP	106.9
	KRON-FM	96.5
	KSFR	94.9
	KQBY-FM	95.7
	KYA-FM	93.3
San Jose	KSJO-FM	92.3
	KRPM	98.5
San Luis Obispo	KATY-FM	96.1
San Rafael	KTIM	100.9
San Mateo	KCSM	*90.9
Santa Ana	KWIZ-FM	96.7
	KFIL	106.3
Santa Barbara	KRCW	97.5
	KDB-FM	93.7
	KMUZ	103.3
Santa Clara	KSCU	*90.1
Santa Cruz	KSCD-FM	99.1
Santa Maria	KEYM	99.1
	KSMA-FM	102.5
Santa Monica	KCRW	*89.9
	KSRF	103.1
Sierra Madre	KMAX	107.1
Stockton	KCVN	*91.3
	KSTN-FM	107.3
	KWG-FM	105.7
Turlock	KHOM	92.9
Ventura-Oxnard	KVEN-FM	100.7
Visalia	KONG-FM	92.9
Walnut Creek	KWME-FM	92.1
West Covina	KDWC	98.3
Woodland	KATT	95.3

COLORADO

Location	C.L.	Mc.
Boulder	KRNW	97.3
Colorado Springs	KRCC	*91.3
	KFMH	96.5
	KSHS	*90 5
	KVOR-FM	92.9
Cortez	KZFM	94.1
Denver	KFML-FM	98.5
	KDEN-FM	99.5
	KLIR-FM	100.3
	KLZ-FM	106.7
	KOA-FM	103.5
	KTGM	105.1
Grand Junction	KREX-FM	92.3
Manitou Springs	KCMS-FM	102.7

CONNECTICUT

Location	C.L.	Mc.
Bridgeport	WJZZ	99.9
Brookfield	WGHF	95.1
Danbury	WLAD-FM	98.3
Hartford	WHCN	105.9
	WDRC-FM	102.9
	WCCC-FM	106.9
	WSCH	93.7
	WRTC-FM	*89.3
	WTIC-FM	96.5
Manchester	WINF-FM	107.9
Meriden	WBMI	95.7
Middletown	WESU	88.1
New Haven	WNHC-FM	99.1
	WYBC-FM	94.3
Stamford	WSTC-FM	96.7
Storrs	WHUS	*90.5
Waterbury	WATR-FM	92.5

DELAWARE

Location	C.L.	Mc.
Dover	WDOV-FM	94.7
Wilmington	WDEL-FM	93.7
	WJBR	99.5

D. C.

Location	C.L.	Mc.
Washington	WASH-FM	97.1
	WAMU-FM	*88.5
	WFAN	100.3
	WGAY	99.5
	WGMS-FM	103.5
	WGTB	*90.1
	WMAL-FM	107.3
	WOL-FM	98.7
	WRC-FM	93.9
	WTOP-FM	96.3
	WWDC-FM	101.1

FLORIDA

Location	C.L.	Mc.
Cocoa Beach	WXBR	101.1
Coral Gables	WVCG-FM	105.1
Daytona Beach	WNDB-FM	94.5
Fort Lauderdale	WWIL-FM	103.5
	WFLM	105.9
	WMFP	100.7
Fort Pierce	WARN	98.7
Gainesville	WRUF-FM	*104.1
Jacksonville	WJAX-FM	95.1
	WMBR-FM	96.1
Miami	WKAT-FM	93.1
	WCKR-FM	97.3
	WGBS-FM	96.3
	WTHS	*91.7
	WWPB-FM	101.5

Location	C.L.	Mc.
Miami Beach	WKAT-FM	93.1
	WAEZ-FM	94.9
	WMBM-FM	93.9
Ocala	WMOP-FM	93.7
Orlando	WDBO-FM	92.3
	WHOO-FM	96.5
	WKIS-FM	100.3
Palm Beach	WQXT-FM	97.9
Pensacola	WPEX-FM	94.1
St. Petersburg	WGNB	101.5
	WTCX	99.5
Sarasota	WYAK	102.5
Tallahassee	WFSU-FM	*91.5
	WBGM-FM	98.9
Tampa	WDAE-FM	100.7
	WFLA-FM	93.3
	WPKM	104.7
	WTUN	*88.9
Winter Park	WPRK	*91.5

GEORGIA

Location	C.L.	Mc.
Athens	WGAU-FM	102.5
Atlanta	WABE	*90.1
	WAVQ	94.9
	WPLO-FM	103.3
	WGKA-FM	92.9
	WSB-FM	98.5
Augusta	WAUG-FM	105.7
	WBBQ-FM	103.7
Columbus	WRBL-FM	93.3
Gainesville	WDUN-FM	103.9
Lagrange	WLAG-FM	104.1
Macon	WMAZ-FM	99.1
Marietta	WBIE-FM	101.5
	WKLS	96.1
Newnan	WCOH-FM	96.7
Savannah	WTOC-FM	97.3
Swainsboro	WJAT-FM	101.7
Toccoa	WLET-FM	106.1

HAWAII

Location	C.L.	Mc.
Honolulu	KAIM-FM	95.5
	KVOK	*88.1
	KUOH	*90.5

IDAHO

Location	C.L.	Mc.
Boise	KBOI-FM	97.9
Lewiston	KOZE-FM	96.7
Pocatello	KBGL	*88.7

ILLINOIS

Location	C.L.	Mc.
Alton	WOKZ-FM	100.3
Anna	WRAJ-FM	92.7
Arlington Heights	WNWC	92.7
Aurora	WKKD-FM	95.9
Bloomington	WJBC-FM	101.5
Carbondale	WSIU	*91.9
Carmi	WROY-FM	97.3
Champaign	WDWS-FM	97.5
Chicago	WBBM-FM	96.3
	WBEZ	*91.5
	WCLM	101.9
	WDHF	95.5
	WEBH	93.9
	WEFM	99.5
	WEHS	97.9
	WENR-FM	94.7
	WFMF	100.3
	WFMQ	107.5
	WFMT	98.7
	WKFM	103.5
	WMAQ-FM	101.1
	WMBI-FM	*90.1
	WNIB	97.1
	WSBC-FM	93.1
	WJJD-FM	104.3
Decatur	WSOY-FM	102.9
DeKalb	WNIC	*91.1
E. St. Louis	WBBR	101.1
Effingham	WSEI	95.7
	WELG	103.9
	WRMN-FM	94.3
Elgin	WEPS	*88.1
Elmwood Park	WXFM	105.9
Evanston	WEAW	105.1
	WNUR	*89.3
Galesburg	WYKC-FM	*88.1
Glen Ellyn	WELF-FM	107.1
Harrisburg	WEBQ-FM	99.9
Highland Park	WNSH-FM	103.1
Jacksonville	WLDS-FM	100.5
	WAJP	93.5
Joliet	WJOL-FM	96.7
Kankakee	WKAK-FM	99.9
Kewanee	WKSD	*91.9
Litchfield	WSMI-FM	106.1
Macomb	WWKS	*91.3
Mattoon	WLBH-FM	96.9
Morris	WRMI-FM	104.7
Mt. Carmel	WSAB	94.9
	WVMC-FM	101.1
Mt. Vernon	WMIX-FM	94.1
Oak Park	WOPA-FM	102.7
Olney	WVLN-FM	92.9
Paris	WPRS-FM	98.3
Park Forest	WRHS	*88.1
Park Ridge	WMTH	*88.5
Peoria	WMBD-FM	92.5
Quincy	WGEM-FM	105.1
	WTAD-FM	99.5
Rockford	WROK-FM	97.5
Rock Island	WHBF-FM	98.9
Skokie	WRSV	98.3
Springfield	WTAX-FM	103.7
Taylorville	WGGM	95.0
Urbana	WILL-FM	*90.9
Wheaton	WETN-FM	*88.1
Winnetka	WNTH	*88.1

INDIANA

Location	C.L.	Mc.
Anderson	WAFM	97.9
Bloomington	WFIU	*103.7
	WTTV-FM	92.3
Columbus	WCSI-FM	98.3
Connersville	WCNB-FM	100.3
Crawfordsville	WBBS-FM	106.3
Elkhart	WCMR-FM	95.1
	WTRC-FM	100.7
Evansville	WIKY-FM	104.1
	WEVC	*91.5
	WPSR	90.7
Franklin	WFCI	*89.3
Frankfort	WILO-FM	99.7
Fort Wayne	WPTH	95.1
Gary	WGVE	*88.1
Goshen	WGCS	91.1
Greencastle	WGRE	*91.7
Greenfield	WSMJ	99.5
Hammond	WYCA	92.3
Hartford City	WHCI	*91.9
Huntington	WVSH	*91.9
Indianapolis	WAJC	*104.5
	WICR	*88.7
	WISH-FM	107.9
	WAIV	105.7
	WFBM-FM	94.7
	WFMS	95.5
	WIAN	*90.1
	WIBC-FM	93.1
Jasper	WITZ-FM	104.7
Kokomo	WFKO	100.5
Madison	WORX-FM	96.7
Marion	WMRI-FM	106.9
	WBST	*90.7
Muncie	WMUN	104.1
	WWHI	*91.5
New Albany	WNAS	*88.1
New Castle	WCTW-FM	102.5
	WYSN	*91.1
Princeton	WRAY-FM	98.1
Richmond	WGLM	96.1
Salem	WSIM-FM	98.9
Seymour	WJOO	93.7
South Bend	WETL	*91.9
	WNDU-FM	92.9
	WPFR	102.7
Terre Haute	WTHI-FM	99.9
	WVTS	100.7(s)
Wabash	WSKS	*91.3
Warsaw	WRSW-FM	107.3
Washington	WFML	106.5
West Lafayette	WBAA-FM	99.1

IOWA

Location	C.L.	Mc.
Ames	WOI-FM	*90.1
Boone	KFGQ	*99.3
Cedar Falls	KTCF	*88.1
Cedar Rapids	KHAK-FM	98.1
Clinton	KROS-FM	96.1
Davenport	WOC-FM	103.7
Des Moines	KDPS	*88.1
	KDMI	97.3
	KSO	98.5
	WHO-FM	100.3
Iowa City	KSUI	*91.7
Muscatine	KWPC-FM	99.7
Sioux City	KDVR	97.9
Storm Lake	KAYL-FM	101.5
Waverly	KWAR	89.1

KANSAS

Location	C.L.	Mc.
Emporia	KSTE	*88.7
Kansas City	KCJC	98.1
Lawrence	KANU	*91.5
Leavenworth	KCLO-FM	98.9
Manhattan	KSDB-FM	*88.1
Newton	KJRG-FM	92.1
Ottawa	KTJO-FM	*88.1
Parsons	KPPS-FM	*91.1
Salina	KAFM	99.9
Topeka	KTOP-FM	100.3
Wichita	KFH-FM	100.3
	KMUW	*89.1
	KCBM-FM	107.3

KENTUCKY

Location	C.L.	Mc.
Ashland	WCMI-FM	93.7
Central City	WNES-FM	101.9
Fulton	WFUL-FM	104.9
Glasgow	WGGC	95.1
Hazard	WKIC-FM	96.5
Henderson	WSON-FM	99.5
Hopkinsville	WRLX	98.7
	WKOF	100.3
Lexington	WBKY	*91.3
	WLAP-FM	94.5
Louisville	WFPK	*91.9
	WFPL	*89.3
Madisonville	WFMW-FM	93.9
	WNGO-FM	94.7
Owensboro	WOMI-FM	92.5
	WVJS-FM	96.1
Paducah	WPAD-FM	96.9
	WKYB-FM	93.3

LOUISIANA

Location	C.L.	Mc.
Alexandria	KALB-FM	96.9
Baton Rouge	WJBO-FM	98.1
Monroe	KMLB-FM	104.1
New Orleans	WBEH	89.3
	WDSU-FM	105.3
	WRCM	97.1
	WMMT	95.7
Shreveport	KRMD-FM	101.1
	KBCL-FM	96.5
	KWKH-FM	94.5

MAINE

Location	C.L.	Mc.
Augusta	WFAU-FM	101.3
Bangor	WABI-FM	97.1
Brunswick	WBOR	*91.1
Caribou	WFST-FM	97.7
Lewiston	WCOU-FM	93.9
	WRJR	91.5
Orono	WMEB-FM	91.9
Poland Springs	WMTW-FM	94.9
Portland	WLOB-FM	97.9

MARYLAND

Location	C.L.	Mc.
Annapolis	WNAV-FM	99.1
	WANN-FM	107.9
	WXTC	107.9
	WAQE-FM	101.9
Baltimore	WBJC	*88.1
	WCAO-FM	102.7
	WCBM-FM	106.5
	WFMM-FM	93.1
	WRBS	95.1
	WSID	92.3
	WBAL-FM	97.9
	WITH-FM	104.3
	WSID-FM	92.3
Bethesda	WJMD	106.3(s)
	WHFS-FM	102.5
Bradbury Heights	WPGC	95.5
Cumberland	WCUM-FM	102.9
Frederick	WFMD-FM	99.9
Hagerstown	WJEJ-FM	104.7
	WARK-FM	106.9
Havre de Grace	WASA-FM	103.7
Oakland	WBUZ	95.5
Tacoma Park	WGTS-FM	*91.9
Waldorf	WSMD	104.1
Westminster	WTTR-FM	100.7

MASSACHUSETTS

Location	C.L.	Mc.
Amherst	WAMF	*88.1
	WFCR	*88.5
	WMUA	*91.1
Boston	WBUR	*90.9
	WBCN	104.1
	WBZ-FM	106.7
	WCOP-FM	100.7
	WEEI-FM	103.3
	WERS	*88.9
	WHDH-FM	94.5
	WRKO-FM	98.5
	WXHR	96.9
Brockton	WBET-FM	97.7
Brookline	WBOS-FM	92.9
Cambridge	WGBH-FM	*89.7
	WHRB-FM	95.3
	WTBS	88.1
Fitchburg	WFGM-FM	104.7
Framingham	WKOX-FM	105.7
Greenfield	WHAI-FM	98.3
Haverhill	WHAV-FM	92.5
Lawrence	WGHJ	93.7
Lowell	WLLH-FM	99.5
Lynn	WUPI-FM	105.3
	WHIL-FM	107.9
Medford	WISK	107.9
New Bedford	WBSM-FM	97.3
	WNBH-FM	98.1
Plymouth	WPLM-FM	99.1
S. Hadley	WMHC	*88.5
Springfield	WHYN-FM	93.1
	WEDK	*91.7
	WSCB	*88.9
	WMAS-FM	94.7
Waltham	WCRB-FM	102.5
W. Yarmouth	WOCB-FM	94.3
Williamstown	WCFM	*90.1
Winchester	WHSR-FM	*91.9
Worcester	WAAB	107.3
	WTAG-FM	96.1

MICHIGAN

Location	C.L.	Mc.
Ann Arbor	WUOM	*91.7
Bay City	WBCM-FM	96.1
	WNEM-FM	102.5
Benton Hrbr.	WHFB-FM	99.9
Birmingham	WHFI	94.7
Coldwater	WTVB-FM	98.3
Dearborn	WKMH-FM	100.3
Detroit	WDET-FM	*101.9
	WBFG-FM	98.7
	WCHD	105.9
	WDTM	106.7
	WABX	99.5
	WDTR	*90.9
	WGPM	107.5
	WJBK-FM	93.1
	WMUZ	103.5
	WMZK	97.9
	WJR-FM	96.3
	WOMC-FM	104.3
	WQRS-FM	105.1
	WRMK-FM	98.7
	WWJ-FM	97.1
	WXYZ-FM	101.1
E. Lansing	WKAR-FM	*90.5
	WSWM	99.1
Flint	WFBE	*95.1
Grand Rapids	WFUR-FM	102.9
	WJEF-FM	93.7
	WLAV-FM	96.9
	WMAX-FM	101.3
	WOOD-FM	105.7 (s)
	WVGA-FM	104.1
	WXTO-FM	97.9
	WKLW-FM	95.7
Greenville, Mich.	WPLB-FM	107.3
Highland Pk.	WHPR	*88.1
Holland	WJBL-FM	94.5
Houghton Lake	WJGS	98.5
Interlochen	WGYA	*103.1
Jackson	WBBC	94.1
Kalamazoo	WMCR	*102.1
Lansing	WJIM-FM	97.5
	WMRT-FM	100.7
Midland	WQDC-FM	99.7
Mount Clemens	WBRB-FM	102.7
Oak Park	WLDM	95.5
Royal Oak	WOAK	*89.3
	WOMC	104.3
Saginaw	WSAM-FM	98.1
Sturgis	WSTR-FM	103.1

MINNESOTA

Location	C.L.	Mc.
Brainerd	KLIZ-FM	95.7
Mankato	KYSM-FM	103.5
Minneapolis	KTIS-FM	*98.5
	KWFM	97.1
	WLOL-FM	99.5
	WPBC-FM	101.3
	WAYL	96.1
St. Cloud	KFAM-FM	104.7
St. Louis Park	KRSI-FM	104.1
St. Paul	KNOF	95.3
Worthington	KWOA-FM	94.9

MISSISSIPPI

Location	C.L.	Mc.
Jackson	WJDX-FM	102.9
Laurel	WNSL-FM	100.3
Meridian	WMMI	*88.1

MISSOURI

Location	C.L.	Mc.
Clayton	KFUO-FM	99.1
Joplin	WMBH-FM	96.1
	KSYN	92.5
Kansas City	KCMO-FM	94.9
	KBEY	104.3
	KTSR	*90.1
	WDAF-FM	102.1
	KCMK	93.3
	KCUR-FM	89.3
	KMBC-FM	99.7
	KXTR	96.5
Kennett	KBOA-FM	98.9
Poplar Bluff	KWOC-FM	94.5
St. Joseph	KUSN-FM	105.1
St. Louis	KCFM	93.7
	KADI	96.5
	WAMV-FM	101.1
	WIL-FM	92.3
	KSLH	*91.5
	KSTL-FM	98.1
	KWIX	102.5
	KRFD	106.9
Springfield	KTTS-FM	94.7
	KTXR	101.5
West Plains	KWPM-FM	93.9

NEBRASKA

Location	C.L.	Mc.
Kearney-Holdrege	KRNY-FM	98.9
Lexington	KRUN-FM	93.1
Lincoln	KFMQ	95.3
Omaha	KQAL-FM	94.3
	KFAB-FM	99.9
	WOW-FM	92.3
	KICN	96.1
Scottsbluff	KNEW-FM	94.1

NEVADA

Location	C.L.	Mc.
Las Vegas	KORK-FM	97.1
Reno	KNEV	95.5

NEW HAMPSHIRE

Location	C.L.	Mc.
Berlin	WMOU-FM	103.7
Claremont	WTSV-FM	106.1
Manchester	WKBR-FM	95.7
Mt. Washington	WMTW-FM	94.9
Nashua	WOTW-FM	106.3

