# Radio-TV EXPERIMENTER



**WHITE'S RADIO LOG**
AM-FM STATIONS / WORLD-WIDE SHORTWAVE LISTINGS

OCTOBER-NOVEMBER 75¢

## SPECIAL ISSUE: Celebrating 100 years of radio!

**Trace radio's exciting history • Enjoy our new ham column**
**Dig those cool CB clubs • Pick the SW receiver kit for you**

1-tube budget SW converter

2-tube beginner's superhet

Centennial SPECIAL!
**3 Great Radio Projects you can build!**

3-tube, 2-meter superregen

**PLUS—**

Add color to any TV set
Build poorman's drunkometer
DX crooks and clandestines

## Introducing EICO's New "Cortina Series"!

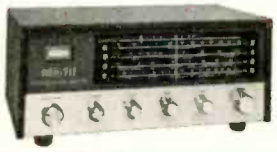
Today's electro-technology makes possible near-perfect stereo at moderate manufacturing cost: that's the design concept behind the new EICO "Cortina" all solid-state stereo components. All are 100% professional, conveniently compact (3⅛"H; 12"W, 8"D), in an esthetically striking "low silhouette." Yes, you can pay more for high quality stereo. But now there's no need to. The refinements will be marginal and probably inaudible. Each is $89.95 kit, $129.95 wired.

**Model 3070 All-Silicon Solid-State 70-Watt Stereo Amplifier:** Distortionless, natural sound with unrestricted bass and perfect transient response (no interstage or output transformers); complete input, filter and control facilities; failure-proof rugged all-silicon transistor circuitry.

**Model 3200 Solid-State FM/MPX Automatic Stereo Tuner:** Driftless, noiseless performance; 2.4μV for 30db quieting; RF, IF, MX are pre-wired and pre-tuned on printed circuit boards — you wire only non-critical power supply.

# 7 New Ways to make Electronics more Fun!

## Save up to 50% with EICO Kits and Wired Equipment.



You hear all the action-packed capitals of the world with the NEW EICO 711 "Space Ranger" 4-Band Short Wave Communications Receiver — plus ham operators, ship-to-shore, aircraft, Coast Guard, and the full AM band. 550KC to 30MC in four bands. Selective, sensitive superhet, modern printed circuit board construction. Easy, -fast pinpoint tuning: illuminated slide-rule dials, logging scale; "S" meter, electrical bandspread tuning, variable BFO for CW and SSB reception, automatic noise limiter. 4" speaker. Headphone jack. **Kit $49.95. Wired $69.95.**

More "ham" for your dollar than ever — with the one and only SSB/AM/CW 3-Band Transceiver Kit, new Model 753 — "the best ham transceiver buy for 1966" — Radio TV Experimenter Magazine. 200 watts PEP on 80, 40 and 20 meters. Receiver offset tuning, built-in VOX, high level dynamic ALC, silicon solid-state VFO. Unequaled performance, features and appearance. Sensationally priced at $189.95 kit, $299.95 wired.

### NEW EICO 888 Solid-State Engine Analyzer

**Now you can tune-up, trouble-shoot and test your own car or boat.**

Keep your car or boat engine in tip-top shape with this completely portable, self-contained, self-powered universal engine analyzer. Completely tests your total ignition/electrical system. The first time you use it — just to tune for peak performance — it'll have paid for itself. (No tune-up charges, better gas consumption, longer wear) 7 instruments in one, the EICO 888 does all these for 6V and 12V systems; 4, 6 & 8 cylinder engines.

The EICO 888 comes complete with a comprehensive Tune-up and Trouble-shooting Manual including RPM and Dwell angle for over 40 models of American and Foreign cars. The Model 888 is an outstanding value at $44.95 kit, $59.95 wired.


New EICOCRAFT® easy-to-build solid-state electronic TruKits:® great for beginners and sophisticates alike. As professional as the standard EICO line — only the complexity is reduced to make kit-building faster, easier, lower cost. Features: pre-drilled copper-plated etched printed circuit boards; finest parts; step-by-step instructions; no technical experience needed — just soldering iron and pliers. Choose from: Fire Alarm; Intercom; Burglar Alarm; Light Flasher; "Mystifier"; Siren; Code Oscillator; Metronome; Tremolo; Audio Power Amplifier; AC Power Supply. From $2.50 per kit.

New EICO "Nova-23" (Model 7923) all solid-state 23-channel 5 watt CB Transceiver featuring a host of CB advances—plus exclusive engineering innovations.
**EXCLUSIVE** dual-crystal lattice filter for advanced razor-sharp selectivity of reception.
**EXCLUSIVE** highly efficient up-converter frequency synthesizer provides advanced stability and freedom from trouble in all 23 crystal-controlled transmit-receive channels. All crystals supplied.
**EXCLUSIVE** use of precision series-mode fundamental crystals for superior transmit and receive stability. **Wired only, $189.95**

Model 460 Wideband Direct-Coupled 5" Oscilloscope. DC-4.5mc for color and B&W TV service and lab use. Push-pull DC vertical amp., bal. or unbal. input. Automatic sync limiter and amp. **$99.95 kit, $139.95 wired.**

### FREE 1967 CATALOG

RTVE-10

EICO Electronic Instrument Co., Inc.
131-01 39th Ave., Flushing, N. Y. 11352

Send me FREE catalog describing the full EICO line of 200 best buys, and name of nearest dealer. I'm interested in:

- ☐ test equipment
- ☐ ham radio
- ☐ stereo/hi-fi
- ☐ Citizens Band radio
- ☐ automotive electronics

Name_____

Address_____

City_____

State_____ Zip_____

Model 232 Peak-to-Peak VTVM. A must for color or B&W TV and industrial use. 7 non-skip ranges on all 4 functions. With exclusive Uni-Probe.® **$29.95 kit, $49.95 wired.**

RADIO-TV EXPERIMENTER is published bimonthly at $4.00 per year, by Science & Mechanics Publishing Co., 505 Park Avenue, New York, N.Y. 10022. Second class postage paid at New York, N.Y., and at additional mailing office. 

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**SPECIAL 16-PAGE SECTION**

# we're celebrating

## Radio Shack's 44TH anniversary

Radio Shack — the nation's biggest company-operated Electronics Parts store chain — is 44 years old today. In 1923 "The Shack" was a one-store pioneer. In 1967 we're over 150 stores coast-to-coast. But we've brought our "one store" concept into your neighborhood to give you instant service on the electronics gear you need to build magazine projects, school experiments, and to repair and install things like speakers, antennas, radio-TV, intercoms, CB, and audio components. We've brought "distributor" prices to your doorstep, and 100's of items not available in any other store. Visit your nearest Radio Shack for 44th birthday bargains. Or phone. Or write. You'll discover why over 1,000,000 customers have made us #1 in electronics — nationwide!

## • EXCITING IDEAS KEEP RADIO SHACK YOUNG AT 44

**NEW!** perfboard kits from Science Fair . . . PAGE 6

**BUY!** a "VOM" for 3.95 factory wired . . . PAGE 9

**CA$H** for your projects! We pay for ideas . . PAGE 7

**HOLE-Y!** "Perfbox" makes it easier to build . . . PAGE 8

**RADIO!** a wired 6-TR radio "in parts" for installers PAGE 19

**STICKUP!** novel "glue gun" really works as advertised . . PAGE 16

**COPS!** our monitor portable VHF radio is "hot" . . PAGE 18

**LOST?** here's where to find the "Shack" near you . . . PAGE 20


## BRILLIANT NEW KIT LINE!

# Science Fair™

*Perf-board electronic projects make soldering optional, let builder re-use parts or change circuit!*

At last! — electronic kits that let you work the same way engineers do — by "breadboarding". Designed by Radio Shack's engineers and produced by its new Science Fair Electronics division, the kit line features step-numbered construction data, pictorial, schematic and add-on instructions. Another welcome Science Fair feature — each kit includes, as needed, potentiometers, line cords, and other components often left out of kits. "It's a matter of philosophy," said one Radio Shack engineer, "but when a guy builds, say, an amplifier kit, we don't want him to have to hunt for a pot to make the darn thing work." At press time, 4 kits (see below) were available from stock. An audio amplifier and an AC-to-DC power supply were scheduled for release in late July. Only first-quality parts are being used. The packaging is being done at the Company's Ft. Worth, Texas, facility.

For Store Addresses, Order Form, See Page 20

## The First 4 From Science Fair™

### TRANSISTOR RADIO KIT

**3.95** No. 28-102

Tunes the standard AM broadcast band; can also be used as a tuner. Battery-operated. Comes complete with earphone. Perf-board construction.

### TRANSISTOR ORGAN KIT

**5.95** NO. 28-101

Each note on the seven-note scale is separately tone variable. Unit is battery-operated and features perf-board construction. Fun to build & operate!

### WIRELESS AM MIKE KIT

**3.95** NO. 28-103

Transmit through any radio up to 20 feet away! Battery-operated microphone is a real broadcaster! Constructed of sturdy perf-board.

### 1-TUBE DC RADIO KIT

**3.95** NO. 28-100

Battery-operated! Learn tube theory and build a real working radio. Equipped with sturdy perf-board construction. Kit comes complete with earphone.

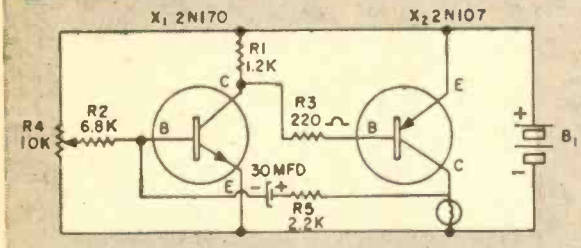
# THESE ELECTRONIC PROJECTS HAVE EARNED CASH AWARDS FOR RADIO SHACK CUSTOMERS

***Build Yourself — or Win Cash by Sending Us Your Own Ideas!***

**R.G.**
**Fremont, California**

## PILOT LIGHT FLASHER

***Illustrates Fundamentals of Radar & Computers***



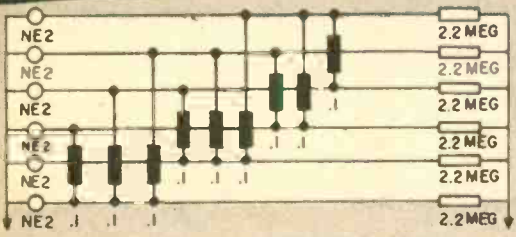

| PROJECT PARTS LIST | | |
|---|---|---|
| Stock No. | Item | Net |
| 70-0195 | 1.2K ½W Resistor | .12 |
| 70-0195 | 6.8K ½W Resistor | .12 |
| 70-0195 | 220Ω ½W Resistor | .12 |
| 271-1715 | 10K Variable Potentiometer | .59 |
| 70-0195 | 2.2K ½W Resistor | .12 |
| 272-954 | 30MFD 15 Volts Capacitor | .29 |
| 276-1703 | 2N170 Transistor | .49 |
| 276-1701 | 2N107 Transistor | 1.17 |
| 272-1535 | Panel Indicators (Pak of 2) | .79 |
| 23-467 | "C" Cells (4 required) | .14 |
| 270-1437 | Double Battery Holder (2 required) | .25 |

This project, requiring anywhere from 30-45 minutes to complete, can be utilized as an ornamental device or for signalling purposes. It is a fine educational tool as well, since it demonstrates basic relaxation oscillator principles. Can be expanded to become the basis for an automobile or boat warning light; it can also be used for timing circuits, by determining the number of cycles per second.