NEW JERSEY

Location	C.L.	Mc.
Asbury Park	WJLK-FM	94.3
Atlantic City	WFPG-FM	96.9
Bridgeton	WSNJ-FM	107.7
Camden	WKDN-FM	106.9
Dover	WDHA-FM	105.5
E. Orange	WFMU	*91.1
Eatontown	WHTG-FM	105.3
Hackettstown	WNTI	*91.9
Long Branch	WRLB	107.1
Millville	WMVB-FM	97.3
Newark	WHBI	105.9
	WJRZ-FM	94.7
	WVNJ-FM	100.3
	WBGO	*88.3
New Brunswk.	WCTC-FM	98.3
Paterson	WPAT-FM	93.1
Princeton	WPRB	103.9
Red Bank	WFHA-FM	106.3
South Orange	WSOU	*89.5
Trenton	WBUD-FM	101.5
	WTOA	97.5
Wildwood	WCMC-FM	100.7
Zarephath	WAWZ-FM	99.1

NEW MEXICO

Location	C.L.	Mc.
Albuquerque	KANW	*89.1
	KHFM	96.3
(s) Aztec	KNDE-FM	94.9
Los Alamos	KRSN-FM	98.5
Mountain Park	KMFM	97.9
Roswell	KBIM-FM	97.1

NEW YORK

Location	C.L.	Mc.
Albany	WAMC	*90.3
Auburn	WMBO-FM	96.1
Babylon	WTFM	103.5
	WBAB-FM	102.3
Binghamton	WNBF-FM	98.1
	WKOP-FM	95.3
Brooklyn	WNYE	*91.5
Buffalo	WBEN-FM	106.5
	WBFO	*88.7
	WEBR	94.5
	WGR-FM	96.9
	WBUF	92.9
	KWOL-FM	104.1
	WIFE-FM	103.3
Central Square	WCSQ	*89.3
Cherry Valley	WJIV	101.9
Corning	WCLI-FM	106.1
Cortland	WKRT-FM	99.9
DeRuyter	WOIV	105.1
Elmira	WECW	*88.1
Floral Park	WSHS	*90.3
Garden City	WLIR	92.7
Hempstead	WHLI-FM	98.3
	WVHC	*88.7
Hornell	WWHG-FM	105.3
Ithaca	WHCU-FM	97.3
	WICB	*91.7
	WEIV	103.7
	WVBR-FM	101.7
Jamestown	WJTN-FM	93.3
Kenmore	WYSL-FM	103.3
Mt. Kisco	WRNW	107.1
New Rochelle	WVOX-FM	93.5
New York	WABC-FM	95.5
	WBAI	99.5
	WBFM	101.9
	WCBS-FM	101.1
	WEVD-FM	97.9
	WFUV	*90.7
	WHOM-FM	92.3
	WKCR-FM	*89.9
	WNCN	104.3
	WNEW-FM	102.7
	WNYC-FM	93.9
	WNYE	91.5
	WOR-FM	98.7
	WQXR-FM	96.3
	WNBC-FM	97.1
	WRFM	105.1
	WRVR	106.7
Niagara Falls	WHLD-FM	98.5
Olean	WHDL-FM	95.7
Plattsburgh	WEAV-FM	99.9
Patchogue	WALK-FM	97.5(s)
	WPAC-FM	106.1
Peekskill	WLNA-FM	100.7
Poughkeepsie	WKIP-FM	104.7
	WEOK-FM	101.5
Riverhead	WAPC-FM	103.9(s)
Rochester	WHFM	98.9
	WBBF-FM	100.1
	WCMF	96.5
	WIRQ	*90.9
	WROC-FM	97.9
Schenectady	WGFM	99.5
South Bristol	WMIV	95.1
Springville	WSPE	*88.1
Syracuse	WAER	*88.1
	WDDS-FM	93.1
	WONO	100.9
	WSYR-FM	94.5
Troy	WFLY	92.3
	WRPI	*91.5
Utica	WRUN-FM	105.7
Wethersfield	WBIV	105.7
White Plains	WFAS-FM	103.9

NORTH CAROLINA

Location	C.L.	Mc.
Albemarle	WABZ-FM	100.9
Asheboro	WGWR-FM	92.3
Asheville	WLOS-FM	104.3
Burlington	WBBB-FM	101.1
	WFNS-FM	93.9
Burlington-Graham	WBAG-FM	92.9
Chapel Hill	WUNC	*91.5
Charlotte	WBT-FM	107.9
	WIST-FM	95.1
	WSOC-FM	103.5
	WYFM	104.7
Clingman's Pk.	WMIT	106.9
Concord	WEGO-FM	97.9
Durham	WDNC-FM	105.1
Elkin	WIFM-FM	100.9
Fayetteville	WFNC-FM	98.1
Forest City	WBBO-FM	93.3
	WAGY-FM	105.3
Gastonia	WGNC-FM	101.9
Goldsboro	WEQR	96.9
Greensboro	WMDE	98.7
	WQMG-FM	97.1
Greenville	WWWS	*91.3
Henderson	WHNC-FM	92.5
	WHKP-FM	102.5
Hendersonville	WHKP-FM	102.5
Hickory	WHKY-FM	102.9
High Point	WHPE-FM	95.5
	WHPS	*89.3
	WMFR-FM	99.5
	WNOS-FM	100.3
Laurinburg	WEWO-FM	96.5
Leaksville	WLOE-FM	94.5
Lexington	WBUY-FM	94.3
Lumberton	WTSB-FM	95.7
North Wilkesboro	WKBC-FM	97.3
Raleigh	WKIX-FM	96.1
	WPTF-FM	94.7
	WRAL-FM	101.5
Reidsville	WREV-FM	102.1
Rocky Mount	WEED-FM	92.1
	WFMA	100.7
Roxboro	WRXO-FM	96.7
Salisbury	WSTP-FM	106.5
Sanford	WWGP-FM	105.5
Shelby	WOHS-FM	96.1
Statesville	WFMX	105.7
Tarboro	WCPS-FM	104.3
Thomasville	WTNC-FM	98.3
Williamston	WIAM	103.7
Wilmington	WPRV	98.9
Wilson	WVOT-FM	106.1
Winston-Salem	WAIR-FM	93.1
	WYFS	107.5
	WFDD-FM	*88.1
	WSJS-FM	104.1

OHIO

Location	C.L.	Mc.
Akron	WAKR-FM	97.5
	WAPS	*89.1
	WCUE-FM	96.5
Alliance	WFAH-FM	101.7
Ashland	WNCO-FM	101.3
Ashtabula	WREO-FM	103.7
Athens	WOUB-FM	*91.5
Barberton	WDBN	94.9
Bellaire	WOMP-FM	100.5
Berea	WBWC	*88.3
Bowling Green	WBGU	*88.1
Canton	WHBC-FM	94.1
	WCNO	106.9
	WTOF-FM	98.1
Celina	WMER-FM	94.3
Chillicothe	WBEX-FM	93.3
Cincinnati	WCPO-FM	105.1
	WAEF-FM	104.3
	WGUC	*90.9
	WAKW-FM	93.3
	WKRC-FM	101.9
	WSAI-FM	102.7
Cleveland	KYW-FM	105.7
	WXEN-FM	106.6
	WBOE	*90.3
	WCRF	103.3
	WDGO	95.5
	WDOK-FM	102.1
	WERE-FM	98.5
	WGAR-FM	99.5
	WHK-FM	100.7
	WJW-FM	104.1
	WNOB	107.9
Cleveland Hts.	WCUY-FM	92.5
Columbus	WCBE	*90.5
	WBNS-FM	97.1
	WCOL-FM	92.3
	WOSU-FM	*89.7
	WTVN-FM	96.3
	WVKO	94.7
Dayton	WHIO-FM	99.1
	WONE	104.7
Delaware	WSLN	*91.1
East Liverpool	WOHI-FM	104.3
Eaton	WCTM	92.9
Elyria	WEOL-FM	107.3
Findlay	WFIN-FM	100.5
Fostoria	WFOB	96.7
Fremont	WFRO-FM	99.3
Gallipolis	WJEH-FM	101.5
Granville	WDUB-FM	91.3
Greenville	WDRK-FM	106.5
Hamilton	WQMS	96.7
	WHOH	103.5
	WFOL-FM	94.9(s)
Hillsboro	WSRW-FM	106.7
Kent	WKSU-FM	*88.1
Lancaster	WHOK-FM	95.5
Lima	WIMA-FM	102.1
Mansfield	WVND-FM	*105.9
Marietta	WCMO	*89.3
Marion	WMRN-FM	106.9
Miamisburg	WFCJ	93.9
Middletown	WPFB-FM	105.9
Mt. Vernon	WMVO-FM	93.7
New Concord	WMCO-FM	*91.9
Newark	WCLT-FM	100.3
Norwalk	WLKR-FM	95.3
Oxford	WMUB	*88.5
	WDXR	97.7
Piqua	WPTW-FM	95.7
Port Clinton	WRWR-FM	94.5
Portsmouth	WPAY-FM	104.1
Salem	WSOM-FM	105.1
Sandusky	WLEC-FM	102.7
Springfield	WBLY-FM	103.9
	WEEC-FM	100.7
Steubenville	WSTV-FM	103.5
Toledo	WSPD-FM	101.5
	WMHE	92.5
	WTDS	*91.3
	WTOL-FM	104.7
	WTRT	99.9
Van Wert	WERT-FM	98.9
Westerville	WOBN	*91.5
Wooster	WWST-FM	104.5
Worthington-Columbus	WRFD-FM	97.9
Xenia	WHBM-FM	103.9
Yellow Springs	WYSO	*91.5
Youngstown	WKBN-FM	98.9
	WBBW-FM	93.3
	WRED	101.1
Zanesville	WHIZ-FM	102.5

OKLAHOMA

Location	C.L.	Mc.
Durant	KSEO-FM	107.3
Norman	WNAD-FM	*90.9
Oklahoma City	KOKH	*88.9
	KIOO	100.5
	KEFM	94.7
	KYFM	98.9
Shawnee	KBGC	*89.9
Stillwater	KOSU-FM	*91.7
	KSPI-FM	93.9
Tulsa	KWGS	*90.5
	KIHI	95.5
	KOCW	97.5
	KOGM-FM	92.9

OREGON

Location	C.L.	Mc.
Eugene	KRVM	*91.9
	KEED-FM	93.1
	KFMY	97.9
	KUGN-FM	99.1
	KWAX	*91.1
Grants Pass	KGPO	96.9
Medford	KBOY-FM	95.3
Oretech	KTEC	*88.1
Portland	KOAP-FM	92.3
	KGMG	95.5
	KOIN-FM	101.1
	KPDQ-FM	105.3
	KPFM	97.1
	KPOJ-FM	98.7
	KQFM	100.3
	KRRC	*89.3

PENNSYLVANIA

Location	C.L.	Mc.
Allentown	WFMZ	100.7
	WAEB-FM	104.1
Altoona	WVAM-FM	100.1
	WFBG-FM	98.1
Beaver Falls	WBVP-FM	106.7
Bethlehem	WGPA-FM	95.1
Bloomsburg	WHLM-FM	106.5
Boyertown	WBYC-FM	107.5
Braddock	WLOA-FM	96.9
Butler	WBUT-FM	97.7
Carlisle	WHYL-FM	102.3
Chambersburg	WCHA-FM	95.1(s)
Dubois	WCED-FM	102.1
Easton	WEST-FM	107.9
	WEEX-FM	99.9
Erie	WWYN-FM	99.9
Gettysburg	WGET-FM	107.7
Glenside	WIFI	92.5
Harrisburg	WHP-FM	97.3
	WMSP	94.9
Havertown	WHHS	*89.3
Hazleton	WAZL-FM	97.9
Jenkintown	WIBF	103.9
Johnstown	WARD-FM	92.1
	WJAC-FM	95.5
Lancaster	WGAL-FM	101.3
	WDAC	94.5
	WLAN-FM	96.9
Lebanon	WLBR-FM	100.1
Meadville	WMGW-FM	100.3
Montrose	WPEL-FM	96.5
Oil City	WDJR	98.5
Palmyra	WJWR	92.1
Philadelphia	WCAU-FM	98.1
	WPBS-FM	105.3
	WDAS-FM	105.3
	WFIL-FM	102.1
	WFLN	95.7
	WHAT-FM	96.5
	WHYY	*90.9
	WIFI	92.5
	WIBG-FM	94.1
	WIP-FM	93.3
	WPEN-FM	102.9
	WPWT	*91.7
	WQAL	106.1
	WRTI-FM	*90.1
	WXPN	*88.9
Pittsburgh	KDKA-FM	92.9
	WAMO	105.9
	WRYT-FM	96.1
	KQV-FM	102.5
	WDUQ	*91.5
	WYRE-FM	107.9
	WILY	105.9
	WJAS-FM	99.7
	WKJF	93.7
	WPIT-FM	101.5
	WWSW-FM	94.5
Pottsville	WPPA-FM	101.9
Reading	WRFY-FM	102.5
Red Lion	WGCB-FM	96.1
Scranton	WGBI-FM	101.3
	WUSV	*88.9
Sharon	WPIC-FM	102.9
State College	WDFM	*91.1
Sunbury	WKOK-FM	94.1
Towanda	WTTC-FM	92.7
Tyrone	WGMR-FM	101.1
Warren	WRRN	92.3
Washington	WJPA-FM	104.3
Waynesboro	WAYZ-FM	101.5
Wilkes-Barre	WBRE-FM	98.5
	WYZZ	103.3
Williamsport	WLYC-FM	105.1
	WRAK-FM	100.3
York	WNOW-FM	105.7
	WSBA-FM	103.3

RHODE ISLAND

Location	C.L.	Mc.
Cranston	WLDV	99.9
Providence	WPJB-FM	105.1
	WICE-FM	107.7
	WPFM	95.5
	WPRO-FM	92.3
	WXCN	101.5
Woonsocket	WWON-FM	106.3

SOUTH CAROLINA

Location	C.L.	Mc.
Anderson	WCAC	101.1
Beaufort	WBEU-FM	98.7
Charleston	WCSC-FM	96.9
	WTMA-FM	95.1
Clemson	WSBF-FM	*88.1
Columbia	WCDS-FM	97.9
	WNDK-FM	104.7
	WUSC-FM	*89.9
Dillon	WDSC-FM	92.9
Greenville	WESC-FM	92.5
	WFBC-FM	93.7
	WMVU-FM	94.5
Laurens-Clinton	WLBG-FM	100.5
N. Charleston	WKTM	102.5
Rock Hill	WRHI-FM	98.3
Seneca	WSNW-FM	98.1
Spartanburg	WSPA-FM	98.9
Sumter	WFIG-FM	101.3

TENNESSEE

Location	C.L.	Mc.
Bristol	WDPI-FM	96.9
Chattanooga	WDOD-FM	96.5
	WLON	106.5
Cleveland	WCLE-FM	100.7
Collegedale	WSMC-FM	*88.1
Franklin	WFLT-FM	100.1
Gallatin	WFMG	104.5
Greeneville	WGRV-FM	94.9
Jackson	WTJS-FM	104.1
Johnson City	WJCW-FM	100.7
Kingsport	WKPT-FM	98.5
Knoxville	WBIR-FM	93.3
	WKCS	*91.1
	WUOT	*91.9
Manchester	WMSR-FM	99.7
Memphis	WMC-FM	99.7
	WMPS-FM	97.1
	WDIA-FM	102.7
Nashville	WFMB	105.9
	WSIX-FM	97.5
Sevierville	WSEV-FM	102.1
Tullahoma	WJIG-FM	98.3

TEXAS

Location	C.L.	Mc.
Abilene	KACC-FM	*91.1
	KFMN	99.3
Alvin	KAJC-FM	102.1
Amarillo	KGNC-FM	93.1
Austin	KHFI	98.3
	KAZZ	95.5
	KTBC-FM	93.7
	KUT-FM	*90.7
Beaumont	KHCB-FM	105.7
	KAYD-FM	97.5
Big Spring	KFNE-FM	95.3
Brownwood	KHPC	88.1
Cleburne	KCLE-FM	94.9
Corpus Christi	KMFM	95.5
Dallas	KIXL-FM	104.5
	KMAP	105.3
	KNER	*88.1
	KRLD-FM	92.5
	KLIF-FM	98.7
	WFAA-FM	97.9
	WRR-FM	101.1
	KVTT	*91.7
	KQRO	102.9
Denton	KDNT-FM	106.3
DiBoll	KSPL-FM	95.5
Dumas	KDDD-FM	95.3
El Paso	KVOF-FM	*88.5
	KTSM-FM	99.9
	KHMS	94.7
Ft. Worth	WBAP-FM	96.3
	KXFM	99.5
	KFJZ-FM	97.1
	KJIM-FM	102.1
Gainesville	KGAF-FM	94.5
Harlingen	KELT	94.5
Highland Pk.	KUIL-FM	103.7
Hillsboro	KHBR-FM	102.3
Houston	KHGM	102.9
	KHCB-FM	105.7
	KHUL	95.7
	KFMK	97.9
	KODA-FM	99.1
	KARO	94.5
	KOST	100.3
	KQUE	102.9
	KRBE	104.1
	KXYZ-FM	96.5
	KTRH-FM	101.1
	KUHF	*91.3
Hilleen	KLEN-FM	93.3
Lubbock	KSCL-FM	93.7
	KBFM	96.3
	KTXT-FM	*91.9
Marshall	KMHT-FM	97.3
Midland	KNFM	92.3
	KMOD-FM	93.3
Mt. Pleasant	KIMP-FM	96.1
Odessa	KQIP	96.7
	KWMD	99.1

Location	C.L.	Mc.
Pampa	KBMF-FM	100.3
Pasadena	KLVL-FM	92.5
Plainview	KHBL	*88.1
Port Arthur	KFMP	93.3
San Antonio	KISS	99.5
	KEEZ	97.3
	KAKI-FM	98.1
	KITY	92.9
Sinton	KTOD-FM	101.3
Texarkana	KTAL-FM	98.1
Tyler	KSLT	93.1
Waco	KEFC	95.5(s)
	WACO	99.9
Wichita Falls	KNTO	95.1

UTAH

Location	C.L.	Mc.
Ephraim	KEPH	*88.9
Logan	KUSU-FM	*88.1
Provo	KBYU-FM	*88.9
Salt Lake City	KCPX-FM	98.7
	KLUB-FM	97.1
	KSL-FM	100.3

VIRGINIA

Location	C.L.	Mc.
Arlington	WAVA-FM	105.1
	WCCV-FM	97.5
Charlottesville	WINA-FM	95.3
	WTJU	91.3
Crewe	WSVS-FM	104.7
Farmville	WFLO-FM	95.7
Fredericksburg	WFVA-FM	101.5
Gretna	WMNA-FM	103.3
Hampton	WVEC-FM	101.3
Harrisonburg	WEMC	*91.7
	WSVA-FM	100.7
Lynchburg	WWOD-FM	100.1
Manassas	WPRW-FM	106.7
Marion	WMEV-FM	93.9
Martinsville	WMVA-FM	96.3
Newport News	WGH-FM	97.3
Norfolk	WMTI	*91.5
	WNOR-FM	98.7
	WRVC	102.5
	WTAR-FM	95.7
	WXRI	104.5
	WYFI-FM	99.7
Portsmouth	WAVY-FM	96.9
Richmond	WCOD	98.1
	WRFK	91.1
	WRVA-FM	94.5
	WRNL-FM	102.1
Roanoke	WDBJ-FM	94.9
	WLRJ	92.3
	WROV-FM	103.7
	WSLS-FM	99.1
South Boston	WHLF-FM	97.5
South Norfolk	WFOS	*90.5
Staunton	WSGM-FM	93.5
Williamsburg	WCWM	89.1
Winchester	WRFL	92.5
Woodbridge	WXRA	105.9