**M.H.M.**
**Philadelphia, Pennsylvania**

## "DO-NOTHING" BOX

***Can Be Utilized As a Basic Timing Device***




| PROJECT PARTS LIST | | |
|---|---|---|
| Stock No. | Item | Net |
| 23-539 | 90 Volt Battery | 3.65 |
| 272-973 | .1 MFD 100 Volts Capacitor (pak of 10) | .99 |
| 70-0195 | 2.2 Meg. ½W Resistor (6 required) | .12 |
| 276-1582 | Circuit Board | .59 |
| 77-3417 | Neon Lamps (6 required) | .10 |
| 270-325 | Battery Clips (pak of 5) | .69 |

This ingenious device is a must for anyone with a keen sense of imagination. The project's most obvious feature is a series of flashing lights, which illustrate the technique of sequential lighting. The neon bulbs produce light in much the same was as outdoor display advertising. The "box" is easy to construct — at a minimum of cost. The battery lasts indefinitely due to the relatively small amount of current required to ignite the bulbs. The device may be used, together with other circuitry, to actuate flip flops, multi-vibrators, etc. It may also be used as a basic timing device. Its action is similar to that of a ring counter circuit.

## $$ FOR YOUR ELECTRONIC IDEAS!

***Turn Ingenuity and Hobby into Spare-Time Profits!***

We are looking for experiments built around Radio Shack or other electronic parts. These will be published regularly in our catalogs. If published by us WE WILL PAY YOU AN AUTHOR'S FEE and reimburse you for parts bought from us — maximum $50 cost. By submitting it, you state it's original with you. If we accept it, it is understood we can publish it for use by our catalog, flyer, book and magazine readers. Submissions cannot be returned. Send description, parts list, stock numbers, and schematic. DO NOT SEND ACTUAL SAMPLE as we will build it here to see if and how it works. Write today!

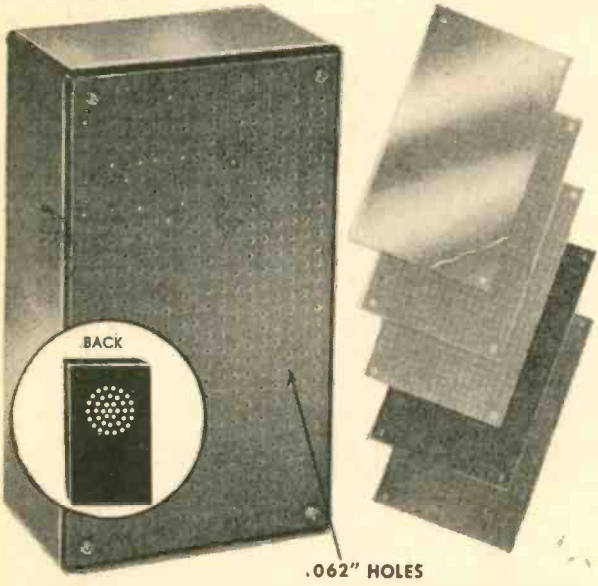
***SEND TO:*** **Radio Shack, Attn: Lewis Kornfeld, Vice-President**
**730 Commonwealth Avenue, Boston, Mass. 02215**

For Store Addresses, Order Form, See Page 20

RADIO SHACK 44TH BIRTHDAY SPECIAL

# Ingenious New Radio Shack PERFBOX™ "Professionalizes" Project Building!

***The bloody-knuckle brigade will appreciate Radio Shack's effort to eliminate chassis cutting and drilling, and make things prettier!***

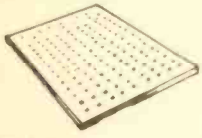



Somebody at "The Shack"—thank heaven! —must hate metal chassis and the generally sloppy look of breadboard projects. Now they've come up with a bakelite chassis box into which they've installed (4 screws) a 3½" x 6" perfboard top. But that's not all—the back of the box is pre-drilled for a 2¼" or other PM speaker, and there's a pre-drilled ¼" outlet hole on one side! This much-needed item is called the Radio Shack Experimenter's PERFBOX™. *(Cat. No. 270-097, price $1.69)* and should sell like film at Expo 67. As an added fillip, there's a companion deal they call Radio Shack Experimenter's 5-Piece Panel Set, consisting of 3 perfboards and 1 aluminum and 1 bakelite panel board, all 3¼"x6" predrilled to fit the PERFBOX™. The latter two boards are un-perfed (to coin a word), and the 5-piece set *(Cat. No. 270-100, price $1.69)* should answer just about any need for extending the usefulness of the PERFBOX short of filling it with champagne!

## RECOMMENDED PARTS FOR USE IN PERFBOX PROJECTS

DESIGN, CONSTRUCT YOUR OWN CIRCUITS . . . using these time-saving phenolic boards, breadboard or permanent type. 3/32" holes punched on 0.265" centers. Can be sawed. Shipping weight 1 lb.

### UNCLAD PERF-BOARD

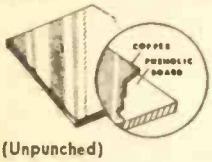


- *Accepts Miniature Components!*
- *Easy-In, Easy-Out Mounting!*
- *Ideal for Modular Construction!*

Punched

276-1582, 3.65x6.87x1/16" ..... Net .59
276-1583, 6.87x9.8x1/16" ..... Net 1.15

### COPPER-CLAD SOLID BOARD




- *Make Your Own Printed Circuits!*
- *Quality-Manufactured Board*
- *Bonded with Copper!*

(Unpunched)

276-1586, 3.65 x 6.87 x 1/16" ..... Net .79
276-1587, 6.87 x 9.8 x 1/16" ..... Net 1.50

### COPPER-CLAD PERF-BOARD


- *For Printed Circuit Design and Circuit Checkout!*
- *Easily Etched and Worked!*

(Punched)

276-1584, 3.65x6.87x1/16" ..... Net. .89
276-1585, 6.87x9.8x1/16" ..... Net 1.75

### PUSH-IN TERMINAL KIT

**1.49** Kit of 100

Use with prepunched perf boards. .062 diameter holes (1/16"). Serrated slots. Easy multiple connections.
270-1394, ¼ lb. Net 1.49

### SPRING BANANA PLUGS

**99¢** Set of 10

Ideal for 3/32" hole perforated boards. Overall length 1".
270-1543, 2 oz. .... Net 99¢

### SOLDERLESS TERMINALS

**99¢** Set of 15

Use with .093 diameter holes. Takes up to 7 leads without soldering. USA made. Spring action.
270-1395, 4 oz. .... Net 99¢

### ALLIGATOR CLIP SET

**99¢**

10 brass plated 1⅜" long with insulated phenolic barrels. Strong spring. 5 red, 5 black.
270-1540, 2 oz. .... Net 99¢

For Store Addresses, Order Form, See Page 20

RADIO SHACK 44th BIRTHDAY SPECIAL

# MICRONTA TEST EQUIPMENT AVAILABLE ONLY AT RADIO SHACK

## 1000 OHMS/VOLT POCKET AC/DC VOM

Regular: ~~$5.95~~ SALE! 3.95

- *Ultra Compact Size; Only 3½" x 2⅛" x 1"*
- *Convenient Thumb-Set Zero Adjustment*

Pin jacks for 5 ranges. 2-color 1¾" meter scale. Reads AC or DC volts in 3 ranges: 0-5, 150, 1000V. DC Current: 0-150ma. Resistance: 0-100K ohms. Accuracy ±3% DC, ±4% AC. Bakelite case with test leads, instructions, batteries.

22-4027, Sh. wt. 1 lb. ..... Net 3.95

## HOME/AUTO TESTER

11.95 Factory Wired

- *Checks Electrical Circuits in the Home or Garage!*

Volt, ohm, ammeter, wattage and leakage checker; checks 6-12V batteries. 0 7.5/15/150/300V, 15 amps. Resistance 0-1000Ω. With leads, power cord. 6¼"x3¾"x 2⅛".

22-011, Wt. 3 lbs. .... 11.95

## DYNAMIC TRANSISTOR CHECKER

9.95

- *Test Transistors "In" or "Out" of Circuit. Tests Low, Medium, High Power*

Visual indication of electrode open & short circuits, current gain, GO/NO-GO test 5ma-50ma, clip leads for in circuit tests. 6¼x3¾x2½".

22-024, Wt. 2 lbs. ..... 9.95

## TRANSISTORIZED REGULATED VARIABLE DC POWER SUPPLY

Reg. ~~$16.95~~ SALE! 13.44

- *25% Ripple, 0-20 Volts, Current 0-200 ma*

Continuously variable output of 0-20 VDC. 2 operating ranges deliver 0-20ma to 0-200ma. Meter reads output voltage and milliamps. 115 VAC @ 50/60 cy. Test leads. 4⅞x2⅞x 2¾". 22-023, Sh. Wt. 4 lbs. ..... Net 13.44

For Store Addresses, Order Form, See Page 20

## EDGEWISE PANEL METERS

1.99 up

- *Moving Coil Type! 2% Accuracy!*
- *Compact! Easy-To-Read Scales!*

Moving coil of 1 MA with zero adjust set screw. 2% accuracy, soldier lug terminals. 1⅞" mounting hole centers. Size: 2⅛"Wx1-7/16"D x⅞"H.