WASHINGTON

Location	C.L.	Mc.
Bellingham	KGMI-FM	92.9
Cheney	KEWC-FM	*89.9
Edmunds	KGFM	105.3
Ellensburg	KCWS-FM	*91.5
Lynden	KLYN-FM	106.5
Opportunity	KZUN-FM	96.1
Seattle	KING-FM	98.1
	KETO-FM	101.5
	KGMJ	95.7
	KIRO-FM	100.7
	KISW	99.9
	KLSN	96.5
	KMCS	98.9
	KOL-FM	94.1
	KUOW	94.9
Spokane	KREM-FM	92.9
	KXLY-FM	99.9
	KHQ-FM	98.1
Tacoma	KCPS	90.9
	KLAY-FM	106.3
	KTNT-FM	97.3
	KTOY	*91.7
	KTWR	103.9
Yakima	KNDX-FM	106.3

WEST VIRGINIA

Location	C.L.	Mc.
Beckley	WBKW	99.5
Charleston	WKAZ-FM	97.5
	WKNA	98.5
Huntington	WKEE-FM	100.5
	WMUL	*88.1
Martinsburg	WEPM-FM	94.3
Morgantown	WAJR-FM	99.3
Oak Hill	WOAY-FM	94.1
Wheeling	WKWK-FM	97.3
	WWVA-FM	98.7

WISCONSIN

Location	C.L.	Mc.
Appleton	WLFM	*91.1
Chilton	WHKW	*89.3
Colfax	WHWC	*88.3
Delafield	WHAD	*90.7
Eau Claire	WIAL	94.1
Fort Atkinson	WFAW	107.3
Green Bay	WBAY-FM	101.1
Greenfield Twp.	WWCF	94.9
Highland	WHHI	91.3
Highland Twp.	WHSA	*89.9
Janesville	WCLO-FM	99.9
La Crosse	WHLA	*90.3
Madison	WHA-FM	*88.7
	WIBA-FM	101.5
	WISM-FM	98.1
	WMFM	104.1(s)
	WRVB-FM	102.5
Merrill	WLIN	100.7
Milwaukee	WFMR	96.5
	WMIL-FM	95.7
	WISN-FM	97.3
	WRIT-FM	102.9
	WMKE	102.1
	WQFM	93.3
	WTMJ-FM	94.1
Monroe	WEKZ-FM	93.7
Racine	WRJN-FM	100.7
	WFNY	92.1
Rice Lake	WJMC-FM	96.3
Sparta	WCOW-FM	97.1
Stevens Point	WSPT-FM	97.9
Watertown	WTTN-FM	104.7
Waukesha	WAUX-FM	106.1
Wausau	WHRM	*91.9
Wauwatosa	WTOS	103.7
West Bend	WBKV-FM	92.5
Wisc. Rapids	WFHR-FM	103.3

WYOMING

Location	C.L.	Mc.
Cheyenne	KYOW-FM	106.3

U. S. FM Stations by Call Letters

Abbreviation: (s)—broadcasts stereo

C.L. Location

KAAR Oxnard, Calif.
KABC-FM Los Angeles, Calif.
KACE-FM Riverside, Calif.
KADI St. Louis, Mo.
KAFE Oakland, Calif.
KAFI Auburn, Calif.
KAFM Salina, Kans.
KAIM-FM Honolulu, Hawaii(s)
KAJC-FM Alvin, Tex.
KAJS Newport Beach, Calif.
KAKC Tulsa, Okla.
KAKI San Antonio, Tex.
KALB-FM Alexandria, La.
KALH Denver, Colo.
KALW San Francisco, Calif.
KAMS Mammoth Spring, Ark.
KANG St. Louis, Mo.
KANT-FM Lancaster, Calif.
KANU Lawrence, Kans.(s)
KANW Albuquerque, N.Mex.
KAPP Redondo Beach, Calif.
KARK Little Rock, Ark.
KARM-FM Fresno, Calif.
KARO Houston, Tex.
KASK-FM Ontario, Calif.
KASU Jonesboro, Ark.
KATT Woodland, Calif.
KATY-FM San Luis Obispo, Calif.
KAYD Beaumont, Tex.
KAZZ Austin, Tex.
KBAY San Francisco, Calif.(s)
KBBI Los Angeles, Calif.
KBBL Wichita, Kans.
KBBM Hayward, Calif.
KBBW San Diego, Calif.
KBCA Los Angeles, Calif.
KBCL-FM Shreveport, La.
KBCO San Francisco, Calif.(s)
KBEE-FM Modesto, Calif.
KBEY Kansas City, Mo.
KBFI Boise, Idaho
KBFM Lubbock, Tex.
KBGL Pocatello, Ida.
KBIM-FM Roswell, N.Mex.
KBIQ Los Angeles, Calif.
KBMF Pampa, Tex.
KBMS Los Angeles, Calif.
KBOA-FM Kennett, Mo.
KBOI-FM Boise, Idaho
KBOY-FM Medford, Oreg.
KBTM-FM Jonesboro, Ark.
KBUZ-FM Mesa, Ariz.
KBYR-FM Anchorage, Alaska(s)
KBYU-FM Provo, Utah
KCAL-FM Redlands, Calif.
KCBH Beverly Hills, Calif.(s)
KCBS-FM San Francisco, Calif.
KCFM St. Louis, Mo.(s)
KCHO-FM Amarillo, Tex.(s)
KCHQ-FM Conchella, Calif.(s)
KCIB-FM Fresno, Calif.(s)
KCJC Kansas City, Kans.
KCLE-FM Cleburne, Tex.
KCLO-FM Leavenworth, Kans.
KCMB-FM Wichita, Kans.
KCMI Los Angeles, Calif.
KCMK Kansas City, Mo.
KCMO-FM Kansas City, Mo.(s)
KCMS-FM Manitou Springs, Colo.
KCOM Omaha, Nebr.
KCPS Tacoma, Wash.
KCPX-FM Salt Lake City, Utah
KCRA-FM Sacramento, Calif.
KCRW Santa Monica, Calif.
KCSM San Mateo, Calif.
KCUI Pella, Ia.
KCUR-FM Kansas City, Mo.
KCVN Stockton, Calif.
KCVR-FM Lodi, Calif.
KCWS-FM Ellensburg, Wash.
KDB-FM Santa Barbara, Calif.
KDDD-FM Dumas, Tex.
KDEF-FM Albuquerque, N.Mex.
KDEN-FM Denver, Colo.
KDFC San Francisco, Calif.
KDKA-FM Pittsburgh, Pa.
KDMC Corpus Christi, Tex.
KDMI Des Moines, Iowa(s)
KDNT-FM Denton, Tex.
KDPS Des Moines, Iowa
KDUO Riverside, Calif.(s)
KDVR Sioux City, Ia.
KDWC West Covina, Calif.
KEAR San Francisco, Calif.
KEAX National City, Calif.
KEBJ Phoenix, Ariz.
KEBR Sacramento, Calif.
KEBS San Diego, Calif.
KEED-FM Springfield-Eugene, Oregon(s)
KEEN-FM San Jose, Calif.
KEEZ San Antonio, Tex.(s)
KEFC Waco, Tex.(s)
KEFM Oklahoma City, Okla.
KEFW Honolulu, Hawaii
KELE Phoenix, Ariz.
KELT Harlingen, Tex.
KEMO St. Louis, Mo.
KEPI Phoenix, Ariz.(s)
KERN-FM Bakersfield, Calif.
KETO-FM Seattle, Wash.(s)
KEYM Santa Maria, Calif.(s)
KEZE Anaheim, Calif.
KFAB-FM Omaha, Nebr.
KFAC-FM Los Angeles, Calif.
KFAM-FM St. Cloud, Minn.
KFBK-FM Sacramento, Calif.
KFCA Phoenix, Ariz.
KFGQ-FM Boone, Iowa
KFH-FM Wichita, Kans.
KFIL Santa Ana, Calif.
KFJC Mountainview, Calif.
KFJZ Fort Worth, Tex.
KFMB-FM San Diego, Calif.
KFMC Portland, Oreg.
KFMH Colorado Springs, Colo.
KFMK Houston, Tex.(s)
KFML-FM Denver, Colo.
KFMM Tucson, Ariz.
KFMN Abilene, Tex.
KFMP Port Arthur, Tex.(s)
KFMQ Lincoln, Nebr.
KFMU Los Angeles, Calif.(s)
KFMV Minneapolis, Minn
KFMW San Bernardino, Calif.
KFMX San Diego, Calif.(s)
KFMY Eugene, Oreg.(s)
KFNB Oklahoma City, Okla.(s)
KFNE Big Springs, Tex.
KFOX-FM Long Beach, Calif.
KFRC-FM San Francisco, Calif.
KFUO-FM Clayton, Mo.
KGAF-FM Gainesville, Tex.
KGB-FM San Diego, Calif.(s)
KGBN-FM Caldwell, Idaho
KGFM Edmonds, Wash.
KGGK Garden Grove, Calif.(s)
KGLA Los Angeles, Calif.
KGMG Portland, Oreg.(s)
KGMI Bellingham, Wash.
KGNC-FM Amarillo, Tex.
KGO-FM San Francisco, Calif.
KGPO Grants Pass, Oreg.
KGUD-FM Santa Barbara, Calif.
KHAK-FM Cedar Rapids, Iowa(s)
KHBL Plainview, Tex.
KHBR-FM Hillsboro, Tex.
KHCB Houston, Tex.
KHFI Austin, Tex.
KHFM Albuquerque, N.Mex.(s)
KHFR-FM Monterey, Calif.(s)
KHGM Beaumont, Tex.(s)
KHIP San Francisco, Calif.
KHIQ Sacramento, Calif.(s)
KHJ-FM Los Angeles, Calif.
KHMS El Paso, Tex.
KHOF Los Angeles, Calif.
KHOM-FM Turlock, Calif.(s)
KHPC Brownwood, Tex.
KHQ-FM Spokane, Wash.
KHSC Arcata, Calif.
KHUL Houston, Tex.
KHVR Bijou, Calif.
KHYI Fremont, Calif.
KICN Omaha, Nebr.
KIEM Eureka, Calif.
KIHI Tulsa, Okla.
KIMP-FM Mt. Pleasant, Tex.
KING-FM Seattle, Wash.
KIOD Oklahoma, Okla.
KIRO-FM Seattle, Wash.
KISA Kansas City, Mo.
KISS San Antonio, Tex.
KISW Seattle, Wash.(s)
KITH Phoenix, Ariz.
KITT San Diego, Calif.
KITY San Antonio, Tex.
KIXL-FM Dallas, Tex.(s)
KJAZ Alameda, Calif.
KJEM-FM Okla. City, Okla.
KJIM Ft. Worth, Tex.
KJLM San Diego, Calif.
KJML Sacramento, Calif.
KJPO Fresno, Calif.
KJRG Newton, Kans.
KJSB Houston, Tex.
KLAC-FM Los Angeles, Calif.
KLAY-FM Tacoma, Wash.(s)
KLCN-FM Blytheville, Ark.
KLEN-FM Killeen, Tex.
KLFM Beverly Hills, Calif.
KLIR-FM Denver, Colo.(s)
KLIZ-FM Brainerd, Minn.
KLOA-FM Ridgecrest, Calif.
KLON Long Beach, Calif.
KLRO San Diego, Calif.(s)
KLSN Seattle, Wash.(s)
KLST Colorado Springs, Colo.(s)
KLUB-FM Salt Lake City, Utah
KLVL Pasadena, Tex.
KLYD-FM Bakersfield, Calif.
KLYN-FM Lynden, Wash.
KLZ-FM Denver, Colo.
KMAK-FM Fresno, Calif.
KMAP Dallas, Tex.
KMAX Sierra Madre, Calif.
KMBC-FM Kansas City, Mo.(s)
KMCP Portland, Oreg.
KMCS Seattle, Wash.
KMER Fresno, Calif.
KMFM Tularosa, N. Mex.
KMHT Marshall, Tex.
KMJ-FM Fresno, Calif.
KMLA Los Angeles, Calif.(s)
KMLB-FM Monroe, La.(s)
KMMK Little Rock, Ark.
KMOD-FM Midland, Tex.
KMOX-FM St. Louis, Mo.
KMPX San Francisco, Calif.(s)
KMUW Wichita, Kans.
KMYC-FM Marysville, Calif.
KMUZ Santa Barbara, Calif.(s)
KNBR-FM San Francisco, Calif.
KNDE-FM Aztec, N.Mex.
KNDX Yakima, Wash.
KNEB-FM Scottsbluff, Nebr.
KNER Dallas, Tex.
KNEV Reno, Nev.
KNEW-FM Scottsbluff, Nebr.
KNFM Midland, Tex.
KNIK-FM Anchorage, Alaska
KNIX Phoenix, Ariz.(s)
KNOB Long Beach, Calif.
KNOF St. Paul, Minn.
KNTO Wichita Falls, Tex.(s)
KNX-FM Los Angeles, Calif.
KOA-FM Denver, Colo.
KOAP-FM Portland, Ore.
KOCW Tulsa, Okla.(s)
KODA-FM Houston, Tex.(s)
KOGM-FM Tulsa, Okla
KOGO San Diego, Calif.
KOIN-FM Portland, Oreg.
KOKH Oklahoma City, Okla.
KOL-FM Seattle, Wash.
KONG-FM Visalia, Calif.(s)
KODL-FM Phoenix, Ariz.
KORK Las Vegas, Nev.(s)
KOSE-FM Osceola, Ark.
KOST Dallas, Tex.
KOSU-FM Stillwater, Okla.(s)
KOTN-FM Pine Bluff, Ark.
KOY-FM Phoenix, Ariz.
KOZE-FM Lewiston, Idaho
KPAT Albuquerque, N. Mex.
KPCS Pasadena, Calif.
KPDQ-FM Portland, Ore.
KPEN Atherton, Calif.(s)
KPFA Berkeley, Calif.
KPFB Berkeley, Calif.
KPFK Los Angeles, Calif.
KPFM Portland, Oreg.(s)
KPGM Los Altos, Calif.
KPLR-FM St. Louis, Mo.
KPOI-FM Honolulu, Hawaii
KPOJ-FM Portland, Oreg.
KPOL-FM Los Angeles, Calif.(s)
KPPC-FM Pasadena, Calif.
KPPS-FM Parsons, Kans.
KPRI San Diego, Calif.(s)
KPRN Seattle, Wash.
KPSD Dallas, Tex.
KQAL-FM Omaha, Nebr.(s)
KQBY-FM San Francisco, Calif.
KQFM Portland, Oreg.
KQIP Odessa, Tex.
KQRO Dallas, Tex.
KQUE Houston, Tex.
KQV-FM Pittsburgh, Pa.
KQXR Bakersfield, Calif.
KRAK-FM Stockton, Calif.
KRAM-FM Las Vegas, Nev.
KRAV Tulsa, Okla.(s)
KRBE Houston, Tex.(s)
KRCC Colorado Springs, Colo.
KRCW Santa Barbara, Calif.
KRE-FM Berkeley, Calif.
KREM-FM Spokane, Wash.