22-004, Signal Strength ..... Net 1.99
22-006, VU, −20 to +3 (0-100%) ..... Net 2.50
22-003, Balance & Tuning Meter ..... Net 2.50

ANY ARCHER-PAK ON THIS PAGE **$1** PER PAK

# Celebrating Our 44TH Anniversary

RADIO SHACK 44TH BIRTHDAY SPECIAL

## 20 Power Resistors

Package consists of high-quality vitreous, cand-ohm and wire-wound types. Includes 5 to 25-watt power resistors; individual catalog net — $10!
271-1202, 2 lbs. ..... Net 1.00

## 35 Precision 1% Resistors

Large assortment of popular ½, 1 and 2-watt values; includes encapsulated, bobbin, carbon film, etc. Made by Aerovox, Shellcross, IRC, and other famous names.
271-1196, 1 lb. ..... Net 1.00

## 50 Tubular Capacitors

An assortment of quality tubular capacitors, 100 mmf to .1 mf to 600 WVDC. Includes molded, paper and porcelain types. $10 if purchased individually from catalog!
272-1568, 1 lb. ..... Net 1.00

## 4 Subminiature 455KC IF Transformers

Slug tuned, made for printed circuitry mtg., shielded. Size: ⅜ x ⅜ x ½".
273-515, ¼ lb. .... Net 1.00

## 8 Sets - RCA Plugs & Jacks

Quality items, ideal for use in phono amplifiers, tuners, recorders, etc. Take advantage of this Radio Shack Special low price!
274-1575, ½ lb. ..... Net 1.00

## 35 Miniature Resistors

World's smallest ¼-watt carbon type resistors! All have axial leads; built for transistor and subminiature circuitry: Assorted values, with resistor color code chart.
271-1566, ½ lb. ..... Net 1.00

## 40 Coils and Chokes

Shop assortment consisting of RF, OSC, IF, parasitic, peaking and many more types. Individually purchased, this would cost you $15!
273-1569, 1 lb. ..... Net 1.00

## 45 Mica Capacitors

Famous name micas — Aerovox, Sangamo, C.D., etc. This assortment includes popular values 100 mmf to .01 mf, as well as silver type condensers. A $10 catalog net value!
272-1573, 1 lb. ..... Net 1.00

## 8 Volume Controls

***Most Popular Values***

Contains 8 assorted values including long and short shaft types. A tremendous bargain for servicemen!
271-127, 1 lb. ..... Net 1.00

## Special! 50 Capacitors

Assortment of many types including disc, ceramic, mylar, temperature coefficient, molded, paper, oil, Vit-Q. You save $9 over industrial net catalog prices!
272-1199, 1 lb. ..... Net 1.00

## 60 Half-Watt Resistors

Made by Allen Bradley and IRC. Many 5% and 10% tolerance. Color chart. All most popular values. An absolute "must" for hobbyists and kit-builders.
271-1612, 1 lb. ..... Net 1.00

## 50 Ceramic Capacitors

Wide variety of popular values by Centralab and other famous-name makers. 10 mmf to .04 mf to KV. Assortment includes tubulars, discs, NPO's, temp. coefficient, etc.
272-1566, 1 lb. .... Net 1.00

## 48 Terminal Strips

You get a wide variety of screw and solder lug type terminal strips with 1 to 6 lugs. Outstanding value at this low price! 101 uses for the builder and experimenter.
274-1555, 1 lb. ..... Net 1.00

## 35 Disc Type Capacitors

A varied assortment of types, including NPO's, Hi-Q, N-750's, mylar and ceramic. 10 mmf to .01 mf to 6 KV. A $10 catalog net value!
272-1567, ¼ lb. ..... Net 1.00

## 150' of Hook-Up Wire

Assortment consists of 6 V rolls of 25' each — solid and stranded wire. #18 through #22. Necessary for multitude of jobs and always useful!
278-025, ½ lb. ..... Net 1.00

## 40 One-Watt Resistors

Here are resistors for hundreds of uses! Assortment has Allen Bradley and IRC carbons, with 5% values included. This pack is a regular $8.00 catalog net!
271-1576, 1 lb. ..... Net 1.00

## 4 Transistor Transformers

Made by UTC and Remington Rand. Famous miniatures. Includes sub-ouncer, mike, input types. Color coded leads.
273-1581, 1 lb. ..... Net 1.00

## $25 SURPRISE PACKAGE!

*Loaded with Parts!* **$1**

The biggest surprise package yet! Enough electronics components to make your eyes pop! Resistors, capacitors, condensers, diodes . . . your guess is as good as ours. The famous-make parts are worth *at least* $25.00!
270-1251, 1 lb., Net 1.00

## 50 Plugs and Sockets

Ideal bench assortment for servicemen, hams, etc. Subminiature and printed circuit types included! This assortment saves you $10 over individual catalog prices!
274-1562, 1 lb. ..... Net 1.00

## 30 2-Watt Resistors

These quality 2-watt resistors are non-inductive, magnetic film, carbon types. Many with 5% values. Made by famous-name manufacturers.
271-1211, ½ lb. .... Net 1.00

For Store Addresses, Order Form, See Page 20

RADIO SHACK 44TH BIRTHDAY SPECIAL

# Celebrating Our 44TH Anniversary

ANY ARCHER-PAK ON THIS PAGE $1 PER PAK

## 4 Type 2N107 PNP Transistors

One of the most widely used transistors today for general audio use. Complete with base wiring diagram.

276-501, ½ lb. ..... Net 1.00

## 6 Zener Rectifiers

Includes zener references! Ratings from 250MW to 10 Watt. Stud, axial lead, upright types, assorted voltages; IN429, IN821, etc.

276-538, ½ lb..... Net 1.00

## 10 MAT High Frequency Transistors

Similar to 2N501 type PNP Freq. 30-180 MCS. Used in RF and switching circuits. Ideal for CB, Hams, and experimenters.

276-522, ½ lb. .. Net 1.00

## 4 100 Mc. NPN Planar Transistors

Similar to 2N1613, 2N1893 and 2N2049; Made by Fairchild and Rheem. Rated at 700 MW. Vce 75; Hfe 40-120; 150 Ma; TO-18, TO-46 cases.

276-536, ½ lb. ..... Net 1.00

## 8 Pre-Etched Boards

Assorted types of pre-punched boards ideal for transistor experiments, hobby work. Any path may be used.

276-1572 ..... Net 1.00

## 5-10W PNP Power Transistor Pak

Ideal for the experimenter wanting higher wattage rating transistors. Types similar to 2N155.

276-527, 1 lb. .... Net 1.00

## 2 Silicon NPN 400 Mc. Planar Transistors

Excellent for VHF, switching and oscillator applications. Made by Sylvania. Similar to 2N-707-8. 360 MW; Vcb 15; Hfe 12-75; 10 Ma.

276-541, ½ lb. ..... Net 1.00

## 5-6 Volt Zener Diodes

Rated at 1 watt. Gold plated. Long axial leads. Ideal for voltage regulated power supplies, transistor bias, etc.

276-518, ½ lb. .. Net 1.00

## 3 Coax Silicon Transistors

Similar to Hughes 2N1241-2N1243 type PNP. Used in audio and switching circuits Vcb 35 Hfe 30 Ic 10. Rated 1 watt.

276-550, ½ lb. .. Net 1.00

## Pak of 8 PNP Switching Transistors

PNP includes TO-5, TO-22, cases. Similar to 2N1305, 2N394, 2N404. Frequency: 4 MC, 150MV, Vcb 10; Hfe 70, 10 Ma.

276-539, Sh. Wt. ½ lb. ..... Net 1.00

## 25-Pc. Surprise Pak

Includes both PNP and NPN's Silicon and Germanium types. Assorted cases TO-5, TO-18, and TO-46. Ideal assortment for the experimenter.

276-524, 1 lb. .... Net 1.00

## 3 Silicon 100MC 2W Transistors

PNP type TO-5 case. Similar to 2N1132, 2N2104 and 2N2303 types. Ideal for high frequency work. Vcb 60 Hfe 40-120.

276-523, ½ lb. .. Net 1.00

## Pak of 8 NPN Switching Transistors

NPN Type; Similar to 2N333, 2N336-337, Specifications as above. With diagram.

276-540, Ship. Wt. ½ lb. ..... Net 1.00

## 25 Germanium Diode Surprise Pak

Used in computer switching and general experimental use. Long axial leads. Ideal for experimenter and builder.

276-519, ¼ lb. .. Net 1.00

## 3 RF Silicon Transistors

NPN type — similar to 2N790-2N792, 2N1150 and 2N170 types. Rated at 150 MW. Freq. 13 MC. Vcb 45. MA 22; TO-22 case.

276-528, ½ lb. .. Net 1.00

## 10 Popular PNP and NPN Transistors

Includes most popular types: CK-722, 2N35, 2N107, 2N440, and 2N335. Invaluable to experimenters and hobbyists.

276-510, ½ lb. ..... Net 1.00

## 20 Top Hat Rectifier Pak

Some up to 1 AMP. Flangeless types too! Assorted voltages and current. Long leads. Each Pak a real surprise!

276-520, 1 lb. .... Net 1.00

## 3 PNP High Power Transistors

Rating: 10-40 W. Similar to 2N155, 255, 2N1320, 2N1504. Top quality manufacturer. Includes cases TO-3, TO-10, TO-13.

276-529, ½ lb. .. Net 1.00

## New! 6 NPN and PNP Micro-Transistors

Both silicons and planars with T and T-46 cases. Similar to T-706, 2N995, 2N834, 2N2357. Frequency: to 200 MC. Wiring diagram.

276-542, ½ lb. ..... Net 1.00

## 25 250MW Silicon Zener Diodes

Glass miniature diodes in assorted voltages. Long axial leads. Excellent for transistor power supply regulation.

276-521, ½ lb. .. Net 1.00

## New! 4-Micro Silicon Epoxy Rectifier

Rated at 1 amp a 400 PIV. Mfg. by GE. Long axial leads. Ideal for micro miniature circuitry where space is a factor.