C.L.	Location
KREX-FM	Grand Junction, Colo.
KRFM	Fresno, Calif.
KRHM	Los Angeles, Calif. (s)
KRKD-FM	Los Angeles, Calif.
KRKH-FM	Lubbock, Tex.
KRKY	Denver, Colo.
KRLD-FM	Dallas, Tex.
KRMD-FM	Shreveport, La.
KRNW	Boulder, Colo.
KRNY-FM	Kearney-Holdrege, Nebraska
KRON-FM	San Francisco, Calif.
KROS-FM	Clinton, Iowa
KROW	Santa Barbara, Calif.
KROY-FM	Sacramento, Calif.
KRPM	San Jose, Calif.
KRRC	San Jose, Calif.
KRSI	Minneapolis, Minn. (s)
KRSI-FM	St. Louis Park, Minn.
KRSN-FM	Los Alamos, N.Mex.
KRVM	Eugene, Oreg.
KRVN-FM	Lexington, Nebr.
KSCO	Santa Cruz, Calif.
KSBW-FM	Salinas, Calif.
KSDA	La Sierra, Calif.
KSDB-FM	Manhattan, Kans.
KSDS	San Diego, Calif.
KSEA	San Diego, Calif.
KSEO-FM	Durant, Okla.
KSFM	Dallas, Tex. (s)
KSFR	San Francisco, Calif. (s)
KSFV	San Fernando, Calif.
KSFX	San Francisco, Calif.
KSHE	Crestwood, Mo. (s)
KSHS	Colorado Springs, Colo.
KSJO-FM	San Jose, Calif. (s)
KSL-FM	Salt Lake City, Utah (s)
KSLA	Seattle, Wash. (s)
KSLH	St. Louis, Mo.
KSLT	Tyler, Tex.
KSMA-FM	Santa Maria, Calif.
KSO-FM	Des Moines, Iowa
KSOM	Tucson, Ariz.
KSPC	Claremont, Calif.
KSPI-FM	Stillwater, Okla.
KSPL-FM	Diboll, Tex.
KSRF	Santa Monica, Calif.
KSTE	Emporia, Kans.
KSTL-FM	St. Louis, Mo.
KSTN-FM	Stockton, Calif.
KSUI	Iowa City, Iowa
KSWI-FM	Omaha, Nebr.
KSYN	Joplin, Mo. (s)
KTAL	Texarkana, Tex.
KTAP	Tucson, Ariz.
KTAR-FM	Phoenix, Ariz.
KTBC-FM	Austin, Tex. (s)
KTCF	Cedar Falls, Iowa
KTEC	Oretech, Oreg.
KTGM	Denver, Colo.
KTIM	San Rafael, Calif.
KTIS-FM	Minneapolis, Minn.
KTJO-FM	Ottawa, Kans.
KTNT-FM	Tacoma, Wash.
KTOD	Mt. Pleasant, Tex. (s)
KTOP-FM	Topeka, Kans.
KTOY	Tacoma, Wash.
KTPM	Sun City, Ariz. (s)
KTRB-FM	Modesto, Calif.
KTRH-FM	Houston, Tex.
KTSM-FM	El Paso, Tex.
KTSR	Kansas City, Mo.
KTTS-FM	Springfield, Mo.
KTWR	Tacoma, Wash.
KTXR-FM	Springfield, Mo. (s)
KTXT-FM	Lubbock, Tex.
KTYM-FM	Inglewood, Calif.
KUDE-FM	Oceanside, Calif.
KUDU-FM	Ventura-Oxnard, Calif. (s)
KUER	Salt Lake City, Utah
KUFM	El Cajon, Calif.
KUFY	Redwood City, Calif.
KUGN-FM	Eugene, Oreg.
KUHF	Houston, Tex.
KUMD-FM	Duluth, Minn.
KUOA-FM	Siloam Springs, Ark.
KUOH	Honolulu, Hawaii
KUOW	Seattle, Wash.
KUPD-FM	Tempe, Ariz.
KUSC	Los Angeles, Calif.
KUSN-FM	St. Joseph, Mo.
KUT-FM	Austin, Tex.
KUTE	Glendale, Calif.
KVCR	San Bernardino, Calif.
KVEC-FM	San Luis Obispo, Calif. (s)
KVEN-FM	Ventura, Calif.
KVFM	San Hernando, Calif.
KVIL	Highland Pk., Tex. (s)
KVOF-FM	El Paso, Tex.
KVOK	Honolulu, Hawaii
KVOP-FM	Plainview, Tex.
KVOR-FM	Colorado Springs, Colo.
KVSC	Logan, Utah
KVTT	Dallas, Tex.
KWAR	Waverly, Iowa
KWAX	Eugene, Oreg.
KWFM	Minneapolis, Minn. (s)
KWG-FM	Stockton, Calif.
KWGS	Tulsa, Okla.
KWIX	St. Louis, Mo.
KWIZ-FM	Santa Ana, Calif.
KWJB-FM	Globe, Ariz.
KWKH-FM	Shreveport, La.
KWME	Walnut Creek, Calif. (s)
KWMO	Odessa, Tex.
KWOA-FM	Worthington, Minn.
KWOC-FM	Poplar Bluff, Mo.
KWPC-FM	Muscatine, Iowa
KWPM-FM	West Plains, Mo.
KXEL-FM	Waterloo, Iowa (s)
KXFM	Fort Worth, Tex.
KXJK-FM	Forrest City, Ark.
KXLU	Los Angeles, Calif.
KXOA	Sacramento, Calif.
KXQR	Fresno, Calif. (s)
KXRQ	Sacramento, Calif.
KXTR	Kansas City, Mo. (s)
KXYZ-FM	Houston, Tex. (s)
KYA-FM	San Francisco, Calif.
KYEW	Phoenix, Ariz.
KYFM	Oklahoma City, Okla.
KYSM-FM	Mankato, Minn.
KYW-FM	Cleveland, Ohio
KZAM	Seattle, Wash. (s)
KZFM	Cortez, Colo.
KZOM	Oklahoma City, Okla.
KZUN-FM	Opportunity, Wash
WAAB-FM	Worcester, Mass.
WAAM-FM	Parkersburg, W.Va.
WABC-FM	New York, N.Y.
WABE	Atlanta, Ga.
WABI-FM	Bangor, Maine
WABQ	Cleveland, Ohio
WABX	Detroit, Mich. (s)
WABZ-FM	Albemarle, N.C.
WACO	Waco, Tex.
WAEB-FM	Cincinnati, Ohio
WAEF	Syracuse, N.Y.
WAER	Syracuse, N.Y.
WAEZ	Miami Beach, Fla. (s)
WAHR-FM	Miami Beach, Fla.
WAIC	San Juan, P.R.
WAIR-FM	Winston-Salem, N.C.
WAIV	Indianapolis, Ind.
WAJC	Indianapolis, Ind.
WAJM	Montgomery, Ala.
WAJP	Joliet, Ill.
WAJR-FM	Morgantown, W.Va.
WAKR-FM	Akron, Ohio
WAKW-FM	Cincinnati, Ohio
WALK-FM	Patchogue, N.Y.
WAMC	Albany, N.Y.
WAMF	Amherst, Mass.
WAMO	Pittsburgh, Pa.
WAMU-FM	Washington, D.C.
WAPC-FM	Riverhead, N.Y. (s)
WAPI-FM	Birmingham, Ala.
WAPS	Akron, Ohio
WAQE-FM	Towson, Md. (s)
WARD-FM	Johnstown, Pa.
WARK-FM	Hagerstown, Md.
WARL-FM	Arlington, Va.
WARN-FM	Fort Pierce, Fla.
WASA-FM	Havre De Grace, Md.
WASH	Washington, D.C. (s)
WATR-FM	Waterbury, Conn.
WAUG-FM	Augusta, Ga.
WAUX-FM	Waukesha, Wis.
WAVI-FM	Dayton, Ohio
WAVQ	Atlanta, Ga.
WAVU-FM	Albertville, Ala.
WAVY-FM	Portsmouth, Va.
WAWZ-FM	Zarephath, N.J.
WAYL	Minneapolis, Minn. (s)
WAYZ-FM	Waynesboro, Pa.
WAZL-FM	Hazelton, Pa.
WBAA-FM	W. Lafayette, Ind.
WBAB-FM	Babylon, N.Y.
WBAI	New York, N.Y.
WBAP-FM	Ft. Worth, Tex. (s)
WBAY-FM	Green Bay, Wis.
WBBB-FM	Burlington, N.C. (s)
WBBC	Jackson, Mich.
WBBF-FM	Rochester, N.Y.
WBBM-FM	Chicago, Ill.
WBBO-FM	Forest City, N.C.
WBBQ-FM	Augusta, Ga.
WBBR-FM	E. St. Louis, Ill.
WBBS	Crawfordsville, Ind.
WBBW-FM	Youngstown, Ohio
WBCB-FM	Levittown-Fairless Hills, Pa.
WBCI-FM	Williamsburg, Va.
WBCM-FM	Bay City, Mich.
WBCN	Boston, Mass. (s)
WBEN-FM	Buffalo, N.Y.
WBET-FM	Brockton, Mass.
WBEU-FM	Beaufort, S.C. (s)
WBEX-FM	Chillicothe, Ohio
WBEZ	Chicago, Ill.
WBFG	Detroit, Mich.
WBFM	New York, N.Y.
WBFO	Buffalo, N.Y.
WBGM	Tallahassee, Fla.
WBGO	Newark, N.J.
WBGU	Bowling Green, Ohio
WBIE-FM	Marietta, Ga.
WBIR-FM	Knoxville, Tenn.
WBIV	Wethersfield, N.Y.
WBJC	Baltimore, Md.
WBKV-FM	West Bend, Wis. (s)
WBKW	Beckley, W.Va.
WBKY	Lexington, Ky.
WBLY-FM	Springfield, Ohio
WBMI	Meridan, Conn. (s)
WBNS-FM	Columbus, Ohio (s)
WBOE	Cleveland, Ohio
WBOR	Brunswick, Maine
WBOS-FM	Brookline, Mass.
WBRB-FM	Mt. Clements, Mich.
WBRC	Birmingham, Ala.
WBRE-FM	Wilkes-Barre, Pa.
WBSM-FM	New Bedford, Mass.
WBST	Muncie, Ind.
WBT-FM	Charlotte, N.C. (s)
WBUD-FM	Trenton, N.J. (s)
WBUF	Buffalo, N.Y.
WBUR	Boston, Mass.
WBUT-FM	Butler, Pa.
WBUY-FM	Lexington, N.C.
WBVA	Woodbridge, Va.
WBVP-FM	Beaver Falls, Pa.
WBWC	Berea, Ohio
WBZ-FM	Boston, Mass.
WCAC	Anderson, S.C.
WCAO-FM	Baltimore, Md.
WCAU-FM	Philadelphia, Pa.
WCBC-FM	Anderson, Ind.
WCBE	Columbus, Ohio
WCBM-FM	Baltimore, Md.
WCBS-FM	New York, N.Y.
WCCC-FM	Hartford, Conn.
WCCV-FM	Charlottesville, Va.
WCED-FM	Dubois, Pa.
WCEN-FM	Mt. Pleasant, Mich. (s)
WCFM	Williamstown, Mass.
WCHA-FM	Chambersburg, Pa. (s)
WCHD	Detroit, Mich.
WCKR-FM	Miami, Fla.
WCLE-FM	Cleveland, Tenn.
WCLI-FM	Corning, N.Y.
WCLM	Chicago, Ill.
WCLO-FM	Janesville, Wis.
WCLT-FM	Newark, Ohio
WCLW-FM	Mansfield, Ohio
WCMC-FM	Wildwood, N.J.
WCME-FM	Brunswick, Maine
WCMF-FM	Rochester, N.Y. (s)
WCMI-FM	Ashland, Ky.
WCMO	Marietta, Ohio
WCMR-FM	Elkhart, Ind.
WCNB-FM	Connersville, Ind.
WCNO	Canton, Ohio (s)
WCOD	Richmond, Va.
WCOH-FM	Newnan, Ga.
WCOL-FM	Columbus, Ohio
WCOP-FM	Boston, Mass.
WCOS-FM	Columbia, S.C.
WCOU-FM	Lewiston, Maine
WCOW-FM	Sparta, Wis.
WCPO-FM	Cincinnati, Ohio
WCPS-FM	Tarbor, N.C.
WCRB-FM	Waltham, Mass. (s)
WCRF-FM	Cleveland, Ohio
WCRT-FM	Birmingham, Ala. (s)
WCSC-FM	Charleston, S.C.
WCSI-FM	Columbus, Ind. (s)
WCSQ	Central Square, N.Y.
WCTA-FM	Andalusia, Ala.
WCTC-FM	New Brunswick, N.J.
WCTM	Eaton, Ohio
WCTW-FM	New Castle, Ind.
WCUE-FM	Akron, Ohio
WCUM-FM	Cumberland, Md.
WCUY-FM	Cleveland Hts., Ohio
WCWM	Williamsburg, Va.
WDAC	Lancaster, Pa.
WDAE-FM	Tampa, Fla.
WDAF-FM	Kansas City, Mo.
WDAS-FM	Philadelphia, Pa.
WDBJ-FM	Roanoke, Va.
WDBN	Akron, Ohio (s)
WDBO-FM	Orlando, Fla.
WDBQ-FM	Dubuque, Iowa
WDCX	Buffalo, N.Y. (s)
WDDE	Hamden, Conn.
WDDS-FM	Syracuse, N.Y.
WDEL-FM	Wilmington, Del.
WDET-FM	Detroit, Mich.
WDFM	State College, Pa.
WDGO	Cleveland, Ohio (s)
WDHA-FM	Dover, N.J. (s)
WDHF	Chicago, Ill.
WDIA-FM	Memphis, Tenn.
WDJK	Atlanta, Ga.
WDJR	Oil City, Pa.
WDMB-FM	Statesville, N.C.
WDNC-FM	Durham, N.C.
WDOC-FM	Prestonsburg, Ky.
WDOD-FM	Chattanooga, Tenn.
WDOK-FM	Cleveland, Ohio
WDOV-FM	Dover, Del.
WDRC-FM	Hartford, Conn.
WDRK-FM	Greenville, Ohio
WDSC-FM	Dillon, S.C.
WDSU-FM	New Orleans, La.
WDTM	Detroit, Mich. (s)
WDTR	Detroit, Mich.
WDUB	Granville, Ohio
WDUN-FM	Gainesville, Ga. (s)
WDUQ	Pittsburgh, Pa.
WDUZ-FM	Green Bay, Wis.
WDWS-FM	Champaign, Ill.
WEAV-FM	Plattsburgh, N.Y.
WEAW-FM	Evanston, Ill.
WEBH	Chicago, Ill.
WEBQ-FM	Harrisburg, Ill.
WEBR-FM	Buffalo, N.Y.
WECW	Elmira, N.Y.
WEDK	Springfield, Mass.
WEEC	Springfield, Ohio
WEEO-FM	Rocky Mount, N.C.
WEEI-FM	Boston, Mass.
WEEP-FM	Pittsburgh, Pa.
WEEX-FM	Easton, Pa.
WEFA	Waukegan, Ill.
WEFM	Chicago, Ill. (s)
WEGO-FM	Concord, N.C.
WEHS	Chicago, Ill.
WEIV	Ithaca, N.Y.
WEKZ-FM	Monroe, Wis.
WELF	Glen Ellyn, Ill.
WELG	Elgin, Ill.
WEMC	Harrisonburg, Va.
WEMP-FM	Milwaukee, Wis.
WENR-FM	Chicago, Ill.
WEOK-FM	Poughkeepsie, N.Y.
WEOL-FM	Elyria, Ohio
WEPM-FM	Martinsburg, W.Va.
WEPS	Elgin, Ill.
WEQR	Goldsboro, N.C.
WERC-FM	Erie, Pa.
WERE-FM	Cleveland, Ohio
WERI-FM	Westerly, R.I.
WERS	Boston, Mass.
WERT-FM	Van Wert, Ohio
WESC-FM	Greenville, S.C.
WEST-FM	Easton, Pa.
WETL	South Bend, Ind.
WETN	Wheaton, Ill.
WEVC	Evansville, Ind
WEVD-FM	New York, N.Y.
WEWO-FM	Laurinburg, N.C.
WFAA-FM	Dallas, Tex.
WFAH-FM	Alliance, Ohio
WFAN	Washington, D.C.
WFAS-FM	White Plains, N.Y.
WFAU-FM	Augusta, Maine
WFAW	Fort Atkinson, Wis.
WFBC-FM	Greenville, S.C.
WFBE	Flint, Mich.
WFBG-FM	Altoona, Pa.
WFBM-FM	Indianapolis, Ind.
WFBS-FM	Winston-Salem, N.C.
WFCI	Franklin, Ind.
WFCJ	Miamisburg, Ohio
WFCR	Amherst, Mass.
WFDS-FM	Baltimore, Md.
WFFM	Cincinnati, Ohio
WFGM-FM	Fitchburg, Mass.
WFHA-FM	Red Bank, N.J.
WFHR-FM	Wisconsin Rapids, Wis.
WFID	Rio Piedras, P.R. (s)
WFIG	Sumter, S.C.
WFIL-FM	Philadelphia, Pa.
WFIN-FM	Findlay, Ohio (s)
WFIU	Bloomington, Ind.
WFKO	Kokomo, Ind.
WFLA-FM	Tampa, Fla.
WFLM	Ft. Lauderdale, Fla. (s)
WFLN-FM	Philadelphia, Pa. (s)
WFLO	Farmville, Va.
WFLT-FM	Franklin, Tenn.
WFLY	Troy, N.Y.
WFMA	Rocky Mount, N.C.
WFMB	Nashville, Tenn.
WFMD-FM	Frederick, Md.
WFME	Detroit, Mich.
WFMF	Chicago, Ill.
WFMG	Gallatin, Tenn.
WFMH-FM	Cullman, Ala.
WFMI	Montgomery, Ala.
WFML	Washington, Ind.
WFMM-FM	Baltimore, Md.
WFMQ	Chicago, Ill. (s)
WFMS	Indianapolis, Ind.
WFMT	Chicago, Ill. (s)
WFMU	East Orange, N.J.
WFMW-FM	Madisonville, Ky.
WFMX	Statesville, N.C.
WFMZ	Allentown, Pa.
WFNC-FM	Fayetteville, N.C.
WFNS-FM	Burlington, N.C.
WFNY	Racine, Wis.
WFOB-FM	Fostoria, Ohio
WFOL	Hamilton, Ohio (s)
WFOS	South Norfolk, Va.
WFPG	Atlantic City, N.J.
WFPK	Louisville, Ky.
WFPL	Louisville, Ky.
WFQM	San Juan, P.R.
WFRO-FM	Fremont, Ohio
WFST-FM	Caribou, Maine
WFSU-FM	Tallahassee, Fla.
WFUL-FM	Fulton, Ky.
WFUR-FM	Grand Rapids, Mich.
WFUV	New York, N.Y.
WFVA-FM	Fredericksburg, Va.
WGAL-FM	Lancaster, Pa.
WGAR-FM	Cleveland, Ohio
WGAU-FM	Athens, Ga. (s)
WGAY	Silver Spring, Md.
WGBH-FM	Cambridge, Mass. (s)
WGBI-FM	Scranton, Pa.
WGBS-FM	Miami, Fla.
WGCB-FM	Red Lion, Pa.
WGCS	Goshen, Ind.
WGEM-FM	Quincy, Ill. (s)
WGET-FM	Gettysburg, Pa.
WGFM	Schenectady, N.Y. (s)
WGGC	Glasgow, Ky.
WGGM	Taylorville, Ill.
WGH-FM	Newport News, Va.
WGHF	Newton, Conn. (s)
WGHJ	Lawrence, Mass.
WGKA-FM	Atlanta, Ga.
WGLM	Richmond, Ind.
WGMR	Tyrone, Pa.
WGMS-FM	Washington, D.C.
WGMZ	Flint, Mich. (s)
WGNB	St. Petersburg, Fla.
WGNC-FM	Gastonia, N.C.
WGPA-FM	Bethlehem, Ga.
WGPM	Detroit, Mich.
WGPR-FM	Detroit, Mich. (s)
WGPS	Greensboro, N.C.
WGR-FM	Buffalo, N.Y.
WGRE	Greencastle, Ind.