276-549, ½ lb. .. Net 1.00

For Store Addresses, Order Form, See Page 20

# SEMI CONDUCTORS FOR THE HOBBYIST

RADIO SHACK 44th BIRTHDAY SPECIAL

ARCHER

## Replacement Transistors

### PNP TYPES

For high frequency, RF-IF, and converter circuits. Replaces: 2N247, 2N248, 2N252, 2N267, 2N274, 2N308, 2N309, 2N310.
276-412, Wt. 3 oz. ..... 1.29

For mixer/oscillator converter circuits. Replaces: 2N112, 2N113, 2N114, 2N135, 2N136, 2N137, 2N140, 2N175, etc.
276-401, Wt. 3 oz. ..... .99

For universal IF circuits. Replaces: 2N111, 2N112, 2N139, 2N218, 2N219, 2N315, 2N366, 2N406, etc.
276-402, Wt. 3 oz. ..... .99

For 6 volt audio circuits. Replaces: 2N77, 2N104, 2N105, 2N107, 2N109, 2N130, 2N131.
276-403, Wt. 3 oz. ..... .99

For 12 volt audio circuits. Replaces: 2N36, 2N37, 2N38, 2N41, 2N43, 2N44, 2N45, 2N46, etc.
276-404, Wt. 3 oz. ..... .99

For 9 volt audio circuits. Replaces: 2N188, 2N189, 2N190, 2N191, 2N192, 2N195, 2N196, 2N197, etc.
276-405, Wt. 3 oz. ..... .99

For auto radio AF amplifier circuits. Replaces: 2N176, 2N178, 2N179, 2N234, 2N235, 2N35B, 2N236, 2N242, etc.
276-406, Wt. 3 oz. ..... 1.19

For high power AF circuits in auto radios. Replaces: 2N173, 2N174, 2N277, 2N278, 2N441, 2N442, 2N443, 2N1515, etc.
276-407, Wt. 3 oz. ..... 2.29

### NPN TYPES

For mixer/oscillator converter circuits. Replaces: 2N193, 2N194/A, 2N211, 2N212, 2N233, 2N234, 2N357, 2N358.
276-408, Wt. 3 oz. ..... 1.09

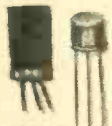
For universal IF amplifier circuits. Replaces: 2N98, 2N99, 2N100, 2N145, 2N146, 2N147, 2N148, 2N149, etc.
276-409, Wt. 3 oz. ..... 1.15

For 9 volt AF amplifier circuits. Replaces: 2N35, 2N169A, 2N213, 2N214, 2N228, 2N306, 2N312, 2N313, etc.
276-410, Wt. 3 oz. ..... .99

For 12 Volt AF amplifier circuits. Replaces: 2N306A, 2N445A, 2N446A, 2N447A, 2N556, 2N557, 2N587, 2N649, etc.
276-411, Wt. 3 oz. ..... .99

## Twin PAK "POP" SERIES

### Popular PNP Types



- 5-2N107 Types
- 5-CK722 Types

**1.98**

Radio Shack Exclusive! Great for experimenters, hams, hobbyists . . . all audio applications. Complete with transistor base diagrams.
276-031, Wt. 3 oz. 1.98

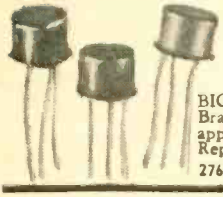
### Popular NPN Types

- 5-2N35 Types
- 5-2N170 Types

**1.98**

Big savings on NPN type transistors! Especially suited for audio applications. Great for hams, hobbyists! Includes transistor base diagram.
276-032, Wt. 3 oz. 1.98

## ARCHER Twin-Pak Transistor Kit



**1.98** Kit of 25

- 10 NPN
- 15 PNP

BIGGEST BUY yet for the hobbyist or experimenter. Brand new . . . with full length leads. Ideal for RF applications, switching and general purpose audio types. Replace many popular numbers without circuit change.
276-1516, Ship. wt. 2 lbs. ..... Net 1.98

## 3 Amp Silicon-Controlled Rectifiers

**1.95**

*TO-66 Case! 200V*

Designed to deliver loads up to 3 amps. Ideal for use in speed control operation, power converters.
276-1065 ..... Net 1.95
276-1066, TO-66 mtg. hdwr. ..... .30

## 10 GERMANIUM DIODES

*Similar to 1N34, 1N34A, 1N60*

**99¢**

Equivalent in use to silicon diodes with lower forward voltage drop.
276-821, Ship. wt. ¼ lb. ..... Net .99

For Store Addresses, Order Form, See Page 20

## Silicon Field-Effect Transistors

**1.98**

- *High Impedance Input!*
- *Low Noise! High Gain!*
- *Characteristics Similar to Pentode Vacuum Tube!*

1000's of applications where pentode tubes are used in low level circuits: field strength meters, "gate dippers," receivers, flea power transmitters, etc. TO-5 case. Includes specifications.
276-664, Sh. wt. 2 oz. ..... Net 1.98

## IBM Component Boards

**29¢**

*SAVE!*

**4 for 1.00**

All quality American made parts; ideal for builder and hobbyist alike. Each board contains at least two transistors, plus loads of other components: resistors, capacitors, coils, diodes, modules, chokes, and heat sinks. Size: 2⅜ x 3⅞".
276-616, Sh. wt. ¼ lb. ..... Net .29

## Photo-Multiplier Power Transistor

**1.98**

Photo-sensitive cell, power transistor amplifier, electronic relay. Includes specs. and diagrams.
276-847, Wt. ¼ lb. ..... Net 1.98

## 750 MA Top Hat Rectifiers

**25¢** PAK of 2

*From 50-1000 PIV*

| | | | |
|---|---|---|---|
| 276-1107 | 50 PIV | Pak of 2 | .25 |
| 276-1108 | 100 PIV | Pak of 2 | .39 |
| 276-1109 | 200 PIV | Pak of 2 | .59 |
| 276-1110 | 400 PIV | Pak of 2 | .89 |
| 276-1111 | 600 PIV | Pak of 2 | 1.39 |
| 276-1112 | 800 PIV | Pak of 2 | 1.79 |
| 276-1113 | 1000 PIV | Pak of 2 | 1.98 |

## Transistor Sockets

**99¢** Kit of 10

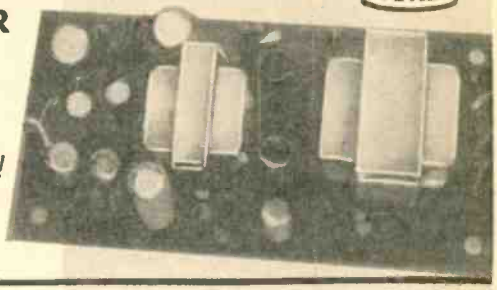
Takes PNP or NPN transistors with 3 contacts in line or triangle; complete with mounting plates. For every experimenter!
274-1510, Wt. 2 oz. ..... Net .99

# SOLID STATE COMPACT PRINTED CIRCUIT BOARDS

RADIO SHACK 44th BIRTHDAY SPECIAL

## COMPACT 1-WATT 4-TRANSISTOR PUSH-PULL AUDIO AMPLIFIER

WAS ~~$6.95~~ **NOW 5.44**



- *Completely Wired — Easy to Connect!*

Can be used as an intercom, phono, tape or microphone amplifier. Color-coded leads. Freq. response ±1.15 db. 300-15,000 cps. Input: 5000Ω. Output: 8-12 ohms.

277-038, Sh. wt. 1 lb., 2x3¾x1¼" ..... Net 5.44

## 3-TRANSISTOR AM TUNER WITH STANDARD 540-1600 KC BAND

WAS ~~$7.95~~ **NOW 5.44**

*Superhet Sensitivity & Selectivity!*

Low-power tuner has variable capacitor with dial, loopstick antenna, oscillator converter, IF's, detector and associated components. Vertical & horizontal mounting. Extra-long leads for easy connection to amplifier, battery, etc.

277-329, Ship. wt. 10 oz. ..... Net 5.44

*Fully Wired!*

## ARCHER DELUXE MODULES

- *Solid State Dependability!*
- *Screw Terminal Connections!*
- *Can be Mounted in Any Position!*
- *Ideal for Builders & Hobbyists!*

**4.95**

MADE IN U.S.A.

### SIREN MODULE

A perfect warning device! Reproduces the upward scream and downward wail of a siren. Size: 3⅞x2¼x⅞".

277-266, Ship. wt. ½ lb. ..... Net 4.95

### WIRELESS GUITAR AMPLIFIER

Play guitar through standard AM radio. Range up to 25 feet. For use with crystal or ceramic pickups.

277-299, Ship. wt. 1 lb. ..... Net 4.95

### SUPER HIGH GAIN AMPLIFIER

Extremely high gain of 100,000. Can be used as hearing aid, audio signal tracer, etc. Size: 3⅞x2¼x⅞".

277-251, Ship. wt. ½ lb. ..... Net 4.95

### AC POWER SUPPLY

Use with rectifier-electronic filter. Comes complete with line cord.

277-258, Ship. wt. 2 lbs. ..... Net 1.95

### POWER AMPLIFIER

2-watt amplifier is ideal with tuners, mikes, paging systems, or as a signal tracer. Size: 3⅞x2¼x⅞".

277-253, Ship. wt. ½ lb. ..... Net 4.95

### ELECTRONIC FILTER

Dual 6VDC output; low ripple and filtered! Use with any AC power supply.

277-259, Ship. wt. ½ lb. ..... Net 3.95

### AUTO BURGLAR ALARM

Gives instant alert when car door or trunk is forced open. Horn blows even after doors are re-closed.

277-252, Ship. wt. ½ lb. ..... Net 4.95

### PHONOGRAPH AMPLIFIER

Designed for phonographs using high impedance crystal or ceramic cartridges. Size: 3⅞x2¼x⅞".

277-261, Ship. wt. ½ lb. ..... Net 4.95

For Store Addresses, Order Form, See Page 20

RADIO SHACK 44TH BIRTHDAY SPECIAL

# SAVE BIG! ELECTRONIC PARTS NOW WAY OFF REGULAR PRICES

## RUNNING TIME METER

Reg. $6.95 — Sale Price 5.44

- *Records 0 to 9999.99 Hours!*

Measures elapsed operating time of electronic equipment, transmitters, receivers, industrial machines, etc. Records running time in hours, tenths and hundredths. Operates either from 40 or 110/125 VAC, 60 cy., with external resistor (supplied). Synchronous motor drive. Size: 2¼x2¼x3⅛".

273-1628, Sh. wt. 3 lbs. ..... Net 5.44

## 500' OF HOOK-UP WIRE

*Solid & Stranded* 2.49

Five 100-ft. coils, sizes #18 through #22. Cotton, vinyl insulation; different colors.

278-1484, Wt. 2 lbs. .... Net 2.49

## 75' MINI-SPEAKER WIRE 1.19

Place speaker away from amplifier. 2-conductor #24 wire. Plastic insulation.

278-1509, Sh. wt. 1¼ lbs. ..... Net 1.19

## NUMERAL LAMPS

Orig. $1.99 — 1.44

Bayonet type socket with 11 interchangeable lenses. For ¾" hole.

272-343, Sh. wt. 4 oz. ..... Net 1.44

## 5-LB. ELECTRONIC MYSTERY BOX

1.98 *Worth at Least $25!*

Hobbyist's delight! Assorted switches, resistors, capacitors, transformers.

270-496, Sh. wt. 5½ lbs. ..... Net 1.98

## 6-FOOT LINE CORDS

39¢

Feature #18 wire complete with molded plug. Ideal for home or shop!

278-1255, Sh. wt. ¼ lb. ..... Net .39

## DPDT SWITCH

Neutral Center

99¢ Pak of 2

Kit of two DPDT toggle switches with long bar handles. Heavy duty excellent for power circuits, PA systems, etc. Rated at 10 amps, 125 VAC. With on/off plate, screw terminals, and mounting nut.

275-1533, Sh. wt. ¼ lb. ..... Net .99

## 6-PDT PUSH BUTTON SWITCH

49¢

Replacement switches for most walkie talkies. May also be used in circuits where momentary action is required. Size: 1x11/66x7/16". Shaft length, with knob: ¾".

275-051, Sh. wt. ¼ lb. ..... Net .49

## COAX CABLE CONNECTORS

278-200, PL-259 ..... Net .59
278-201, SO-239 ..... Net .50
278-1370, UG175/U, Adapter for RG58/U cable .... Net .16

## FUSE HOLDERS

99¢ Kit of 6

Chassis mounting fuse holders for popular 1¼x¼" fuses. 3 holders accept 2 fuses, and 3 take single fuse. Each equipped with snap-on dust cover.

270-337, Sh. wt. ¼ lb. ..... Net .99

## COMPOSITION RESISTORS

1.99 Pak of 100

1/10, ½, 1, 2 watts. Many 5% and "Magnetic Film" types. Comes complete with free Color Code Chart.

271-810, 2 lbs. Kit of 100 Net 1.99

## 6.3 VOLT FILAMENT TRANSFORMER

98¢

Hundreds of applications! Input: 117 volts at 60 cy. Output: 6.3 volts at 1.2 amps. Tinned color-coded leads. Size: 1-15/16x1¼x9/16".

273-050, Sh. wt. 1 lb. ..... Net .98

## ARCHER TWILIGHTER

- *Automatically Turns Light On at Dusk, Off at Dawn!*
- *Silent Guardian of Your Home or Office!*

Reg. $5.95 — Sale 4.44

An electronic "eye" that automatically controls selected lights, turning them on at sunset, off at dawn, daily — without resetting. Ideal for controlling driveway lights, interior lights, displays. Size: 3⅞x1⅜x2⅜".

275-1399, Sh. wt. 1 lb. ..... Net 4.44

## 24 VOLT POWER TRANSFORMER

1.98

Use for transistor, semi-conductor circuitry conversions, etc. Operates from primary 117V 60 cy. Secondary: 24 VAC 1.2 amps. Open frame. Size: 2x1-15/16x3-3/16".

273-1480, Sh. wt. 2 lbs. ..... Net 1.98

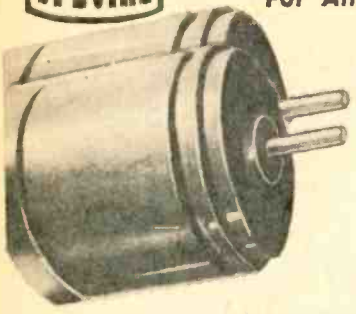
Store Addresses, Order Form, See Page 20

RADIO SHACK 44TH BIRTHDAY SPECIAL

# Thrifty Buyers Will Save During Our 44th ANNIVERSARY SALE

## MINIATURE 6 VOLT SYNCHROS

***For All Remote Control Uses!***



**4.44** per pair

*Ideal for:*

- *Amateur Beam Antennas!*
- *Weathervanes!*
- *Indicating Uses!*

Used originally in aircraft equipment. Compact; ruggedly built. For 26 VAC @ 400 cycles; guaranteed to operate efficiently at 6 VAC @ 60 cycles. Includes wiring diagram. Size: 1⅜ x 1-9/16". Shaft size: ⅛ x ½".
273-2006, Sh. Wt. 1 lb. ..... Pair 4.44
273-050, 6.3 VAC Transformer.. Net .98

## HAYDON 1 RPM TIMING MOTORS

- *Made in U.S.A.!*

**1.49**

New! Rated @ 5 watts. Shaft size ⅛" x ⅜". Overall 1⅞ x 2⅜ x 1-1/16" mtg. ctrs: 1⅞". Perfect for displays, signs, & countless other timing uses!
273-1481, Sh. Wt. ½ lb. ..... Net 1.49

## 4" VENTILATING FAN AND MOTOR

- *4-Bladed!*
- *Made in USA!*

**2.44**

Use to cool hi-fi equipment, amateur gear, etc. Rugged laminated steel motor. Permanently lubricated bearings. Long leads. Shaft ¼" x 1⅜". 3 x 2½ x 1¼".
273-1630, Sh. Wt. 1 lb. ..... Net 2.44

## SLUG-TUNED FERRITE LOOP ANTENNA COIL

**79¢**

For transistor, tube or crystal radios! Sensitive high "Q" antenna matches all tuning condensers in broadcast band. Complete with mounting bracket and hardware. 2 x ½".
270-1430, 4 oz. ..... Net .79

## 3-DIGIT RESET COUNTER

Orig. $1.49 **99¢**

Mufti-purpose — counts to 999! Black numerals on white; steel lever actuating arm. 1¼" knob for zero reset. Size-less knob and lever arm.
275-1408, ½ lb, 1½ x ⅞" ..... Net .99

## MINIATURE DC MOTORS

**3 for 99¢**

- *Low Battery Drain!*
- *Double Permanent Ferrite Magnets!*

Operate from a single flashlight cell, 1½ to 12V. Bronze bearings, brass shoe bearings, & connecting leads. Shaft: ½ x 1/16".
273-232, Wt. ½ lb. 1⅜" x 2" x¾".
Net 3/99¢

## 115 VAC SOLENOIDS

**1.59**

- *Continuous Operation!*

Max. stroke 1¼" DC resistance of 25 ohms ±10%. Max. lift: 4 to 11 lbs. Removed from equipment but guaranteed 100%. Size 2-1/16 x 2½ x 1-13/16". Mfg. by Soreng.
275-149, Wt 2 lbs ..... Net 1.59

## POTTER-BRUMFIELD 6-VOLT AC RELAY

**1.49**

- *3-pole Single Throw!*

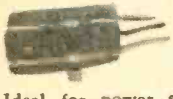
All brand new! Contacts rated @ 5 amps. Coil operated at 6 VAC. 1¾ x 1⅛ x 1".
275-096, Wt ¼ lb. ..... Net 1.49

## SPST MINIATURE MERCURY SWITCH

**69¢**

Normally "On or Off". Tipping one side or other makes or disconnects mercury with contacts. Silent operation. For 1 amp @ 115 volts. Long wire leads.
27-9000, Sh. Wt. 4 ozs. ..... Net 69¢

## HIGH CAPACITY, LOW VOLTAGE CAPACITOR



**49¢**

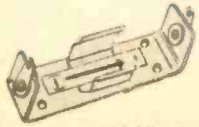
Ideal for power supplies, replacements, hobbyists, experimenters. 2000/400/100 mfd at 25 VDC. 2½ x 1⅜".
272-1496, Wt. 2 oz. ..... Net .49

## NEON PILOT LIGHTS

**99¢** Set of 2

With neon lamp, jewel and socket. Includes 100,000Ω dropping resistors. Operates on 115 volts. Size ⅜ x 1¼". 1 red and 1 yellow.
272-328, Wt. ¼ lb. ... Net .99

## METAL BATTERY HOLDERS



**99¢** Kit of 8

4 single "AA", 1 double "AA", 1 "C" cell, and one double "D" cell holder. All metal construction with solder lugs at each end.
270-381, Sh. Wt. 1 lb. ..... Net .99

## EXPERIMENTERS UTILITY BOX

**1.00**

- *Sturdy Bakelite Case!*
- *Removable Aluminum Cover!*
- *3¾ x 6¼ x 2"!*

Perfect for housing test equipment, experimental circuits. Build multi-meters, speed controls, transistor checkers!
270-627, Wt. 2 lbs. ..... Net 1.00

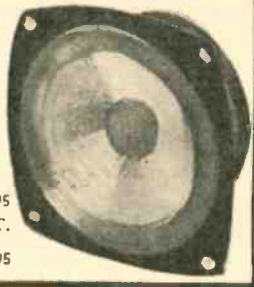
For Store Addresses, Order Form, See Page 20

RADIO SHACK 44th BIRTHDAY SPECIAL

# MIKES, SPEAKERS, HEADSETS, TOOLS FOR THE ELECTRONICS EXPERIMENTER

## BUILD "EI'S" MIGHTY SUB-MINI SPEAKER

*4" Acoustic Suspension FE-103 Speaker System!*



The fabulous Realistic FE-103, complete with cabinet construction details as published in Electronics Illustrated! 30-17,000 cps; 15 watts; 8 Ω.

**7.95**

40-1197, FE-103, Wt. 5 lbs. Net 7.95

CONTOUR NETWORK KIT. With instructions.
40-808, coil, capacitor, etc., Net 3.95

## MINIATURE PM SPEAKERS FOR TRANSISTOR PROJECTS, RADIOS

### 8 Ohm Impedance

Small in size but big in sound! Three sizes to choose from: 2½", 2¼", or 2". All for the same bargain price!

40-247, 2½", ..... Net .98
40-246, 2¼", ..... Net .98
40-245, 2", ..... Net .98

**ONLY 98¢ EACH!**

## MIDGET EARPHONES

For Transistor Radios

**98¢**

Resp. 50-9000 cps. With replaceable earplug, cord. 10 ohms.
33-175, Wt. 2 oz. ..... Net .98
33-174, w/3/32" plug, Net .98

## STEREO HEADSET

Separate Transducers!

**2.79**

Perfect for use with receivers, tuners, amplifiers, kits and recorders! 8 ohms.
33-1008, ..... Net 2.79

## CRYSTAL LAPEL MIKE

- *For Recorders, PA, Paging!*

**1.89**

Sensitive! Concealable! Response: 200-300 cps.
33-100, Wt. .8 oz. .... Net 1.89

## CRYSTAL MIKE CARTRIDGE

**89¢**

Precision made crystals! Response up to 7000 cy.
270-095, 8 oz. ..... Net .89

## FABULOUS THERMO-ELECTRIC GLUE GUN REALLY WORKS!

*60-Second Bonding Plus Instant-set Caulking! No Clamping! No Cleaning!*

**5.99** *for make-or-mend jobs*

Makes all other kinds of gluing obsolete! Uses unique hot-melt glue sticks: melted glue bonds permanently in 60 seconds, providing a flexible bond that's perfect for furniture, pottery, metal, leather, plastic or fabric. Use with white sealer sticks for water proof caulking. Glue and caulking included.
64-2860, Gun, 2 lbs..Net 5.99
64-2861, 7 Glue sticks, 1 lb. ..... Net .49
64-2862, 7 Sealer Sticks, 1 lb. ..... Net .49

## POWERFUL CERAMIC MAGNETS

*1,000's of Home, Office, Auto Uses!*

64-1885

64-1875

**10¢** Each For 10 **15¢** Each Singly **25¢** Per Pair

**10 FOR 1.00**

## 6.95 LAVALIER DYNAMIC MIKE

### Neck/Hand/Desk Use!

Pencil-slim hi-Z for use at home, studio, or in PA and guitar systems! With cord, stand. 50K.
33-928, Ship. wt. 2 lbs. ..... Net 6.95