C.L.	Location
WGRV-FM	Greeneville, Tenn.
WGTB-FM	Washington, D.C.
WGTS-FM	Takoma Park, Md.
WGUC	Cincinnati, Ohio
WGVE	Gary, Ind.
WGWR-FM	Asheboro, N.C.
WGYA	Interlochen, Mich.
WHA-FM	Madison, Wis.
WHAD	Delafield, Wis.
WHAI-FM	Greenfield, Mass.
WHAT-FM	Philadelphia, Pa.(s)
WHAV-FM	Haverhill, Mass.
WHBC-FM	Canton, Ohio
WHBF-FM	Rock Island, Ill.(s)
WHBI	Newark, N.J.
WHBM-FM	Xenia, Ohio
WHCI	Hartford City, Ind.
WHCN	Hartford, Conn.
WHCU-FM	Ithaca, N.Y.
WHDH-FM	Boston, Mass.
WHDL-FM	Allegheny, N.Y.
WHEN-FM	Syracuse, N.Y.
WHFB-FM	Benton Harbor, Mich.
WHFI	West Paterson, N. J.
WHFM	Rochester, N.Y.
WHFS	Bethesda, Md.(s)
WHHI	Highland, Wis.
WHHS	Havertown, Pa.
WHIL-FM	Medford, Mass.
WHIM-FM	Providence, R.I.
WHIO-FM	Dayton, Ohio
WHIZ-FM	Zanesville, Ohio
WHK-FM	Cleveland, Ohio
WHKP-FM	Hendersonville, N.C.
WHKW	Chilton, Wis.
WHKY-FM	Hickory, N.C.
WHLA	Holmen, Wis.
WHLD-FM	Niagara Falls, N. Y.
WHLI-FM	Hempstead, N.Y.
WHLM-FM	Bloomsburg, Pa.
WHMA-FM	Anniston, Ala.
WHNC-FM	Henderson, N.C.
WHO-FM	Des Moines, Iowa
WHOH	Hamilton, Ohio
WHOK-FM	Lancaster, Ohio
WHOM-FM	New York, N.Y.
WHOO-FM	Orlando, Fla.(s)
WHOS-FM	Decatur, Ala.
WHP-FM	Harrisburg, Pa.
WHPE-FM	High Point, N.C.
WHPR	Highland Park, Mich.
WHPS	High Point, N.C.
WHRB-FM	Cambridge, Mass.
WHRM	Wausau, Wis.
WHSA	Highland Twp., Wis.
WHSR-FM	Winchester, Mass.
WHTG-FM	Eatontown, N.J.
WHUS	Storrs, Conn.
WHWC	Colfax, Wis.
WHYL-FM	Carlisle, Pa.
WHYN-FM	Springfield, Mass.
WHYY	Philadelphia, Pa.
WIAL	Eau Claire, Wis.
WIAM-FM	Williamston, N.C.
WIAN	Indianapolis, Ind.
WIBA-FM	Madison, Wis.
WIBC-FM	Indianapolis, Ind.
WIBG-FM	Philadelphia, Pa.
WICB	Ithaca, N.Y.
WICR	Indianapolis, Ind.
WIFE	Buffalo, N.Y.
WIFI	Glenside, Pa.(s)
WIFM-FM	Elkin, N.C.
WIKY-FM	Evansville, Ind.
WIL-FM	St. Louis, Mo.
WILL-FM	Urbana, Ill.
WILO-FM	Frankfort, Ind.
WIMA-FM	Lima, Ohio
WINA-FM	Charlottesville, Va.
WINE-FM	Kenmore, N.Y.
WINF-FM	Manchester, Conn.
WINZ-FM	Miami, Fla.
WIP-FM	Philadelphia, Pa.
WIPR-FM	San Juan, P.R.
WIRA-FM	Ft. Pierce, Fla.
WIRQ	Rochester, N.Y.
WISH-FM	Indianapolis, Ind.(s)
WISK	Medford, Mass.
WISM-FM	Madison, Wis.(s)
WISN-FM	Milwaukee, Wis.
WIST-FM	Charlotte, N.C.
WITA-FM	San Juan, P.R.
WITH-FM	Baltimore, Md.
WITZ-FM	Jasper, Ind.
WIUS	Christiansted, V.I.
WJAC-FM	Johnstown, Pa.(s)
WJAS-FM	Pittsburgh, Pa.
WJAX-FM	Jacksonville, Fla.
WJBC-FM	Bloomington, Ill.
WJBK-FM	Detroit, Mich.
WJBL-FM	Holland, Mich.
WJBO-FM	Baton Rouge, La.
WJBR	Wilmington, Del.(s)
WJCD-FM	Seymour, Ind.
WJDX-FM	Jackson, Miss.
WJEF-FM	Grand Rpds., Mich.(s)
WJEH-FM	Gallipolis, Ohio
WJEJ-FM	Hagerstown, Md.
WJGS	Houghton, Mich.
WJHL-FM	Johnson City, Tenn.
WJIG-FM	Tullahoma, Tenn.(s)
WJIM-FM	Lansing, Mich.
WJIV	Cherry Valley, N.Y.
WJJD-FM	Chicago, Ill.
WJLK-FM	Asbury Park, N.J.
WJLN	Birmingham, Ala.
WJMC-FM	Rice Lake, Wis.
WJMD	Bethesda, Md.(s)
WJOF	Athens, Ala.
WJOL-FM	Joliet, Ill.(s)
WJR-FM	Detroit, Mich.
WJRZ	Newark, N.J.
WJTN-FM	Jamestown, N.K.
WJW-FM	Cleveland, Ohio
WJWR	Palmyra, Pa.
WJZZ	Bridgeport, Conn.
WKAK	Kankakee, Ill.
WKAQ-FM	San Juan, P.R.
WKAR-FM	E. Lansing, Mich.
WKAT-FM	Miami, Fla.
WKAY-FM	Glasgow, Ky.
WKAZ-FM	Charleston, W.Va.
WKBC-FM	N. Wilkesboro, N.C.
WKBN-FM	Youngstown, Ohio
WKBR-FM	Manchester, N.H.
WKBV-FM	Richmond, Ind.
WKCQ	Berlin, N.H.
WKCR-FM	New York, N.Y.
WKCS	Knoxville, Tenn.
WKDN-FM	Camden, N.J.
WKEE-FM	Huntington, W.Va.
WKET-FM	Kettering, Ohio(s)
WKFM	Chicago, Ill.(s)
WKIC-FM	Hazard, Ky.
WKIP-FM	Poughkeepsie, N.Y.
WKIS-FM	Orlando, Fla.
WKIX-FM	Raleigh, N.C.
WKJF	Pittsburgh, Pa.(s)
WKLF-FM	Clanton, Ala.
WKLS	Marietta, Ga.(s)
WKLW-FM	Grand Rapids, Mich.
WKMH-FM	Dearborn, Mich.
WKNA	Charleston, W.Va.(s)
WKOF	Hopkinsville, Ky.
WKOK-FM	Sunbury, Pa.
WKOP-FM	Binghamton, N.Y.
WKOX-FM	Framingham, Mass.
WKPT-FM	Kingsport, Tenn.(s)
WKRC-FM	Cincinnati, Ohio
WKRG-FM	Mobile, Ala.
WKRT-FM	Cortland, N.Y.
WKSD	Kewanee, Ill.
WKSU-FM	Kent, Ohio
WKTM	N. Charleston, S.C.
WKTM-FM	Mayfield, Ky.(s)
WKWK-FM	Wheeling, W.Va.
WKYB-FM	Paducah, Ky.
WLAD-FM	Danbury, Conn.
WLAG-FM	LaGrange, Ga.
WLAN-FM	Lancaster, Pa.
WLAP-FM	Lexington, Ky.
WLAV-FM	Grand Rapids, Mich.
WLBG-FM	Laurens-Clinton, S.C.
WLBH-FM	Mattoon, Ill.
WLBR-FM	Lebanon, Pa.
WLDM	Oak Park, Mich.(s)
WLDS-FM	Jacksonville, Ill.
WLEC-FM	Sandusky, Ohio
WLET-FM	Toccoa, Ga.
WLFM	Appleton, Wis.
WLIN	Merrill, Wis.
WLIR	Hicksville, N.Y.(s)
WLKR-FM	Norwalk, Ohio
WLLH-FM	Lowell, Mass.
WLNA-FM	Peekskill, N.Y.
WLOA-FM	Braddock, Pa.(s)
WLOB-FM	Portland, Maine
WLOE-FM	Leaksville, N.C.
WLOL-FM	Minneapolis, Minn.
WLOM	Chattanooga, Tenn.
WLOS-FM	Asheville, N.C.
WLOV	Cranston, R.I.
WLRJ	Roanoke, Va.
WLVL	Louisville, Ky.
WLYC-FM	Williamsport, Pa.
WMAL-FM	Washington, D.C.
WMAM-FM	Marinette, Wis.
WMAQ-FM	Chicago, Ill.(s)
WMAS-FM	Springfield, Mass.
WMAX-FM	Grand Rapids, Mich.
WMAZ-FM	Macon, Ga.
WMBD-FM	Peoria, Ill.
WMBI-FM	Chicago, Ill.
WMBM	Miami Beach, Fla.
WMBO-FM	Auburn, N.Y.
WMBR-FM	Jacksonville, Fla.
WMCF	Memphis, Tenn.
WMCO	New Concord, Ohio
WMCR	Kalamazoo, Mich.
WMDE	Greensboro, N.C.(s)
WMEB-FM	Orono, Maine
WMER	Celina, Ohio
WMEV-FM	Marion, Va.
WMFM	Madison, Wis.(s)
WMFP	Ft. Lauderdale, Fla.
WMFR-FM	High Point, N.C.
WMGW-FM	Meadville, Pa.
WMHC	South Hadley, Mass.
WMHE	Toledo, Ohio
WMIL-FM	Milwaukee, Wis.
WMIT	Marion, N.C.
WMIV	S. Bristol, N.Y.
WMIX-FM	Mt. Vernon, Ill.
WMLS-FM	Sylacauga, Ala.
WMLW	Milwaukee, Wis.
WMNA-FM	Gretna, Va.
WMPS-FM	Memphis, Tenn.
WMRI-FM	Marion, Ind.
WMRN-FM	Marion, Ohio
WMRO-FM	Aurora, Ill.
WMRT	Lansing, Mich.
WMSP	Harrisburg, Pa.
WMSR-FM	Manchester, Tenn.
WMTH	Park Ridge, Ill.
WMTI	Norfolk, Va.
WMTW-FM	Mt. Washington, N.H.(s)
WMUA	Amherst, Mass.
WMUB	Oxford, Ohio
WMUL	Huntington, W.Va.
WMUN	Muncie, Ind.
WMUU-FM	Greenville, S.C.
WMUZ	Detroit, Mich.
WMVA-FM	Martinsville, Va.(s)
WMVB-FM	Millville, N.J.
WMVO-FM	Mount Vernon, Ohio
WMZK	Detroit, Mich.
WNAD-FM	Norman, Okla.
WNAS	New Albany, Ind.
WNAV-FM	Annapolis, Md
WNBC-FM	New York, N.Y.
WNBD-FM	Daytona Beach, Fla.
WNBF-FM	Binghamton, N.Y.
WNBH-FM	New Bedford, Mass.
WNCN	New York, N.Y.
WNCO-FM	Ashland, Ohio
WNDA	Huntsville, Ala.(s)
WNDU-FM	South Bend, Ind.
WNEM-FM	Bay City, Mich.(s)
WNES-FM	Central City, Ky.
WNEW-FM	New York, N.Y.
WNEX-FM	Macon, Ga.
WNFO-FM	Nashville, Tenn.(s)
WNGO-FM	Mayfield, Ky.
WNHC-FM	New Haven, Conn.
WNIB	Chicago, Ill.
WNIC	DeKalb, Ill.
WNNJ-FM	Newton, N.J.
WNOB	Cleveland, Ohio(s)
WNOK-FM	High Point, N.C.
WNOR-FM	Norfolk, Va.
WNOS-FM	High Point, N.C.
WNOW-FM	York, Pa.
WNSH	Highland Park, Ill.
WNSL-FM	Laurel, Miss.
WMTH	Winnetka, Ill.
WNTI	Hackettstown, N.J.
WNUR	Evanston, Ill.
WNWC-FM	Arlington Hts., Ill.
WNYC-FM	New York, N.Y.
WNYE	New York, N.Y.
WOAK	Royal Oak, Mich.
WOAY-FM	Oak Hill, W.Va.
WOBN	Westerville, Ohio
WOC-FM	Davenport, Iowa
WOCB-FM	W. Yarmouth, Mass.
WOHS-FM	Shelby, N.C.
WOI-FM	Ames, Iowa
WOIO	Cincinnati, Ohio
WOIV	De Ruyter, N.Y.
WOKZ-FM	Alton, Ill.
WOL-FM	Washington, D.C.
WOMC	Royal Oak, Mich.(s)
WOMI-FM	Owensboro, Ky.
WOMP-FM	Bellaire, Ohio
WONO	Syracuse, N.Y.
WOOO-FM	Grand Rapids, Mich.(s)
WOPA-FM	Oak Park, Ill.
WOPI-FM	Bristol, Tenn.
WOR-FM	New York, N.Y.
WORA-FM	Mayaguez, P.R.
WORX-FM	Madison, Ind.
WOSC-FM	Fulton, N.Y.
WOSJ-FM	Atlantic City, N.J.
WOSU-FM	Columbus, Ohio
WOTW-FM	Nashua, N.H.
WOUB-FM	Athens, Ohio
WOW-FM	Omaha, Nebr.
WOXR	Oxford, Ohio
WPAC-FM	Patchogue, N.Y.(s)
WPAD-FM	Paducah, Ky.
WPAT-FM	Paterson, N.J.
WPAY-FM	Portsmouth, Ohio (s)
WPBC-FM	Minneapolis, Minn.
WPBS	Philadelphia, Pa.
WPCA-FM	Philadelphia, Pa.
WPEL-FM	Montrose, Pa.
WPEN-FM	Philadelphia, Pa.
WPEX-FM	Pensacola, Fla.(s)
WPFB-FM	Middletown, Ohio(s)
WPFM	Providence, R.I.(s)
WPFR	Terre Haute, Ind.
WPGO-FM	Bradbury Hts., Md.
WPGI	Pittsburgh, Pa.
WPIC-FM	Sharon, Pa.
WPIT-FM	Pittsburgh, Pa.
WPJB-FM	Providence, R.I.
WPKM	Tampa, Fla.
WPLB	Greenville, Mich.
WPLM-FM	Plymouth, Mass.
WPLO-FM	Atlanta, Ga.
WPPA-FM	Pottsville, Pa.
WPRB	Princeton, N.J.
WPRK	Winter Park, Fla.
WPRM	San Juan, P.R.
WPRO-FM	Providence, R.I.
WPRS-FM	Paris, Ill.
WPRW-FM	Manassas, Va.
WPSR	Evansville, Ind.
WPTF-FM	Raleigh, N.C.
WPTH	Fort Wayne, Ind.
WPTW-FM	Piqua, Ohio
WPWT	Philadelphia, Pa.
WQAL	Philadelphia, Pa.(s)
WQDC-FM	Midland, Mich.(s)
WQFM	Milwaukee, Wis.
WQMF	Babylon, N.Y.(s)
WQMG	Greensboro, N.C.(s)
WQMS	Hamilton, Ohio
WQRS-FM	Detroit, Mich.
WQXI-FM	Atlanta, Ga.
WQXR-FM	New York, N.Y.(s)
WQXT-FM	Palm Beach, Fla.
WRAJ-FM	Anna, Ill.
WRAK-FM	Williamsport, Pa.
WRAL-FM	Raleigh, N.C.
WRAY-FM	Princeton, Ind.
WRBL-FM	Columbus, Ga.
WRBS	Baltimore, Md.
WRC-FM	Washington, D.C.
WRCM	New Orleans, La.
WRED	Youngstown, Ohio
WREO-FM	Ashtabula, Ohio
WREV-FM	Reidsville, N.C.
WRFD-FM	Worthington-Columbus, Ohio
WRFK	Richmond, Va.
WRFL	Winchester, Va.
WRFM	Woodside, N.Y.
WRFS-FM	Alexander City, Ala.
WRFY-FM	Reading, Pa.
WRHS	Park Forest, Ill.
WRIT-FM	Milwaukee, Wis.
WRJN-FM	Racine, Wis.
WRJR	Lewiston, Maine
WRKO-FM	Boston, Mass.
WRKT-FM	Cocoa Beach, Fla.(s)
WRLB	Long Branch, N.J.(s)
WRLX	Hopkinsville, Ky.
WRLD-FM	Lanett, Ala.
WRMI-FM	Morris, Ill.
WRNJ	Atlantic City, N.J.
WRNL-FM	Richmond, Va.
WRNW	Mount Kisco, N.Y.
WROC-FM	Rochester, N.Y.
WROK-FM	Rockford, Ill.
WROW-FM	Albany, N.Y.
WROY-FM	Carmi, Ill.
WRPI	Troy, N.Y.
WRPN-FM	Ripon, Wis.
WRR-FM	Dallas, Tex.
WRRN	Warren, Pa.
WRSV	Skokie, Ill.
WRSW-FM	Warsaw, Ind.
WRTC-FM	Hartford, Conn.
WRTI-FM	Philadelphia, Pa.
WRUF-FM	Gainesville, Fla.
WRUN-FM	Utica, N.Y.
WRVA-FM	Richmond, Va.
WRVB-FM	Madison, Wis.
WRVC	Norfolk, Va.
WRVP	New York, N.Y.
WRWR	Port Clinton, Ohio(s)
WRXO-FM	Roxboro, N.C.
WRYT	Pittsburgh, Pa.
WSAB	Mt. Carmel, Ill.
WSAI-FM	Cincinnati, Ohio
WSAM-FM	Saginaw, Mich.
WSB-FM	Atlanta, Ga.(s)
WSBA-FM	York, Pa.
WSBC-FM	Chicago, Ill.(s)
WSBF-FM	Clemson, S.C.
WSCB	Springfield, Mass.
WSCH	Hartford, Conn.
WSEI	Effingham, Ill.
WSEV-FM	Sevierville, Tenn.
WSFM	Birmingham, Ala.(s)
WSHS	Floral Park, N.Y.
WSID	Baltimore, Md.
WSIM-FM	Salem, Ind.
WSIU	Carbondale, Ill.
WSIX-FM	Nashville, Tenn.(s)
WSJG	Hallandale, Fla.
WSJS-FM	Winston-Salem, N.C.
WSKS	Wabash, Ind.
WSLN	Delaware, Ohio
WSLS-FM	Roanoke, Va.(s)
WSMC-FM	Collegedale, Tenn.
WSMD-FM	Waldorf, Md.
WSMI-FM	Litchfield, Ill.
WSMJ	Greenfield, Ind.
WSNJ-FM	Bridgeton, N.J.
WSNW-FM	Seneca, S.C.
WSOC-FM	Charlotte, N.C.
WSOM	Salem, Ohio
WSON-FM	Henderson, Ky.
WSOU	S. Orange, N.J.
WSOY-FM	Decatur, Ill.
WSPA-FM	Spartanburg, S.C.(s)
WSPO-FM	Toledo, Ohio
WSPE	Springville, N.Y.
WSPT-FM	Stevens Point, Wis.
WSRW-FM	Hillsboro, Ohio
WSTC-FM	Stamford, Conn.
WSTP-FM	Salisbury, N.C.
WSTR-FM	Sturgis, Mich.
WSTV-FM	Steubenville, Ohio
WSVA-FM	Harrisonburg, Va.
WSVS-FM	Crewe, Va.
WSWM	East Lansing, Mich.(s)
WSYR-FM	Syracuse, N.Y.(s)
WTAD-FM	Quincy, Ill.
WTAG-FM	Worcester, Mass.
WTAR	Norfolk, Va.(s)
WTAX-FM	Springfield, Ill.
WTBC-FM	Tuscaloosa, Ala.
WTBO-FM	Cumberland, Md.
WTBS	Cambridge, Mass.
WTCX	St. Petersburg, Fla.(s)
WTDS	Toledo, Ohio
WTFM	Babylon, N.Y.(s)
WTHI-FM	Terre Haute, Ind.
WTHS	Miami, Fla.
WTIC-FM	Hartford, Conn.(s)
WTJS-FM	Jackson, Tenn.
WTJU	Charlottesville, Va.
WTMA-FM	Charleston, S.C.
WTMJ-FM	Milwaukee, Wis.(s)
WTNC-FM	Thomasville, N.C.