## LOW COST 25-W. SOLDERING IRON

**1.89**

Precision designed! Comes complete with UL Cord and Plug. Uses 117V AC/DC.
64-2182, 1 lb. ..... Net 1.89
64-2178, Extra copper Tip .. Net .25

## OUR OWN 60/40 SOLDER

**69¢** Each
**12 & UP**
**59¢** Each

U.S. made with superactive rosin core. Fits fed. specs. QQ-S-571d
64-0002 ..... Net .69

## STEEL CATCH-ALL STORAGE BOX

*6"H x 8¼"D x 5¾"W*

**1.95**

4 draws with adjustable compartments.
64-2050, 3 lbs. ..... Net 1.95

## ASSORTED ELECTRIC HARDWARE

*6"Hx8¼"Dx 5¾"W*

**99¢**

Over 600 pieces! Something here for everyone! All brand new—no sweepings! One full pound. Comparable value: $4.50!
64-2890, Wt. 1 lb. .... Net .99

For Store Addresses, Order Form, See Page 20

# NOW anyone can buy his own STANDARD DIAL PHONE

RADIO SHACK 44TH BIRTHDAY SPECIAL

**Comes Ready to Install**
**Save Time! Save Money!**

## Only 7.95

**Complete with Dial, Bell, Coil and Connecting Cable!**

Instant service! Most popular phone for intercom, extension, private system use! Get this modern, low-cost, easy-to-install telephone for the sheer convenience of it! Each is factory reconditioned for trouble-free service. Bakelite body, simple three-wire hook-up, handset, metal base. Plus — a generous supply of connecting cable! (Note: Use of telephone equipment not installed by a telephone company may be subject to local telephone tariff.)
279-371, Ship. wt. 10 lbs. ..... Net 7.95

### 30 Ft. Telephone Extension Cord

Move your phone from room to room! Highest-quality 4-conductor flexible cord plus standard telephone jack and plug. Ideal for intercom. Use 2 or more for extra length.
279-1261, Sh. wt. 1¼ lbs. ..... Net 2.98

### Telephone Plugs & Jacks

Ideal for making extensions, these plugs and jacks each weigh approximately ¼ pound.
279-366, plug ..... Net 1.25
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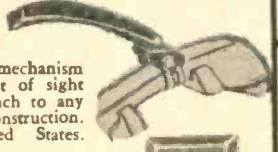
### Coiled Phone Cords

Stretches up to six feet. 3-conductor. Shipping weight: ¼ pound.
278-361 ..... Net 1.19

Four conductor extends up to fifteen feet. Shipping weight: ½ pound.
278-1389 ..... Net 5.95

### Shoulder Rest



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*For Mobile and Replacement Use!*

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Store Addresses, Order Form, See Page 20

RADIO SHACK 44TH BIRTHDAY SPECIAL

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Separate Speaker for Maximum Volume!

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### MODEL TRC-33

- Dual Channel 100 MW no license required; Superhet-tuned RF stage; Adjustable Squelch.
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Cat. #12-626

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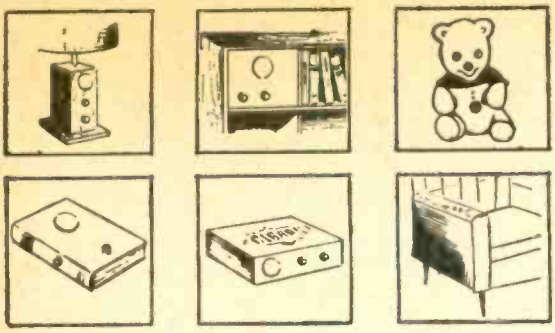

# What's your project for our "Build In" radio?

*Here's a wired transistor radio in 3 pieces. Dextrous do-it-yourselfers should have a field-day with this one.*

You carpenters, metal-workers and gift designers will really appreciate Radio Shack's novel "Build In" — a 6-transistor superhet that's really *a kit that isn't a kit.* Confused? Part *one* is the radio, 100% wired, installed in a crystalline 2¼ x 1 x 3⅛" case with the tuning knob sticking out of one end, and 8 wires out of the other. Part *two* is a separate volume control with built-in switch, knob, and soldered leads. Part *three* is a 2¼" PM speaker installed in a plastic case, with soldered leads.

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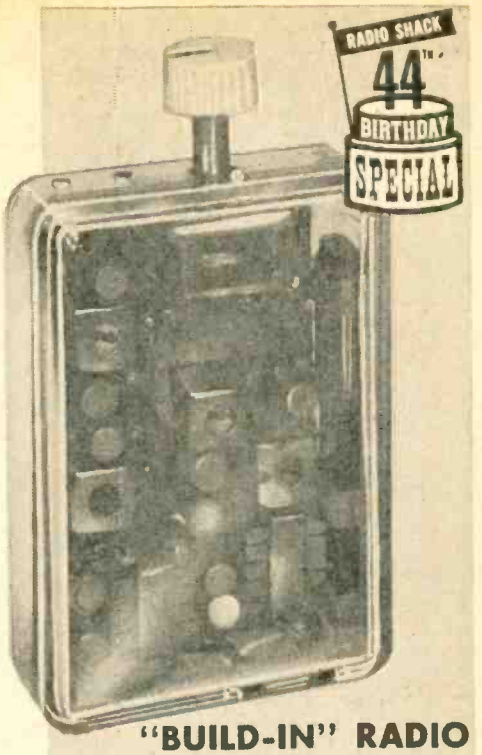
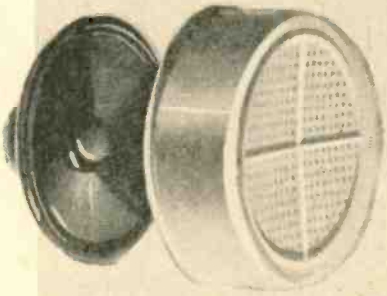
For Store Addresses, Order Form, See Page 20




"BUILD-IN" RADIO

VOLUME CONTROL AND SWITCH



PM SPEAKER IN CASE

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# POSITIVE FEEDBACK

JULIAN M. SIENKIEWICZ, EDITOR

Oh, for a quiet Sunday afternoon in the fall when the pro football teams are at it again. Our color TV set (Heathkit, what else?) was all tuned up, color was perfect, when guess who dropped in to bug us just at the opening kickoff? Well, if you read this column in our last issue you know our buttinsky friend who probably was hit on the head by an adding machine during his first days in our world.

You see, Hal (would you believe my previously unnamed friend received no less than 20 letters and one marriage proposal from admiring readers?) lives in a world of numbers. He gets his kicks by sitting alongside a throughway and reading license plates as they flash by at 60 miles an hour. But, back to the interrupted football game and Hal's visit.

Hal started to chat about dates and birthdays. His point was that years are numbered, so are the days, and then there are number notations used for the months—like the Declaration of Independence was adopted on 7-4-76. From this digital beginning, Hal said, "Tell you what I'm gonna do—I'll guess your birthday provided

**Last Month's Puzzler**

If you recall last month's puzzler, a number was computed, then one of its digits was struck out (as long as it was not a zero). The resulting digits were added, and the answer given to my friend, Hal. He quickly gave back the number struck out. The method used to determine the struck number is quite simple. Hal subtracted the number given to him from 9. The answer is the struck-out number. If the number given to you is more than one digit, add them up; i.e., 15 will give 1 + 5 or 6. This subtracted from 9 would yield 3, which is the number that was struck. If the number given is 9, the number struck out is 9. Practice this problem a while till you can do it in your head quickly—then, as old Dale C. would have it, you'll be all set to win friends and puzzle them.

## POSITIVE FEEDBACK

you're clever enough to do some simple arithmetic." Now, that was a kick in the head (I finished sixth grade like most other editors).

Hal began by giving me the following instructions. "Multiply the number of the month you were born by 5. Now add 6. Multiply by 4, then add 9. Okay, multiply by 5 again." A quick check proved I was qualified to graduate from the sixth grade.

"Now," Hal instructed, "add the number of the day you were born and give me the resulting number."

I mumbled "792."

"Oh," he said, "You were born on June 27th, you old crab."

As usual, Hal was right and I didn't know how he did it. And as usual it took an hour of pleading and a six-pack or two to pry the secret of his mystical math. But also as usual, my dear readers, you'll have to wait 'til next issue to find out how it's done.

**Nylon Zapper.** *Flash!* Exclusive from our Way-Out Department. You can now clothe the interior walls of your home with a *furry* paint. What it amounts to is that you dress the walls in nylon, almost like carpeting, by an electrostatic process. First, an adhesive is spread on the wall surface. Next, a special gun is used to shoot millions of nylon hairs against the sticky wall. Each hair is 500 thousandths of an inch long. The gun is connected to a high-voltage power supply whose 50,000-volts output adds a static charge to the nylon hairs as they leave the gun. Since the hairs are all charged with the same polarity, they repel each other and cling endwise to the glue. As a result, they stick from the wall like brush hairs, and dry the same way. In addition to providing a novel decor, the furry walls soak up sounds and result in an ultra-quiet room. If you are interested in ceiling-to-floor carpet, drop a line to Cleveland Static Products Co., Terminal Tower Bldg., 50 Public Sq., Cleveland, Ohio 44113. ■

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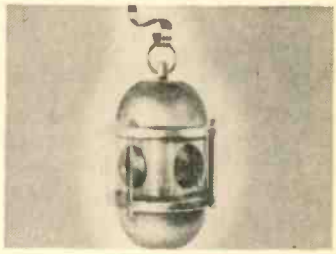

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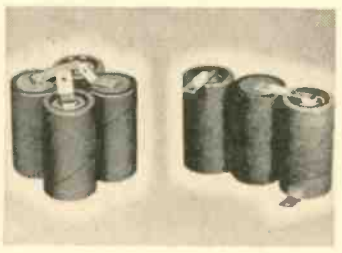

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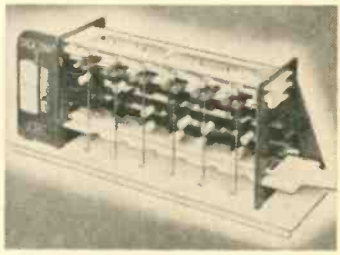
70,812HP Trickle Charger (1-10 cells) 10.95
Edmund Scientific Co., Barrington, N.J. 08007



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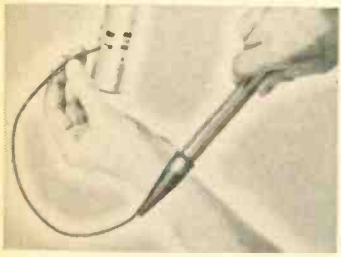

### 'PIPE' LIGHT INTO REMOTE AREAS

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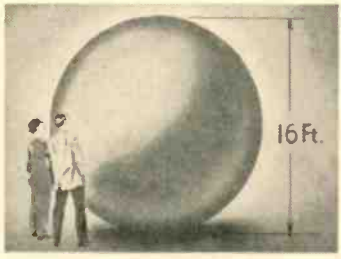


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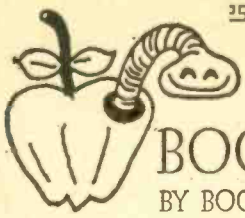

# BOOKMARK

BY BOOKWORM

**It's a Snap.** Photography has gone *electronic!* Not since the days of George Eastman and his "You push the button, we do the rest" slogan, has home photography been so easy for so many. Paradoxically, all this automated advancement is based on electrical and electronic phenomena. While the man in the street can take a picture by simply pushing a button, the advanced photo-hobbyist needs to know all about these phenomena if he is to master his avocation.

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Hard cover
159 pages
$5.95

The author, Marshall Lincoln, is well-known for his articles that have appeared in many magazines and newspapers including RADIO-TV EXPERIMENTER and the NATIONAL OBSERVER. Mr. Lincoln's rare background combination of professional photography experience and hobby electronics (he's a licensed Ham) makes him undoubtedly the most qualified author for his latest effort. (Beginning in this issue, Mr. Lincoln's new Ham column will be a regular feature in RADIO-TV EXPERIMENTER. Check the *Table of Contents.*) *Electronics for Photographers* is available at bookstores and major photo supply stores, or directly from the publisher: Amphoto Books, 915 Broadway, New York, N. Y. 10010.

**Box It.** Although the speaker system usually affects sound quality more than any other part of an audio system, the hi-fi bug can do little to improve a speaker after it is selected. He can do much, however, to get the sound quality he desires through providing the proper enclosure for it. A new book, *How To Build Speaker Enclosures,* tells how to do it. It is written by two of the nation's leading authorities in the field of acoustical engineering, Alexis Badmaieff and Don Davis.

This basic text is an exceptionally thorough and comprehensive "do-it-yourself" book providing a wealth of practical and theoretical information on the "whys" as well as the "hows" of constructing high-quality, top performance speaker enclosures.

Soft cover
160 pages
$3.25

Authors Badmaieff and Davis discuss the basic types of enclosures—infinite baffle, bass-reflex and horn-projector types, as well as several combinations of these—and state their advantages and disadvantages. They give detailed instructions and drawings for building the various enclosures, including practical tips and construction methods as well as explaining how to test the enclosures.

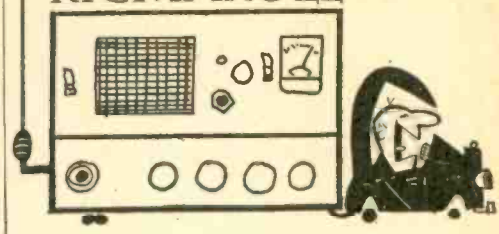
The book will be especially useful for technicians, engineers, amateur hobbyists, or anyone who appreciates high quality performance in his music system, but also desires to keep cost low. Copies are available from electronics parts distributors and bookstores throughout the country, or from the publisher, Howard W. Sams & Co., Inc., Dept. RRF, 4300 West 62nd St. Indianapolis, Ind, 46206.

**The Language of Construction.** Blueprints give designers and draftsmen a practical method of communicating their plans to craftsmen. In fact, blueprints may be considered a type of shorthand that presents plans on paper in a simplified form. A knowledge of blueprints, therefore, is the key to the language used by building contractors, electricians, plumbers, carpenters, and others who have anything to do with construction. Blueprint reading is especially necessary to the electronics engineer who must study six or more semester hours on the subject during his college days.

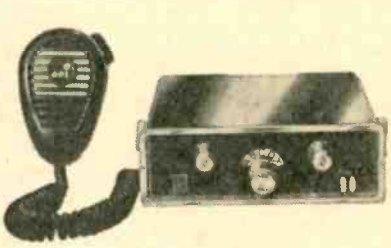
Hobbyists, technicians and electronics crafts-

*(Continued on page 135)*

# CB RIGS & RIGMAROLE



■ **Micromitter?** Described as "the smallest rig on the market," the new *Courier TR-5* is a miniscule 3¾ in. wide, 6¼ in. deep and 1⅞ in. high. Wedged into its flea-sized cabinet are a 5-channel transceiver offering 100% modulation, an illuminated channel selector, a transmit indicator, an auxiliary speaker jack, and a special safety circuit to protect against mismatched antennas and incorrect power polarity.



*e.c.i. Courier TR-5*

The transmitter is built with silicon transistors manufactured to a higher peak voltage than ever before. Somewhere they've even managed to grease up the sides of a zener diode and slip it in—though it must have been a tight squeeze.

Dress it up with jazzy black/chrome exterior, color it *guaranteed for 10 years*, price it at $99, and call it made by Courier Communications, Inc., 56 Hamilton Ave., White Plains, N.Y. 10601. (That's right Fred—Courier is the new name for everybody's old friend, e.c.i.)

**Whipping A Problem.** One of the more perplexing annoyances of CB has been installation of a rig aboard a boat. Seems that most installations require that you mount some kind of weird junk below the water line to act as a ground for proper operation of the antenna system. The "weird junk" usually consists of piping or metal screening—all of which must be replaced every few years.

Not unexpectedly, this brought complaints from boat owners, radio manufacturers, and a small but noisy band of scratched-up mermaids.

*(Continued on page 30)*

# 10 Reasons why RCA Home Training is your best investment for a rewarding career in electronics!

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RCA stands for dependability, integrity and pioneering scientific advances. For over a half century, RCA Institutes, Inc., has been a leader in technical training.

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Start today on the electronics career of your choice. On the attached card is a list of "Career Programs", each of which starts with the amazing AUTOTEXT method. Look the list over, pick the one best for you and check it off on the card.

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All during your program of home study, your training is supervised by RCA Institutes experts who become personally involved in your efforts and help you over any "rough spots" that may develop.

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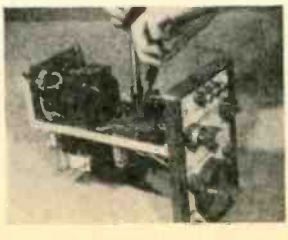
Transistor experiments on programmed breadboard – using oscilloscope.

Construction of Oscilloscope.



Construction of Multimeter.

## CB RIGS & RIGMAROLE

*Continued from page 26*

Antenna Specialists came to the rescue with their new Model ASM-23 *Sea Hook* marine antenna.

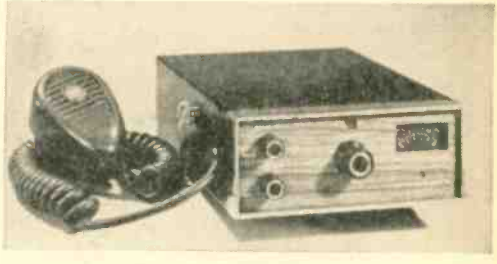
The ground plate has been eliminated through the use of link coupling; the antenna itself is a 97 in. whip made using solid brass (chrome-plated) for all critical parts and a white cycolac base. The base has been designed to permit the antenna to be folded over when negotiating low bridges and high-flying butterflies.

For additional information contact Antenna Specialists Co., 12435 Euclid Ave., Cleveland, Ohio 44106.

*Antenna Specialists Model ASM-23 Sea Hook antenna with foldover hinge at base (see inset)*

**Wood You Believe It?** Somebody (Kaar Electronics Corp., 1203 W. St. George Ave., Linden, N.J. 07036) has a CB rig which offers you a choice of wood grain or colored front panels. The rig is the *Skyhawk Mark II, a* 23-channel job using all solid-state circuitry. The thing puts out a healthy 3 watts and can drag in signals at levels of less than ½ μV—no easy task.

This business of offering decorator-styled CB rigs is long overdo in a world where you can buy everything from refrigerators to toothpicks



*Kaar Skyhawk Mark II*

in your choice of colors. We're glad to see that CB manufacturers have picked up on this plan.

**Keeping Pace With Pace.** Pace Communications has a splendiferous mobile CB display touring around the countryside right now, and if it comes around your neck of the band you should make it a point to take a peek. Within the 24-ft. trailer are numerous Pace CB rigs (in action), good fellowship, and free advice on any CB problems you have.

During the first week in September the unit

# Now Available For Immediate Delivery... Deluxe Heathkit Rectangular Color TV

Kit GR-295
$479.95*
(295 sq. inch viewing area)

Kit GR-180
SAVE $30 NOW ONLY $349.95**
(180 sq. inch viewing area)

**Exclusive Features That Can't Be Bought In Ready-Made Sets At Any Price!**

All color TV sets require periodic convergence and color purity adjustments. Both Heathkit Color TV's have exclusive built-in servicing aids, so *you* can perform these adjustments anytime . . . *without* calling in a TV serviceman . . . *without* any special skills or knowledge. Just flip a switch on the built-in dot generator and a dot pattern appears on the screen. Simple-to-follow instructions and detailed color photos in the manual show you exactly what to look for, what to do and how to do it. Results? Beautifully clean and sharp color pictures day in and day out . . . and up to $200 savings in servicing calls throughout the life of your set.

**Exclusive Heath Magna-Shield** . . . surrounds the entire tube to keep out stray magnetic fields and improve color purity. In addition, **Automatic Degaussing** demagnetizes and "cleans" the picture everytime you turn the set on from a "cold" start.

**Choice Of Installation . . . Another Exclusive!** Both color TV's are designed for mounting in a wall or your own custom cabinet. Or you can install either set in a choice of factory assembled and finished Heath contemporary walnut or Early American cabinets.

**From Parts To Programs In Just 25 Hours.** All critical circuits are preassembled, aligned and tested at the factory. The assembly manual guides you the rest of the way with simple, non-technical instructions.

**Plus A Host Of Advanced Features** . . . a hi-fi rectangular picture tube with "rare earth" phosphors for brighter, livelier colors and sharper definition . . . **Automatic Color Control** and **Gated Automatic Gain Control** to reduce color fading and insure jitter-free pictures at all times . . . deluxe **VHF Turret Tuner** with "memory" fine tuning . . . **2-Speed Transistor UHF Tuner** . . . **Two Hi-Fi Sound Outputs** for play through your hi-fi system or connection to the special limited-field speaker . . . **Two VHF Antenna Inputs** — 300 ohm balanced and 75 ohm coax . . . **1-Year Warranty** on the picture tube, 90 days on all other parts . . . plus many more deluxe features. For full details, mail coupon for FREE Heathkit catalog.