C.L.	Location
WTOA	Trenton, N.J.
WTOC-FM	Savannah, Ga.
WTOD-FM	Toledo, Ohio
WTOF	Canton, Ohio
WTOL-FM	Toledo, Ohio
WTOP-FM	Washington, D.C.
WTOS	Wauwatosa, Wis.
WTRC-FM	Elkhart, Ind.
WTSB-FM	Lumberton, N.C.
WTSV-FM	Claremont, N.H.
WTTC-FM	Towanda, Pa.
WTTR-FM	Westminster, Md.
WTTV-FM	Bloomington, Ind.
WTUN	Tampa, Fla.
WTVB-FM	Coldwater, Mich.
WTVN-FM	Columbus, Ohio
WUCB-FM	Chicago, Ill.
WUFM	Utica, N.Y.(s)
WULX-FM	Richmond, Ind.
WUNC	Chapel Hill, N.C.
WUOA	Tuscaloosa, Ala.
WUOM	Ann Arbor, Mich.
WUOT	Knoxville, Tenn.
WUPY	Lynn, Mass.(s)
WUSC-FM	Columbia, S.C.
WUST-FM	Bethesda, Md.
WUSV	Scranton, Pa.
WVAM-FM	Altoona, Pa.
WVBR-FM	Ithaca, N.Y.
WVCG-FM	Coral Gables, Fla.(s)
WVEC-FM	Hampton, Va.
WVGR-FM	Grand Rapids, Mich.
WVHC	Hempstead, N.Y.
WVJS-FM	Owensboro, Ky.
WVKC-FM	Galesburg, Ill.
WVKO-FM	Columbus, Ohio
WVLK-FM	Lexington, Ky.(s)
WVLN-FM	Olney, Ill.
WVMC-FM	Mt. Carmel, Ill.
WVNA-FM	Tuscumbia, Ala.
WVNJ-FM	Newark, N.J.
WVNO-FM	Mansfield, Ohio(s)
WVOT-FM	Wilson, N.C.
WVOX-FM	New Rochelle, N.Y.
WVSH	Huntington, Ind.
WVST	St. Petersburg, Fla.
WVTS	Terre Haute, Ind.(s)
WWCF	Greenfield, Wis.
WWCO-FM	Waterbury, Conn.
WWDC-FM	Washington, D.C.
WWGP-FM	Sanford, N.C.
WWHG-FM	Hornell, N.Y.
WWHI	Muncie, Ind.
WWIL-FM	Ft. Lauderdale, Fla.
WWJ-FM	Detroit, Mich.
WWKS	Macomb, Ill.
WWMT	New Orleans, La.(s)
WWOD-FM	Lynchburg, Va.
WWOL-FM	Buffalo, N.Y.
WWON-FM	Woonsocket, R.I.
WWPB	Miami, Fla.(s)
WWST-FM	Wooster, Ohio
WWSW-FM	Pittsburgh, Pa.
WWTV-FM	Cadillac, Mich.
WWVA-FM	Wheeling, W.Va.
WWWS	Greenville, N.C.
WWYN	Erie, Pa.
WXBR	Cocoa Beach, Fla.
WXCN	Providence, R.I.(s)
WXFM	Elmwood Park, Ill.
WXHR	Cambridge, Mass.
WXPN	Philadelphia, Pa.
WXRI	Norfolk, Va.
WXTC	Annapolis, Md.
WXTO-FM	Grand Rapids, Mich.
WXUR-FM	Media, Pa.
WXYZ-FM	Detroit, Mich.
WYAK	Sarasota, Fla.(s)
WYBC-FM	New Haven, Conn.
WYCA	Hammond, Ind.
WYCE	Warwick, R.I.
WYCR	York-Hanover, Pa.
WYFI	Norfolk, Va.(s)
WYFM	Charlotte, N.C.
WYFS	Winston-Salem, N.C.
WYRE-FM	Pittsburgh, Pa.
WYSO	Yellow Springs, Ohio
WYZZ	Wilkes-Barre, Pa.
WZIP-FM	Cincinnati, Ohio

Canadian FM Stations by Location

Location	C.L.	Mc.
Brampton, Ont.	CHIC-FM	102.1
Brantford, Ont.	CKPC-FM	92.1
Cornwall, Ont.	CJSS-FM	104.5
Edmonton, Alta.	CFRN-FM	100.3
	CJCA-FM	99.5
	CKUA-FM	98.1
Ft. William, Ont.	CKPR-FM	94.3
Halifax, N.S.	CHNS-FM	96.1
Kingston, Ont.	CFRC-FM	91.9
	CKLC-FM	99.5
	CKWS-FM	96.3
Kitchener, Ont.	CKCR-FM	96.7
Lethbridge, Alta.	CHEC-FM	100.9
London, Ont.	CFPL-FM	95.9
Montreal, Que.	CBF-FM	95.1
	CBM-FM	100.7
	CFCF-FM	106.5
Oshawa, Ont.	CKLB-FM	93.5
Ottawa, Ont.	CBO-FM	103.3
	CFMD-FM	93.9
Quebec, Que.	CHRC-FM	98.1
Rimouski, Que.	CJBR-FM	101.5
St. Catharines, Ont.	CKTB-FM	97.7
Sherbrooke, Que.	CHLT-FM	102.7
Timmins, Ont.	CKGB-FM	94.5
Toronto, Ont.	CBC-FM	99.1
	CFRB-FM	99.9
	CHFI-FM	98.1
	CJRT-FM	91.1
Vancouver, B.C.	CBU-FM	105.7
	CHQM-FM	103.5
Verdun, Que.	CKVL-FM	96.9
Victoria, B.C.	CKDA-FM	98.5
Windsor, Ont.	CKLW-FM	93.9
Winnipeg, Man.	CJOB-FM	97.5

Canadian FM Stations by Call Letters

C.L.	Location
CBC-FM	Toronto, Ont.
CBF-FM	Montreal, Que.
CBM-FM	Montreal, Que.
CBO-FM	Ottawa, Ont.
CBU-FM	Vancouver, B.C.
CFCF-FM	Montreal, Que.
CFPL-FM	London, Ont.
CFRA-FM	Ottawa, Ont.
CFRB-FM	Toronto, Ont.
CFRC-FM	Kingston, Ont.
CFRN-FM	Edmonton, Alta.
CHEC-FM	Lethbridge, Alta.
CHFI-FM	Toronto, Ont.
CHLT-FM	Sherbrooke, Que.
CHNS-FM	Halifax, N.S.
CHRC-FM	Quebec, Que.
CJBR-FM	Rimouski, Que.
CJCA-FM	Edmonton, Alta.
CJCB-FM	Sydney, N.S.
CJOB-FM	Winnipeg, Man.
CJRT-FM	Toronto, Ont.
CJSS-FM	Cornwall, Ont.
CKCR-FM	Kitchener, Ont.
CKDA-FM	Victoria, B.C.
CKGB-FM	Timmins, Ont.
CKLB-FM	Oshawa, Ont.
CKLC-FM	Kingston, Ont.
CKLW-FM	Windsor, Ont.
CKPC-FM	Brantford, Ont.
CKPR-FM	Ft. William, Ont.
CKSF-FM	Cornwall, Ont.
CKTB-FM	St. Catharines, Ont.
CKUA-FM	Edmonton, Alta.
CKVL-FM	Verdun, Que.
CKWS-FM	Kingston, Ont.

U. S. Television Stations

Territories and possessions follow states. Chan., channel number; asterisk (*) indicates educational station.

ALABAMA

Location	C.L.	Chan.
Andalusia	WDIQ	*2
Birmingham	WAPI-TV	13
	WBIQ	*10
	WBRC-TV	6
Decatur	WMSL-TV	23
Dothan	WTVY	4
Florence	WOWL	15
Huntsville	WAFG-TV	31
Mobile	WALA-TV	10
	WKRG-TV	5
Montgomery	WCOV-TV	20
	WSFA-TV	12
Munford	WCIQ	*7
Selma	WSLA	8

ALASKA

Location	C.L.	Chan.
Anchorage	KENI-TV	2
	KTVA	11
Fairbanks	KFAR-TV	2
	KTVF	11
Juneau	KINY-TV	8

ARIZONA

Location	C.L.	Chan.
Douglas	KCDA	3
Phoenix	KOOL-TV	10
	KAET	*8
	KPHO-TV	5
	KTVK	3
	KTAR-TV	12
Tucson	KGUN-TV	9
	KOLD-TV	13
	KVOA-TV	4
	KUAT	*6
Yuma	KIVA	11

ARKANSAS

Location	C.L.	Chan.
El Dorado	KTVE	10
Ft. Smith	KFSA-TV	5
Hot Springs	KFOY-TV	9
Little Rock	KARK-TV	4
	KTHV	11
	KATV	7
Texarkana	KCMC-TV	6

CALIFORNIA

Location	C.L.	Chan.
Bakersfield	KBAK-TV	29
	KERO-TV	23
	KLYD-TV	17
Chico	KHSL-TV	12
El Centro	XEM-TV	3
Eureka	KIEM-TV	3
	KVIQ-TV	6
Fresno	KFRE-TV	30
	KAIL	53
	KJEO	47
	KMJ-TV	24
Hanford	KDAS-TV	21
Los Angeles	KABC-TV	7
	KCOP	13
	KHJ-TV	9
	KMEX-TV	34
	KNXT	2
	KNBC	4
	KTLA	5
	KTTV	11
Oakland	KTVU	2
Redding	KVIP-TV	7
Sacramento	KXTV	10
	KCRA-TV	3
	KVUE	40
	KVIE	*6
Salinas	KSBW-TV	8
San Bernardino	KCHU-TV	18
	KCVR-TV	*24
San Diego	KFMB-TV	8
	KOGO-TV	10
(Tijuana, Mex.)	XETV	6
San Francisco	KGO-TV	7
	KPIX	5
	KQED	*9
	KRON-TV	4
	KEZE-TV	20
San Jose	KNTV	11
San Luis Obispo	KSBY-TV	6
San Mateo	KCSM-TV	14
Santa Barbara	KEY-T	3
Stockton	KOVR	13
Vista	KICV-TV	12

COLORADO

Location	C.L.	Chan.
Colorado Springs	KKTV	11
	KRDO-TV	13
Denver	KBTV	9
	KLZ-TV	7
	KOA-TV	4
	KRMA-TV	*6
	KTVR	2
Grand Junction	KREX-TV	5
Montrose	KREY-TV	10
Pueblo	KCSJ-TV	5

CONNECTICUT

Location	C.L.	Chan.
Bridgeport	WICC-TV	43
	WEDH	*24
Hartford	WTIC-TV	3
	WHCT-TV	18
New Britain	WHNB-TV	30
New Haven	WNHC-TV	8
Waterbury	WATR-TV	53

DIST. OF COLUMBIA

Location	C.L.	Chan.
Washington	WETA-TV	26
	WMAL-TV	7
	WRC-TV	4
	WTOP-TV	9
	WTTG	5

FLORIDA

Location	C.L.	Chan.
Daytona Beach	WESH-TV	2
Fort Pierce-Vero Beach	WTVI	19
Fort Myers	WINK-TV	11
Gainesville	WUFT	*5
Jacksonville	WFGA-TV	12
	WJCT	*7
	WJXT	4
Miami	WCKT	7
	WLBW-TV	10
	WTHS-TV	*2
	WTVJ	4
Orlando	WDBO-TV	6
	WLOF-TV	9
Palm Beach	WPTV	5
Panama City	WJDM-TV	7
Pensacola	WEAR-TV	3
St. Petersburg	WSUN-TV	38
Tallahassee	WFSU-TV	*11
Tampa	WFLA-TV	8
	WEDU	*3
	WTVT	13
W. Palm Beach	WEAT-TV	12

GEORGIA

Location	C.L.	Chan.
Albany	WALB-TV	10
Athens	WGTV	*8
Atlanta	WAGA-TV	5
	WAII-TV	11
	WSB-TV	2
	WETV	*30
Augusta	WJBF	6
	WRDW-TV	12
Columbus	WRBL-TV	3
	WTVM	9
Macon	WMAZ-TV	13
Savannah	WSAV-TV	3
	WEGA-TV	*9
	WTOC-TV	11
Thomasville	WCTV	6
Waycross	WEGS-TV	*8

HAWAII

Location	C.L.	Chan.
Hilo	KHBC-TV	9
	KHJK	13
Honolulu	KGMB-TV	9
	KTRG-TV	13
	KONA	2
	KHVH-TV	4
Wailuku	KMAU	3
	KALA	7
	KMVI-TV	12

IDAHO

Location	C.L.	Chan.
Boise	KBOI-TV	2
	KTVB	7
Idaho Falls	KID-TV	3
	KIFI-TV	8
Lewiston	KLEW-TV	3
Nampa	KCIX-TV	6
Twin Falls	KLIX-TV	11

ILLINOIS

Location	C.L.	Chan.
Carbondale	WSIU-TV	*8
Champaign	WCIA	3
	WCHU	33
Chicago	WBBM-TV	2
	WBKB	7
	WCIV	26
	WGN-TV	9
	WNBQ	5
	WTTW	*11
Danville	WICD	24
Decatur	WTVP	17
Harrisburg	WSIL-TV	3
La Salle	WEEQ-TV	35
Peoria	WEEK-TV	43
	WMBD	31
	WTVH	19
Quincy	WGEM-TV	10
Rockford	WREX-TV	13
	WTVO	39
Rock Island	WHBF-TV	4
Springfield	WICS	20
Urbana	WILL-TV	*12

INDIANA

Location	C.L.	Chan.
Bloomington	WTTV	4
Elkhart	WSJV-TV	28
Evansville	WFIE-TV	14
	WEHT	50
	WTVW	7
Ft. Wayne	WANE-TV	15
	WKJG-TV	33
	WPTA	21
Indianapolis	WFBM-TV	6
	WLWI	13
	WISH-TV	8
Lafayette	WFAM-TV	18
Marion	WTAF	31
Muncie	WLBC-TV	49
South Bend	WNDU-TV	16
	WSBT-TV	22
Terre Haute	WTHI-TV	10

IOWA

Location	C.L.	Chan.
Ames	WOI-TV	5
Cedar Rapids	KCRG-TV	9
	WMT-TV	2
Davenport	WOC-TV	6
Des Moines	KRNT-TV	8
	KDPS-TV	*11
	WHO-TV	13
Fort Dodge	KQTV	21
Mason City	KGLO-TV	3
Ottumwa	KTVO	3
Sioux City	KTIV	4
	KVTV	9
Waterloo	KWWL-TV	7

KANSAS

Location	C.L.	Chan.
Ensign	KTVC	6
Garden City	KGLD	11
Goodland	KLOE-TV	10
Great Bend	KCKT	2
Hays	KAYS-TV	7
Hutchinson	KTVH	12
Pittsburg	KOAM-TV	7
Topeka	WIBW-TV	13
Wichita	KAKE-TV	10
	KARD-TV	3

KENTUCKY

Location	C.L.	Chan.
Lexington	WLEX-TV	18
	WKYT	27
Louisville	WAVE-TV	3
	WFPK-TV	*15
	WHAS-TV	11
	WQXL-TV	41
Paducah	WPSD-TV	6

LOUISIANA

Location	C.L.	Chan.
Alexandria	KALB-TV	5
Baton Rouge	WAFB-TV	9
	WBRZ	2
	KATC	3
Lafayette	KLFY-TV	10
Lake Charles	KPLC-TV	7
	KTAG-TV	25
Monroe	KNOE-TV	8
	KLSE	*13
New Orleans	WDSU-TV	6
	WVUE	13
	WWL-TV	4
	WYES	*8
Shreveport	KSLA-TV	12
	KTBS-TV	3

MAINE

Location	C.L.	Chan.
Augusta	WCBB	10
Bangor	WABI-TV	5
	WLBZ-TV	2
Poland Spring	WMTW-TV	8
Portland	WCSH-TV	6
	WGAN-TV	13
Presque Isle	WAGM-TV	8

MARYLAND

Location	C.L.	Chan.
Baltimore	WJZ-TV	13
	WBAL-TV	11
	WMAR-TV	2
Salisbury	WBOC-TV	16

MASSACHUSETTS

Location	C.L.	Chan.
Adams	WCDC	19
Boston	WBZ-TV	4
	WGBH-TV	*2
	WHDH-TV	5
	WNAC-TV	7
Greenfield	WRLP	32
Springfield	WHYN-TV	40
	WWLP	22
Worcester	WWOR-TV	14

MICHIGAN

Location	C.L.	Chan.
Bay City	WNEM-TV	5
Cadillac	WWTV	13
	WWUP-TV	10
Cheboygan	WTOM-TV	4
Detroit	WJBK-TV	2
	WTVS	*56
	WWJ-TV	4
	WXYZ-TV	7
(Windsor, Ont.)	CKLW-TV	9
Flint	WJRT	12
Grand Rapids	WOOD-TV	8
	WZZM-TV	13
Kalamazoo	WKZO-TV	3
Lansing	WJIM-TV	6
Marquette	WLUC-TV	6
Onondaga	WILX-TV/WMSB	10
Saginaw	WKNX-TV	57
Traverse City	WPBN-TV	7

MINNESOTA

Location	C.L.	Chan.
Alexandria	KCMT	7
Austin	KMMT	6
Duluth	KDAL-TV	3
	WDSM-TV	6
Mankato	KEYC-TV	12
Minneapolis	KMSP	9
	WCCO-TV	4
	WTCN-TV	11
Rochester	KROC-TV	10
St. Paul	KSTP-TV	5
	KTCA-TV	*2

MISSISSIPPI

Location	C.L.	Chan.
Columbus	WCBI-TV	4
Greenwood	WABG-TV	6
Jackson	WJTV	12
	WLBT	3
Laurel	WDAM-TV	7
Meridian	WTOK-TV	11
	WCOC-TV	30
Tupelo	WTWV	9

MISSOURI

Location	C.L.	Chan.
Cape Girardeau	KFVS-TV	12
Columbia	KOMU-TV	8
Hannibal	KHQA-TV	7
Jefferson City	KRCG-TV	13
Joplin	KODE-TV	12
Kansas City	KCMO-TV	5
	KCSD-TV	*19
	KMBC-TV	9
	WDAF-TV	4
Kirksville	KTVO	3
Poplar Bluff, Mo.	KPOB-TV	15
St. Joseph	KFEQ-TV	2
St. Louis	KETC	*9
	KMOX-TV	4
	KSD-TV	5
	KTVI	2
	KPLR-TV	11
Sedalia	KMOS-TV	6
Springfield	KTTS-TV	10
	KYTV	3

MONTANA

Location	C.L.	Chan.
Billings	KOOK-TV	2
	KGHL-TV	8
Butte	KXLF-TV	4
Glendive	KXGN-TV	5
Great Falls	KFBB-TV	5
	KRTV	3
Helena	KBLL-TV	12
Kalispell	KULR	9
Missoula	KMSO-TV	13

NEBRASKA

Location	C.L.	Chan.
Grand Island	KGIN-TV	11
Hastings	KHAS-TV	5
Hay Springs	KDUH-TV	4
Hayes Center	KHPL-TV	6
Kearney	KHOL-TV	13
Lincoln	KOLN-TV	10
	KUON-TV	*12
McCook	KOMC	8
North Platte	KNOP	2
Omaha	KMTV	3
	KETV	7
	WOW-TV	6
Scottsbluff	KSTF	10

NEVADA

Location	C.L.	Chan.
Henderson	KORK-TV	2
Las Vegas	KLAS-TV	8
	KSHO-TV	13
Reno	KCRL	4
	KOLO-TV	8

NEW HAMPSHIRE

Location	C.L.	Chan.
Durham	WENH-TV	*11
Manchester	WMUR-TV	9

NEW JERSEY

Location	C.L.	Chan.
Newark	WNDT-TV	13

NEW MEXICO

Location	C.L.	Chan.
Albuquerque	KGGM-TV	13
	KNME-TV	*5
	KOAT-TV	7
	KOB-TV	4
Carlsbad	KAVE-TV	6
Clovis	KVER-TV	12
Roswell	KSWS-TV	8

NEW YORK

Location	C.L.	Chan.
Albany	WTEN	10
	WAST	13
	WTRI	35
	WCDA	41
Binghamton	WINR-TV	40
	WNBF-TV	12
Buffalo	WBEN-TV	4
	WNED-TV	*17
	WGR-TV	2
	WKBW-TV	7
Carthage	WCNY-TV	7
Elmira	WSYE-TV	18
New York	WABC-TV	7
	WUHF-TV	31
	WNEW-TV	5
	WCBS-TV	2
	WOR-TV	9
	WPIX	11
	WNBC-TV	4
	WYNC-TV	31
Plattsburg	WPTZ-TV	5
Rochester	WHEC-TV	10
	WOKR-TV	13
	WROC-TV	5
	WVET-TV	10
Schenectady	WRGB	6
Syracuse	WHEN-TV	8
	WNYS	9
	WSYR-TV	3
Utica	WKTV	2

NORTH CAROLINA

Location	C.L.	Chan.
Asheville	WISE-TV	62
	WLOS-TV	13
Chapel Hill	WUNC-TV	*4
Charlotte	WBTV	3
	WSOC-TV	9
Durham	WTVD	11
	WUTV	36
Greensboro	WFMY-TV	2
Greenville	WNCT	9
Raleigh	WRAL-TV	5
Washington	WITN	7
Wilmington	WECT	6
Winston-Salem	WSJS-TV	12

NORTH DAKOTA

Location	C.L.	Chan.
Bismarck	KXMB-TV	12
	KFYR-TV	5
Dickinson	KDIX-TV	2
Fargo	WDAY-TV	6
	KXGO-TV	11
Grand Forks	KNOX-TV	10
Minot	KXMC-TV	13
	KMOT	10
Pembina	KCNO-TV	12
Valley City	KXJB-TV	4
Williston	KUMV-TV	8

OHIO

Location	C.L.	Chan.
Akron	WAKR-TV	49
Cincinnati	WCET	*48
	WCPO-TV	9
	WKRC-TV	12
	WLW-T	5
	WCIN-TV	54
Cleveland	KYW-TV	3
	WEWS	5
	WJW-TV	8
Columbus	WBNS-TV	10
	WLW-C	4
	WOSU-TV	*34
	WTVN-TV	6
Dayton	WHIO-TV	7
	WLW-D	2
Lima	WIMA-TV	35
Oxford	WMUB-TV	14
Steubenville	WSTV-TV	9
Toledo	WSPD-TV	13
	WGTE-TV	*30
	WTOL-TV	11
Youngstown	WFMJ-TV	21
	WKBN-TV	27
	WKST-TV	33
Zanesville	WHIZ-TV	18

OKLAHOMA

Location	C.L.	Chan.
Ada	KTEN	10
Ardmore	KXII	12
Enid	KOCO-TV	5
Lawton	KSWO-TV	7
Oklahoma City	KETA	*13
	KOKH-TV	25
	KWTV	9
	WKY-TV	4
Tulsa	KOTV	6
	KOED-TV	*11
	KTUL-TV	8
	KVOO-TV	2

OREGON

Location	C.L.	Chan.
Coos Bay	KCBY-TV	11
Corvallis	KOAC-TV	*7
Eugene	KVAL-TV	13
	KEZI-TV	9
Klamath	KOTI	2
Medford	KBES-TV	5
	KMED-TV	10
Portland	KGW-TV	8
	KOAP-TV	*10
	KATU-TV	2
	KOIN-TV	6
	KPTV	12
Roseburg	KPIC	4

PENNSYLVANIA

Location	C.L.	Chan.
Altoona	WFBG-TV	10
Erie	WICU	12
	WSEE-TV	35
Harrisburg	WHP-TV	21
	WTPA	27
Johnstown	WARD-TV	56
	WJAC-TV	6
Lancaster	WGAL-TV	8
Lebanon	WLVH-TV	15
Lockhaven	WBPZ-TV	32
New Castle	WKST-TV	33
Philadelphia	WCAU-TV	10
	WFIL-TV	6
	WHYY-TV	*35
	WPCA-TV	17
	WRCV-TV	3
Pittsburgh	KDKA-TV	2
	WIIC	11
	WQED	*13
	WTAE	4
Scranton	WNEP-TV	16
	WDAU-TV	22
Wilkes-Barre	WBRE-TV	28
York	WSBA-TV	43

RHODE ISLAND

Location	C.L.	Chan.
Providence	WJAR-TV	10
	WPRO-TV	12

SOUTH CAROLINA

Location	C.L.	Chan.
Anderson	WAIM-TV	40
Charleston	WCSC-TV	5
	WUSN-TV	2
Clemson	WSBF-FM	*88.1
Columbia	WIS-TV	10
	WCCA-TV	25
	WNOK-TV	67
Florence	WBTW	8
Greenville	WFBC-TV	4
Spartanburg	WSPA-TV	7

SOUTH DAKOTA

Location	C.L.	Chan.
Aberdeen	KXAB-TV	9
Deadwood	KDSJ-TV	5
Florence	KOLO-TV	3
Mitchell	KORN-TV	5
Rapid City	KOTA-TV	3
	KRSD-TV	7
Reliance	KPLO-TV	6
Sioux Falls	KELO-TV	11
	KSOO-TV	13
Vermilion	KUSD-TV	*2

TENNESSEE

Location	C.L.	Chan.
Chattanooga	WDEF-TV	12
	WRGP-TV	3
	WTVC	9
Jackson	WDXI-TV	7
Johnson City	WJHL-TV	11
Knoxville	WATE-TV	6
	WBIR-TV	10
	WTVK	26
Memphis	WHBQ-TV	13
	WKNO	*10
	WMCT	5
	WREC-TV	3
Nashville	WDCN-TV	*2
	WLAC-TV	5
	WSIX-TV	8
	WSM-TV	4

TEXAS

Location	C.L.	Chan.
Abilene	KRBC-TV	9
Alpine	KULF-TV	12
Amarillo	KFDA-TV	10
	KGNC-TV	4
	KVII	7
Austin	KTBC-TV	7
Beaumont	KFDM-TV	6
Big Spring	KEDY-TV	4
Bryan	KBTX-TV	3
Corpus Christi	KRIS-TV	6
	KZTV	10
Dallas	KRLD-TV	4
	KERA-TV	*13
	WFAA-TV	8
El Paso	KELP-TV	13
	KROD-TV	4
	KTSM-TV	9
(Ciudad Juarez, Mex.)		
	XEJ-TV	5
Ft. Worth	KTVT	11
	WBAP-TV	5
Harlingen	KGBT-TV	4
Houston	KPRC-TV	2
	KHOU-TV	11
	KTRK-TV	13
	KUHT	*8
Laredo	KGNS-TV	8
Lubbock	KCBD-TV	11
	KDUB-TV	13
Lufkin	KTRE-TV	9
Midland	KMID-TV	2
	KDCD-TV	18
Monahans	KVKM-TV	9
Odessa	KOSA-TV	7
Port Arthur-Beaumont		
	KPAC-TV	4
Richardson	KRET-TV	*23
San Angelo	KCTV	8
	KACB-TV	3
San Antonio	KUAL-TV	41
	KENS-TV	5
	KLRN	*9
	KONO-TV	12
	WOAI-TV	4
Sweetwater	KPAR-TV	12
Temple	KCEN-TV	6
Texarkana	KTAL-TV	6
Tyler	KLTV	7
Waco	KWTX-TV	10
Weslaco	KRGV-TV	5
Wichita Falls	KFDX-TV	3
	KSYD-TV	6

UTAH

Location	C.L.	Chan.
Ogden	KVOG-TV	9
	KWCS-TV	*18
Provo	KBYU-TV	11
Salt Lake City	KSL-TV	5
	KCPX-TV	4
	KUED	*7
	KUTV	2

VERMONT

Location	C.L.	Chan.
Burlington	WCAX-TV	3

VIRGINIA

Location	C.L.	Chan.
Bristol	WCYB-TV	5
Hampton	WVEC-TV	13
Harrisonburg	WSVA-TV	3
Lynchburg	WLVA-TV	13
Norfolk	WHRO-TV	15
	WTAR-TV	3
Petersburg	WXEX-TV	8
Portsmouth	WAVY-TV	10
Richmond	WRVA-TV	12
	WTVR	6
Roanoke	WDBJ-TV	7
	WSLS-TV	10

WASHINGTON

Location	C.L.	Chan.
Bellingham	KVOS-TV	12
Pasco	KEPR-TV	19
Pullman	KWSC-TV	*10
Richland	KNDD-TV	25
Seattle	KCTS-TV	*9
	KING-TV	5
	KIRO-TV	7
	KOMO-TV	4
Spokane	KHQ-TV	6
	KREM-TV	2
	KXLY-TV	4
Tacoma	KTNT-TV	11
	KPEC-TV	*56
	KTPS	*62
	KTVW	13
Yakima	KIMA-TV	29
	KNDO-TV	23
	KYVE	*47

WEST VIRGINIA

Location	C.L.	Chan.
Bluefield	WHIS-TV	6
Charleston	WCHS-TV	8
Clarksburg	WBOY-TV	12
Fairmont	WJPB-TV	5
Huntington	WHTN-TV	13
	WSAZ-TV	3
Oak Hill	WOAY-TV	4
Parkersburg	WTAP-TV	15
Wheeling	WTRF-TV	7

WISCONSIN

Location	C.L.	Chan.
Eau Claire	WEAU-TV	13
Green Bay	WBAY-TV	2
	WFRV	5
	WLUK-TV	11
La Crosse	WKBT	8
Madison	WHA-TV	*21
	WISC-TV	3
	WKOW-TV	27
	WMTV	33
Marinette	WMBV-TV	11
Milwaukee	WISN-TV	12
	WITI-TV	6
	WMVS-TV	*10
	WMVT	*36
	WTMJ-TV	4
	WXIX	18
Wausau	WSAU-TV	7

WYOMING

Location	C.L.	Chan.
Casper	KTWO-TV	2
Cheyenne	KFBC-TV	5
Riverton	KWRB-TV	10

PUERTO RICO

Location	C.L.	Chan.
Aguadilla	WOLE-TV	12
Caguas	WKBM-TV	11
Mayaguez	WORA-TV	5
	WIPM-TV	*3
Ponce	WRIK-TV	7
	WSUR-TV	9
San Juan	WAPA-TV	4
	WIPR-TV	6
	WKAQ-TV	2

Canadian Television Stations

ALBERTA

Location	C.L.	Chan.
Burmis	CJLH-TV-3	3
Calgary	CHCT-TV	2
	CFCN-TV	8
Drumheller	CFCN-TV-1	8
	CBXT-TV	5
Edmonton	CFRN-TV	3
Lethbridge	CJLH-TV	7
Lloydminster	CHSA-TV	2
Medicine Hat	CHAT-TV	6
Pivot	CHAT-TV	4
Red Deer	CHCA-TV	6
	CHCA-TV-2	10

BRITISH COLUMBIA

Location	C.L.	Chan.
Ashcroft	CFCR-TV-2	10
Burnaby	CHAN-TV	8
Crescent Valley	CHMS-TV	5
Dawson Creek	CJDC-TV	5
Enderby	CHBC-TV-8	5
Kamloops	CFCR-TV	4
Kelowna	CHBC-TV	2
	CHGP-TV-1	72
	CABC-TV-4	
Keremeos	CHBC-TV-9	5
Lumby	CHBC-TV-4	5
Nelson	CBUAT-TV-7	9
Oliver	CHBC-TV-3	8
Peachland	CHBC-TV-10	5
Penticton	CHBC-TV-2	13
Prince George	CKPG-TV	3
Saddle Mountain	CHHC-TV-1	4
Salmon Arm	CHBC-TV-6	5
Trail	CBUAT	11
Vancouver	CBUT	2
Vernon	CHBC-TV-3	7
Victoria	CHEK-TV	6

LABRADOR

Location	C.L.	Chan.
Goose Bay	CFLA-TV	8

MANITOBA

Location	C.L.	Chan.
Baldy Mountain	CKOS-TV-1	8
Brandon	CKX-TV	5
Winnipeg	CBWT	3
	CBWFT	6
	CJAY-TV	7

NEW BRUNSWICK

Location	C.L.	Chan.
Campbellton	CRCD-TV	7
Moncton	CKAM-TV	2
	CBAFT	11
Saint John	CHSJ-TV	4
Upsalquitch Lake	CKAM	12

NEWFOUNDLAND

Location	C.L.	Chan.
Argentia	CJOX-TV	10
Corner Brook	CBYT	5
	CHEK-TV	6
Grand Falls	CJCN-TV	4
St. John's	CJON-TV	6
Stephenville	CFSN-TV	8

NOVA SCOTIA

Location	C.L.	Chan.
Antigonish	CFXU-TV	9
Halifax	CBHT	3
	CJCH-TV	5
Inverness	CJCB-TV-1	6
Liverpool	CBHT-1	12
New Glasgow	CFCY-TV-1	7
Shelburne	CBHT-2	8
Sydney	CJCB-TV	4
Yarmouth	CBHT-3	11

ONTARIO

Location	C.L.	Chan.
Barrie	CKVR-TV	11
Cornwall	CJSS-TV	8
Elk Lake	CFCL-TV-2	2
Elliot Lake	CKSO-TV-1	3
Hamilton	CHCH-TV	11
Kapuskasing	CFCL-TV-1	3
Kenora	CBWAT	8
Kingston	CKWS-TV	11
Kitchener	CKCO-TV	13
London	CFPL-TV	10
North Bay	CKGN-TV	10
Ottawa	CBOFT	9
	CBOT	4
	CJOH-TV	13
Parry Sound	CKVR-TV-1	11
Pembroke	CHOV-TV	5
Peterborough	CHEX-TV	12
Port Arthur	CKPR-TV-1	2
Sault Ste. Marie	CJIC-TV	2
Sioux Lookout	CHSL-TV	9
Sturgeon Falls	CBFST	7
Sudbury	CKSO-TV	5
Timmins	CFCL-TV	2
Toronto	CBLT	6
	CFTO-TV	9
Windsor	CKLW-TV	9
Wingham	CKNX-TV	8

PRINCE EDWARD ISLAND

Location	C.L.	Chan.
Charlottetown	CFCY-TV	13

QUEBEC

Location	C.L.	Chan.
Carleton	CHAU-TV	5
	CJAO-TV-1	80
	CHSM-TV	7
Clermont	CFCV-TV-1	75
Estcourt	CJES-TV-1	70
Jonquiere	CKRS-TV	12
Matane	CKBL-TV	9
Montreal	CBFT	2
	CFCF-TV	12
	CFTM-TV	10
	CBMT	6
New Carlisle	CHAU-TV	5
Quebec	CFCM-TV	4
	CKMI-TV	5
Rimouski	CJBR-TV	3
Riviere du-Loup	CKRT-TV	7
Rouyn	CKRN-TV	4
Sherbrooke	CHLT-TV	7
Three Rivers	CKTM-TV	13

SASKATCHEWAN

Location	C.L.	Chan.
Carlyle Lake	CKDS-TV-2	7
East End	CJFB-TV	2
Moose Jaw	CHAB-TV	4
Nipawin	CKBI-TV-4	2
Prince Albert	CKBI-TV-1	2
Regina	CKCK-TV	2
Saskatoon	CFQC-TV	8
Swift Current	CFJB-TV	5
Val Marie	CJFB	2
Wanganui	CKBI-TV-2	7
Yorkton	CKOS-TV	7

World-Wide Short-Wave Stations

Most international broadcasting is done within frequency limits agreed upon at international conventions. These frequency ranges are listed here, at the right, expressed both in frequency and by meter bands (wave-length).

Reception in the various bands varies according to the time of day and season of the year. Reception in the 60, 49 and 41 meter bands is best at night during the winter months. Reception in the 31 and 25 M. bands is best at night, but all year. Reception in the 19, 16, 13 and 11 M. bands is best during the day, also at night during the summer in the 16 and 19 M. bands. This listing includes only SWBC often heard in the U.S. and Canada, exclusive of those in the continental U.S.

Abbr.: AIR—All India Radio; RAI—Radiotelevisione Italiana; RTF—Radiodiffusion Television Francaise; VOA—Voice of America; RFE—Radio Free Europe. • denotes stations beaming evening (U.S. time) broadcasts to the U.S., † morning or afternoon broadcasts, V—varies.

METER BANDS

4750 to 5060 kc/s (60 meter band)
5950 to 6200 kc/s (49 meter band)
7100 to 7300 kc/s (41 meter band)
9500 to 9775 kc/s (31 meter band)
11700 to 11975 kc/s (25 meter band)
15100 to 15450 kc/s (19 meter band)
17700 to 17900 kc/s (16 meter band)
21450 to 21750 kc/s (13 meter band)
25600 to 26100 kc/s (11 meter band)

Kcs.	Call and Location
3245	YVKT, Caracas, Ven.
3255	ELBC, Monrovia, Liberia
	YVQL, El Tigre, Ven.
3265	ZFY Georgetown, Br. Guiana
3280	W.I.B.S., Grenada, Windward Is.
3285	HI7T, Santo Domingo, D.R.
3290	HJCQ, Bogota, Colombia
3295	YVOG, Trujillo, Ven.
3300	B.H.B.S., Belize, Br. Honduras
3305	YVKX, Caracas, Ven.
3315	Fort de France, Martinique
3316	Freetown, Sierra Leone
3325	HI5U, Santo Domingo, D.R.
3326	Kaduna, Nigeria
3355	YVLC, Valencia, Ven.
3366	Accra, Ghana
3375	HI5B, Santiago, D.R.
3395	YVOJ, Merida, Ven.
4630	HCGBI, Quito, Ecu.
4725	Rangoon, Burma
4765	HJEF, Cali, Col.
4770	ELWA, Monrovia, Lib.
4770	YVMW, Punto Fiji, Ven.
4780	YVLA, Valencia, Ven.
4790	YVQN, Puerto La Cruz, Ven.
4805	ZYS8, Manaus, Braz.
4810	YVMG, Maracaibo, Ven.
4830	YVOA, San Cristobal, Ven.
4835	HJKE, Bogota, Col.
4840v	Lourenco Marques, Moz.
4840	YVOI, Valera, Ven.
4845	HJGF, Bucaramanga, Col.
4850	YVMS, Barquisimeto, Ven.
4870	Cotonou, Dahomey Rep.
4880	YVKF, Caracas, Ven.
4895	Dakar, Senegal
4895	ZYR22, Manaus, Braz.
4900	YVKE, Caracas, Ven.
4900v	HJAC, Barranquilla, Col.
4905	HRQN3, Puerto Cortes, Hon.
4910	HCIMI, Quito, Ecua.
4910	Conakry, Guinea
4915	Accra, Ghana
4920	VLM4, Brisbane, Aus.
4920	YVKR, Caracas, Ven.
4935	HJLF, Ibague, Col.
4940	HCXZ1, Guayaquil, Ecu.
4940	Abidjan, Ivory Coast
4940	YVMO, Barquisimeto, Ven.
4945	HJCW, Bogota, Col.
4945	Paradys, So. Afr.
4950	Dakar, Senegal
4950	YVMM, Coro, Ven.
4960	YVQA, Cumana, Ven.
4970	YVLK, Caracas, Ven.
4972	Yaounde, Cameroon
4985	Radio La Cruz del Sur, La Paz, Bolivia
4990	Lagos, Nigeria
4990	YVMQ, Barquisimeto, Ven.
4995	CR6RZ, Luanda, Angola
5010	HCRCX, Quito, Ecu.
5010	St. Georges, Windward Isl.
5020	HJFW, Manizales, Col.
5020	Niamey, Niger Rep.
5030	YVKM, Caracas, Ven.
5040	YVMA, Maracaibo, Ven.
5050	YVKD, Caracas, Ven.
5075	HJGC Bogota, Col.
5875	Tegucigalpa, Hond.
5952	TGNA, Guatemala, Guat.
5954	TIQ, Puerto Limon, C. R.
5960	HJCF, Bogota, Col.
5980v	TGAR, Guatemala, Guat.
5980	4VB, Port au Prince, Haiti
5985	Hilversum, Neth.
5990	TGJA, Guatemala
5990	Habana, Cuba
5995	Fort-de-France, Mart.
6000	Radio Americas
6005	RIAS, Berlin, Ger.
6010	XEOI, Mexico City, Mexico
6015	PRA8, Recife, Braz.
6015v	Habana, Cuba
6020	Hilversum, Neth.
6020	Khabarovsk, USSR
6025	Kuala Lumpur, Malaya
6025	Lisbon, Port.
6030	Baghdad, Iraq
6035	Rangoon, Burma
6035	HRTL, Tegucigalpa, Hond.
6037	TIFC, San Jose, C. R.
6040	HJLB, Ibague, Col.
6040	VOA, Munich, Germany
6045	HOU31, David, Pan.
6050	HCJB, Quito, Ecua.
6050	BBC, London, Eng.
6055	HJEX, Cali, Col.
6055	JOZ2, Tokyo, Japan
6060	RAI, Caltanissetta, It.
6060	YDF, Djakarta, Indonesia
6065	XEXG, Leon, Mex.
6065	Horby, Sweden
6070	Sofia, Bulgaria
6070	Biak, West Papua
6070	BBC, London, Eng.
6075	Osterloog, Ger.
6080	ZL7, Wellington, N.Z.
6080	Trans World Radio, Monaco
6082	OAX4Z, Lima, Peru
6085	Munich, Ger.
6090	VLI6, Sydney, Aus.
6090	Luxembourg, Lux.
6090	XECMT, C. El Mante, Mex.
6090	HI2U, Santo Domingo, D.R.
6095	ZYB7, Sao Paulo, Braz.
6100	Belgrade, Yugo.
6105	XEQM, Merida, Mex.
6105	Cologne, Ger.
6110	BBC, London, Eng.

Kcs.	Call and Location
6115	ZYC7, Rio de Jan., Braz.
6120	LRX1, Buenos Aires
6120	4VEH, Cap Haitien, Haiti
6120	BBC, Limassol, Cyprus
6130	Port Moresby, New Guinea
6135	HRMF, La Ceiba, Hond.
6135	Papeete, Tahiti
6140	VLW6, Perth, Aus.
6145	RTF, Allouis, France
6145v	PRL9, Rio de Jan., Braz.
6150	BBC, London, Eng.
6155	Wien, Austria
6155	FEN, Tokyo, Japan
6160	HJKJ, Bogota, Col.
6160	Algiers, Algeria
6160	Saigon, S. Vietnam
6165	HER3, Bern, Switz. ●
6170	BBC, Limassol, Cyprus
6170	Singapore, Sing.
6170	VOA, Tangiers, Morocco
6175	RTF, Allouis, France
6175	Cayenne, Fr. Guiana
6185	Lisbon, Port.
6185	HJCT, Bogota, Col.
6195	HJEZ, Cali, Col.
6195	BBC, London, Eng.
6195	Pyongyang, N. Korea
6195	Andorra, Andorra
6200	4VHW, Port-au-Prince, Haiti
6305	Andorra, Andorra
7095v	Tehran, Iran
7105	Madrid, Spain
7110	VOA, Colombo, Ceylon
7110	BBC, London, England
7115	Rabat, Morocco
7120	BBC, London, England
7125	Warsaw, Poland
7135	Taipeh, Taiwan
7145	Bamako, Mali
7150	Moscow, U.S.S.R.
7155	VOA, Tangiers, Mor.
7160	RTF, Paris, France
7165	RFE, Germ.
7170	Algiers, Alg.
7180	Baghdad, Iraq
7180	Moscow, U.S.S.R.
7185	BBC, London, Eng.
7185	Paradys, So. Africa
7193	Bucharest, Roumania
7200	R. Malaya, Sing.
7205	VOA, Salonika, Gr.
7210	Dakar, Mali Fed.
7215	Trans World Radio, Monaco
7220	VLD7, Melbourne, Aus.
7220	Budapest, Hung.
7230	BBC, London, Eng.
7240	RTF, Paris, France
7250	BBC, London, Eng.
7255	Sofia, Bulg.
7265	Saigon, Vietnam
7270	Motola, Sweden
7275	RAI, Rome, It.
7285	Ankara, Turk.
7290	Singapore
7290	Moscow, U.S.S.R.
7290	RAI, Rome, It.
7295	Makassar, Celebes
7295	RFE, Ger.
7340	Moscow, U.S.S.R.
7398v	Damascus, U.A.R.
7480	Peking, China
7650	YNMS, Leon, Nic.
8016	Beirut, Lebanon
9009	Tel Aviv, Israel
9360	COBC, Habana, Cuba
9360v	Madrid, Spain ●
9380v	Madrid, Spain
9410	BBC, London, Eng.
9440	CP38, La Paz, Bol.
9480	Peking, China
9485	HI3U, Santo Domingo, D.R.
9500	Magadan, U.S.S.R.
9500	Moscow, U.S.S.R.
9505	PRB22, Sao Paulo, Braz.
9505	Rabat, Mor.
9505	HOLA, Colon, Pan.
9505	NHK, Tokyo, Japan
9505	Belgrade, Yugoslavia
9510	London, England
9515	RAI, Caltanissetta, It.
9515	XEWW, Mexico, DF, Mex.
9520	VOA, Tangier, Mor.
9520	Copenhagen, Den. ●
9520	Port Moresby, New Guinea
9520	OAX8E, Iquitos, Peru
9525	NHK, Tokyo, Japan
9525	Warsaw, Poland
9530	AIR, Delhi, India
9530	VOA, Courier, Rhodes
9530	YVMZ, Maracaibo, Ven.
9535	VOA, Manila, P.I.
9535	HER4, Bern, Switz. ●
9540	ZL2, Wellington, N.Z.
9540	Warsaw, Poland
9540	Khabarovsk, U.S.S.R.
9545	ZYS43, Curitiba, Braz.
9545	HED5, Bern, Switz.
9550	Prague, Czecho. ●
9555	BBC, London, Eng.
9555	YSS, San Salvador, E. S.
9555	XETT, Mexico City, Mex.
9560	RTF, Paris, France
9560	Colombo, Ceylon
9563	OAX4R, Lima, Peru
9565	ZYK3, Recife, Braz.
9565	Radio Liberty, Ger.
9570	RAI, Rome, Italy
9575	ZYZ27, Rio de Jan., Braz.
9580	VLA9, Melbourne, Aus.
9580	BBC, London, Eng.
9585	ZYR56, Sao Paulo, Braz.
9585	RTF, Allouis, France
9585	Djakarta, Indonesia
9590	Hilversum, Neth.
9590	ELWA, Monrovia, Liberia
9595	JOZ3, Tokyo, Japan
9600	Tashkent, U.S.S.R.
9600	BBC, London, Eng.
9600	XEYU, Mexico, DF, Mexico
9600	CE960v, Santiago, Chile
9605	Cologne, Ger.
9605v	Athens, Greece
9610	VLX9, Perth, Aus.
9610	ZYC8, Rio de Jan., Braz.
9610	Oslo, Norway ●
9610	OAX8C, Iquitos, Peru
9615	VOA, Tangier, Morocco
9620	ZYR96, Sao Paulo, Braz.
9620	Moscow, U.S.S.R.
9620	Saigon, Vietnam
9625	BBC, London, Eng.
9625	OAX8K, Iquitos, Peru
9630v	CR6RL, Luanda, Ang.
9635	ZYR83, Aparecida, Braz.
9640	BBC, London, Eng.
9640	Cologne, Germany ●
9640	Accra, Ghana
9640	HLK5, Seoul, Korea
9645	TIFC, San Jose, C.R.
9645	HVJ, Vatican City
9650	BBC, Limassol, Cyprus
9650	Moscow, U.S.S.R.
9650	Amman, Jordan
9655	Radio Free Europe, Ger.
9660	LRX, Buenos Aires, Arg.
9660	VLQ9, Brisbane, Aus.
9660	Radio Liberty, Ger.
9660	Moscow, U.S.S.R.
9667	Hargeisa, Somalia
9667v	TGNB, Guatemala, Guat. ●
9670	COCQ, Havana, Cuba
9675	BBC, London, Eng.
9675	NHK, Tokyo, Japan
9680	VLH9, Melbourne, Aus.
9680	XEQQ, Mexico City, Mex.
9680	Lisbon, Port.
9685	Havana, Cuba
9690	LRA32, Buenos Aires, Arg. ●
9690	BBC, London, Eng.
9690	BBC, Singapore
9700	Sofia, Bulgaria ●
9700	Leopoldville, Congo Rep.
9700	CE970, Santiago, Chile
9705	Kabul, Afghan.
9710	BBC, London, Eng.
9710	RAI, Rome, It.
9720	Moscow, U.S.S.R.
9725	Europe
9725	BBC, London, England
9730	Brazzaville, Congo Rep.
9730	Leipzig, E. Ger.
9730	DZH7, Manila, P.I.
9735	Cologne, Germany
9735	HI2T, Santo Domingo, D.R.
9740	Lisbon, Port.
9740	Khabarovsk, U.S.S.R.
9740v	LR57, Buenos Aires, Arg.
9745	Brussels, Belg.
9745	HCJB, Quito, Ecua. ●
9755	ZYW23, Goiania, Braz.
9755	RTF, Paris, France
9760	Habana, Cuba
9760	BBC, London, Eng.
9770	Brazzaville, Congo Rep.
9770	4VEH, Cap Haitien, Haiti
9772	Dario, Egypt
9785	Peking, China
9795	Cairo, U.A.R. ●
9800	Peking, China
9815	St. Georges, Windward Isl.
9825	BBC, London, Eng. ●
9833	Budapest, Hung. ●
9840	Hanoi, N. Vietnam
9865	Djakarta, Indonesia
9915	BBC, London, Eng.
9920	Peking, China
9940	Peking, China
9973	Peking, China
10530	Alma Ata, U.S.S.R.
10910	Ulan Bator, Outer Mongolia
11290	Peking, China
11600	Peking, China
11672	Karachi, Pakistan
11695v	Tashkent, U.S.S.R.
11700	TGQB, Quetzatenango, Gua.
11705	NHK, Tokyo, Japan
11705	Horby, Sweden
11710	VLB11, Melbourne, Aus. †
11710	AIR, Delhi, India
11710	Djakarta, Indonesia
11720	BBC, Limassol, Cyprus
11720	Brussels, Belgium
11725	Brazzaville, Congo Rep.
11725	VOA, Colombo, Ceylon
11725	Prague, Czecho.
11730	Hilversum, Neth. ●
11730	LRA35, Buenos Aries, Arg.
11735	Rabat, Morocco
11735	Khabarovsk, U.S.S.R. ●
11740	VLC11, Melbourne, Aus.
11740	HVJ, Vatican State
11740	CE1174, Santiago, Chile
11740	Peking, China
11745	RFE, Europe
11745	Cairo, Egypt
11750	BBC, London, Eng.
11750	BBC, Singapore
11750	FEN, Tokyo, Japan
11755	RFE, Europe
11755	Hilversum, Neth. ●
11755	Leopoldville, Congo Rep.
11760	VLB11, Melbourne, Aus.
11760	Lourenco Marques, Moz.
11765	ZYB8, Sao Paulo, Braz.
11765	CP39, La Paz, Bolivia
11765	Naven, E. Germany
11770	BBC, London, Eng.
11770	VOA, Munich, Germany
11775	ZYZ28, Rio de Jan., Braz.
11780	ZL3, Wellington, N. Z.
11780	NHK, Tokyo, Japan
11785	Djakarta, Indon.
11785	VOA, Melolos, P.I.
11795	Cologne, Ger. ●
11795	Djakarta, Indon.
11800	Accra, Ghana
11800v	Warsaw, Poland
11805v	RAI, Rome, It.
11810	VLC11, Melbourne, Aus. †
11810	Bucharest, Rom. ●
11815	Paradys, S. Africa
11820	Peking, China
11820	BBC, London, Eng.
11820	XEBR, Hermosillo, Mex.
11820	Abidjan, Ivory Coast
11825	ELWA, Monrovia, Lib.
11825	Papeete, Tahiti
11830	Algiers, Algeria
11830	VOA, Colombo, Ceylon
11830	Montevideo, Uru.
11830	Peking, China
11840	VOA, Tangier, Mor.
11840	Lisbon, Port. ●
11840	Hanoi, N. Vietnam
11845	RTF, Allouis, France
11845	Karachi, Pak.
11850	Sofia, Bulg.
11850	Brussels, Belgium
11850	Khabarovsk, U.S.S.R.
11850v	ZPA3, Asuncion, Paraguay
11855	Radio Free Europe, Ger.
11855	DZH8, Manila, P.I.
11855v	Omdurman, Sudan
11860	BBC, London, Eng.
11860	Moscow, U.S.S.R.
11865	PRA8, Recife, Braz.
11865	HER5, Bern, Switz. ●
11870	Moscow, U.S.S.R.
11875	Habana, Cuba
11875	NHK, Tokyo, Japan
11875	ZYN32, Salvador, Braz.
11880	XEHH, Mexico City, Mex.
11885	Karachi, Pak.
11885	Radio Free Europe, Ger.
11890	BBC, London, England
11895	Dakar, Mali Fed.
11895	Radio Free Europe
11895	VOA, Poro, Phil.
11900	CE1190, Valparaiso, Chile
11905	RAI, Rome, Italy ●
11910	Budapest, Hung. ●
11910	Bangkok, Thai.
11915	HCJB, Quito Ecua. ●
11915	Cairo, Egypt
11920	DXF2, Manila, P.I.
11920	AIR, Delhi, India
11925	ZYR78, Sao Paulo, Braz.
11925	HLK6, Seoul, Korea †
11925	Warsaw, Pol.
11925	Tashkent, U.S.S.R.
11930	BBC, London, Eng.
11935	Radio Liberty, Ger.
11940	ZPA5, Encarnation, Par.
11940	AFRTS, Munich, Ger.
11945	Peking, China
11945	BBC, London, Eng.
11945	Cologne, Germany ●
11950	Jidda, Saudi Arab.
11950	Hilversum, Neth.
11950	Saigon, S. Vietnam
11955	BBC, London, Eng.
11955	BBC, Singapore
11960	CE1196, Santiago, Ch.
11960	Conakry, Guinea
11965	Radio Liberty, Ger.
11975	Peking, China
11975	ELWA, Monrovia, Liberia
11980	Moscow, U.S.S.R.
11990	Prague, Czecho.
12030	Moscow, U.S.S.R.
12055	Peking, China
12080	Lisbon, Port.
12095	BBC, London, Eng.
15060	Peking, China
15070	BBC, London, Eng.
15080	Melbourne, Australia
15085	St. Georges, Windward Isl. BWI
15085	Paradys, So. Africa
15095	Peking, China
15105	AIR, Delhi, India
15110	XERR, Mexico, D. F., Mex.
15115	HCJB, Quito, Ecuador ●
15115	Peking, China
15120	Colombo, Ceylon
15120	RAI, Rome, Italy
15120	Warsaw, Poland †
15120	HVJ, Vatican City
15125	Seoul, Korea ●
15125	Lisbon, Portugal ●
15130	RTF, Allouis, France
15130	VOA, Melolos, P. I.
15135	PRB23, Sao Paulo, Braz.
15135	NHK, Tokyo, Japan
15135	Radio Free Europe, Port.
15140	Peking, China
15140	BBC, London, Eng.
15145	ZYK33, Recife, Brazil
15145	Radio Free Europe, Port.
15150	Peking, China
15153	OAX4T, Lima, Peru
15155	ZYB9, Sao Paulo, Brazil
15155	ELWA, Monrovia, Libe.
15155	Horby, Sweden
15155	VOA, Melolos, P. I.
15160	RTF, Allouis, France
15160	XEWW, Mexico City, Mex.
15160	Ankara, Turkey
15165	ZYN7, Fortaleza, Braz.
15165	Copenhagen, Denmark
15165	Damascus, Syria
15170	Tromso, Norway
15170	Radio Free Europe, Port.
15175	Luxembourg, Lux.
15175	Oslo, Norway ●
15180	Melbourne, Australia
15185	VOA, Poro, P. I.
15185	Radio Free Europe, Port.
15190	Brazzaville, Congo Rep.
15190	Helsinki, Finland †
15190	Moscow, USSR
15195	Radio Free Europe, Ger.
15205	XESC, Mexico City, Mex.
15210	VOA, Melolos, P. I.
15210	ZPA7, Asuncion, Paraguay
15215	Radio Free Europe, Port.
15215	VOA, Okinawa
15220	Hilversum, Neth. †
15225	Taipei, Taiwan, China
15230	VOA, Colombo, Ceylon
15230	BBC, London, Eng.
15235	Beirut, Lebanon
15235	NHK, Tokyo, Japan
15240	VLB15, Melbourne, Aus.
15240	Horby, Sweden
15240	Moscow, USSR
15240	Belgrade, Yugoslavia
15245	ZYE21, Belem, Brazil
15245	Leopoldville, Congo Rep.
15250	VOA, Melolos, P. I.
15250	Bucharest, Rumania ●
15255	Radio Free Europe, Port.
15260	FEN, Tokyo, Japan
15265	Colombo, Ceylon
15265	VOA, Munich, Ger.
15275	Cologne, Germany
15275	Warsaw, Poland ● †
15280	ZL4, Wellington, N.Z.
15285	Prague, Czecho.
15290	VOA, Tangiers, Mor.
15290v	Habana, Cuba
15295	Beirut, Lebanon
15295	PRL8, Rio de Jan., Brazil
15295	NHK, Tokyo, Japan
15295	Cologne, Germany
15300	BBC, London, Eng. †
15300	DZH9, Manila, P.I.
15300	Bucharest, Roumania
15300v	Lourenco, Marques, Moz.
15305	Radio Liberty, Ger.
15310	AIR, Delhi, India
15315	VLC15, Melbourne, Aus.
15315	HEU6, Bern, Switz. ●
15325	ZYR228, Sao Paulo, Braz.
15330	VOA, Munich, Germany
15530	VOA, Tangiers, Mor.
15335	VOA, Poro, P. I.
15340	Radio Liberty, Germany
15340v	Habana, Cuba
15345	Taipei, Taiwan, China
15345	Rabat, Morocco
15350	Luxembourg, Lux.
15355	Radio Free Europe, Port.
15370	ZYC9, Rio de Jan., Braz.
15370	Radio Liberty, Germany
15375	BBC, London, Eng.
15385	DZF3, Manila, P.I.
15385	CXA60, Montevideo, Urug.
15385	Lisbon, Port.
15385	VOA, Tangiers, Mor.
15390	NHK, Tokyo, Japan
15395	Radio Liberty, Germany
15400	RAI, Rome, Italy
15405	Cologne, Germany
15425	Hilversum, Neth.
15440	VOA, Munich, Germany
15460v	PZC, Paramariob, Surinam
15465	Paramaribo, Surinam
15475	Cairo, UAR
15555	Peking, China
17705	Luanda, Angola
17725	ZYR232, San Jose Dos Campos, Brazil
17740	Peking, China
17745	Accra, Ghana
17780	BBC, London, England
17790	BBC, London, Eng.
17845	Brussels, Belgium
17865	Brussels, Belgium
17875	Habana, Cuba
17880	Lisbon, Portugal
17890	HCJB, Quito, Ecuador
17895	Lisbon, Port.
17900	Cairo, Egypt
21620	Habana, Cuba

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