***Kit GR-295,** everything except cabinet, 131 lbs. . . . . **$479.95**
**GRA-295-1,** walnut cabinet (shown above) 56 lbs...19" D. x 31" H. x 34½" W. . . . . **$62.95**
Deluxe contemporary walnut & Early American cabinets also available at $94.50 & $99.95
****Kit GR-180,** everything except cabinet, 102 lbs. Was $379.95. . . . . **NOW ONLY $349.95**
**GRA-180-1,** walnut cabinet (shown above) 41 lbs...18¼" D. x 28¾" W. x 29" H. . . . . **$49.95**
Early American cabinet available at $75.00

**FREE 1968 CATALOG**

Describes these and over 300 kits for stereo/hi-fi, color TV, amateur radio, shortwave, test, CB, marine, educational, home and hobby. Save up to 50% by doing the easy assembly yourself. Mail coupon or write Heath Company, Benton Harbor, Michigan 49022.

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## CB RIGS & RIGMAROLE

will be in the Baltimore/Washington/Virginia areas. Later, it will then head south through North Carolina, Georgia, and finally hit Florida during the last week in September. In October the unit will start out in Alabama and work its way through Mississippi, Tennessee, and Kentucky. By mid-month it will be in Missouri and

*Inside Pace's CB-Mobile*

heading for Kansas towards an end-of-the-month stint in Oklahoma. The last days of October place the trailer in Arkansas, Texas, and Louisiana. November finds it devoting the first half of the month to Texas and then finishing off the month (and tour) in New Mexico, Colorado, Utah, Las Vegas, Arizona, and finally back to California by December 1.

The trailer will be displayed (in a large majority of instances) at J. C. Penney stores along its route. Listen on the band or check with your local club for specifics. You might wish to contact Bill Thomas at Pace to set up a club visit when the thing is in your area. The address is Pace Communications Corp., 24049 Frampton Ave., Harbor City, Calif. 90710. ■

"I've been bouncing signals off what?"

# New Heathkit® AR-15 Solid-State Stereo Receiver


## 150 Watts . . . AM-FM Stereo . . . $329.95†

**"Black Magic" Panel Lighting** A touch of the power switch and presto! . . . The black magic panel lights up with a slide-rule dial for easy tuning, and instant identification of all controls.

**Integrated Circuits** . . . two are used in the IF amplifier for hard limiting excellent temperature stability, increased reliability. Capture ratio is 1.8 db. Each IC is the size of a tiny transistor, yet each contains 10 transistors, 7 diodes, and 11 resistors.

**Crystal Filters** . . . two are used in the IF amplifier to replace the usual transformers . . . Heath hi-fi exclusive. Provide near-perfect bandpass characteristics, (70 db selectivity) yet no adjustment is ever needed!

**Now From The World's Most Experienced Solid-State Audio Engineers Comes The World's Most Advanced Stereo Receiver . . . The New Heathkit AR-15.** There's nothing like it anywhere in the transistor stereo market place. Besides the use of space-age integrated circuits and exclusive crystal filters in the IF section, it boasts other "state-of-the-art" features like these:

**150 Watts Dynamic Music Power** . . . the highest power output of any transistor stereo receiver . . . delivers the coolest, most natural sound you've ever heard.

**All-Silicon Transistor Circuitry** . . . a total of 69 transistors, 43 diodes and 2 IC's for maximum reliability.

**Positive Circuit Protection** . . . four Zener diodes and two thermal circuit breakers protect the driver and output transistors from overload and short circuits of any duration.

**Field Effect Transistor FM Tuner** . . . cascode 2-stage FET RF amplifiers and an FET mixer provide high overload capability, excellent cross modulation and image rejection. Sensitivity 1.8 uv. Features 4-gang variable capacitor and 6 tuned circuits for extreme selectivity under the most adverse conditions. Completely shielded . . . completely assembled.

**Two Calibrated Tuning Meters** . . . for signal levels, for center tuning — doubles as a VOM for check-out during or after kit assembly. Plus automatic switching to stereo, transformerless design, filtered outputs and a host of other deluxe features. Full details in FREE catalog.

**† Kit AR-15,** (less cabinet) 28 lbs. . . . . **$329.95**
**AE-16,** assembled wrap-around walnut cab., 7 lbs. . . . . **$19.95**

**AR-15 SPECIFICATIONS — AMPLIFIER SECTION: Dynamic Power Output Per Channel (Music Power Rating):** 8 ohm load; 75 watts. **Continuous Power Output, Per Channel*:** 8 ohm load; 50 watts. **Power Bandwidth For Constant 0.5% Total Harmonic Distortion*:** 6 Hz to 25 kHz. **Frequency Response (1 watt level):** ±1 db, 6 to 50,000 Hz. ±3 db, 4 to 70,000 Hz. **Harmonic Distortion:** Less than 0.5% from 20 to 20,000 Hz at 50 watts output. Less than 0.2% at 1,000 Hz with 50 watts output. Less than 0.2% at 1,000 Hz with 1 watt output. **Intermodulation Distortion (60 Hz: 6,000 Hz=4:1)** Less than 0.5% with 50 watts output. Less than 0.2% with 1 watt output. **Damping Factor:** 45. **Hum & Noise:** Volume control at minimum position; —80 db. PHONO; **Channel Separation:** PHONO; 45 db. TAPE & AUX.; 55 db. **Output Impedance (each channel):** 4, 8 & 16 ohms. **FM SECTION (Mono): Sensitivity:** 1.8 uv*. **Frequency Response:** ±1 db, 20 to 15,000 Hz. **Antenna:** Balanced input for external 300 ohm antenna, unbalanced, 75 ohm. **Volume Sensitivity:** Below measurable level. **Selectivity:** 70 db*. **Image Rejection:** 90 db. **IF Rejection:** 90 db minimum*. **Capture Ratio** 1.5 db*. **AM Suppression:** 50 db*. **Harmonic Distortion:** 0.5% or less*. **Intermodulation Distortion:** 0.5% or less*. **Hum & Noise:** 65 db*. **Spurious Rejection:** 100 db*. **FM SECTION (Stereophonic): Channel Separation:** 40 db or greater. **Frequency Response:** ±1 db, 20 to 15,000 Hz. **Harmonic Distortion:** Less than 1% at 1,000 Hz with 100% modulation. **19 & 38 kHz Suppression:** 55 db or greater. **SCA Suppression:** 50 db. **AM SECTION: Sensitivity:** 12 microvolts at 1,000 kHz. **Image Rejection:** 60 db at 600 kHz, 40 db at 1400 kHz. **IF Rejection:** 70 db at 1,000 kHz. **Harmonic Distortion:** Less than 1.5% at 400 Hz, 90% modulation. **Hum & Noise:** 45 db. **Power Requirements:** 105-125 or 210-250 volt 50/60 Hz AC. **Dimensions:** Overall, 16⅛" wide x 4¾" high x 14½" deep.

*Rated IHF (Institute of High Fidelity) Standards.


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Describes these and over 250 kits for stereo/hi-fi, color TV, amateur radio, shortwave, test, CB, marine, educational, home and hobby. Save up to 50% by doing the easy assembly yourself. Mail coupon or write Heath Company, Benton Harbor, Michigan 49022

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# NEW PRODVCTS

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AMATEVR RADIO
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RECORDERS
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TOOLS
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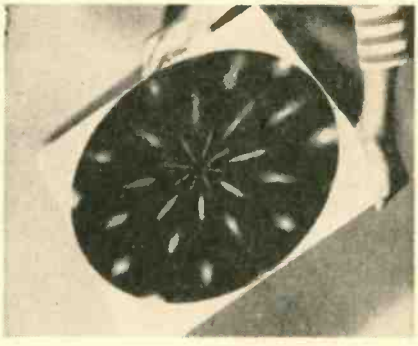
☆ ☆ ☆

## Plaques to Fool the Eye

You've seen pictures in store windows where the eyes seem to follow you, and sometimes wink at you? Well, Edmund Scientific has used this principle, called lenticular (or lenslike) to produce what they call Psychedelic Art Plaques, which you don't get much of a clue of from the accompanying photo that can't blink at all. There are 10 different plaques in sizes from 8 x 10 in. to 14 x 16 in., priced from $3.50 to



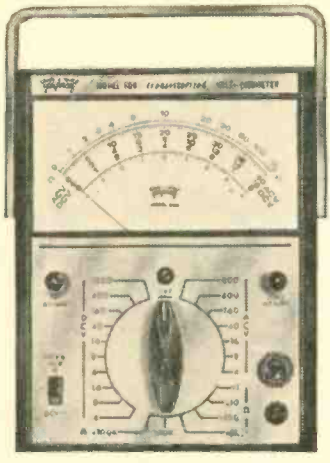
Edmund Scientific Psychedelic Art Plaque

$6.50, with titles like Kaleidoscope, Swirling Cycloids, Roaming Rectangles, and so on into other unearthly spheres. For $4.50 they'll send you a Psychedelic Sampler Kit, consisting of 10 discs 2½-in. in diameter. Then there is a set of 2 tie clasps, Stock No. 1871 with which you can dizzy-make your friends for only $2.00. For stock numbers and titles of the plaques,

write to Edmund Scientific Co., 107 E. Gloucester Pike, Barrington, N. J. 08007.

### In this Corner . . .

Weighing in at a mere 2½ lbs. is Triplett's Model 600, a transistorized volt-ohmmeter. It has the portability of a VOM with the high (11 megohm) input impedance of a VTVM, wide frequency ranges, accuracy of ±3% of full scale on both AC and DC at 77°F, and uses low-cost battery power (one 1½ V "D" cell, two 1½ V "AA" cells, one 9-volt transistor battery). The high input impedance is achieved with a special field effect transistor circuit. One small, compact probe can be used for all functions with built-in slide switch for placing a resistor in series with the instrument for DC voltage readings. The 600 is most attractively priced at $78. Write to Triplett Electrical Instrument Co., Bluffton, Ohio 45817 for their two-page bulletin on this item.



Triplett Model 600 Transistorized Volt-Ohmmeter

### Steady-State DC Supply

Here's a three-in-one supply, in kit form or assembled, that fills the need for multiple voltages, such as in radio-TV-audio work. Model KG-664 delivers 0-400 volts of regulated DC power at up to 200 ma continuously; 0-100 VDC at 1 ma regulated for line variation; plus 6.3 VAC at 6 A; and 12.6 VAC at 3 A for filament supply voltage. Two front panel meters continuously monitor voltage and current. Unit has less than 1V variation in output voltage from no load to full rated load. Input regulation allows less than 1V variation for ± 10 volts variation at 120 VAC input. Output ca-

## NEW PRODUCTS ☆☆☆☆☆☆☆☆☆☆☆☆☆☆☆☆☆☆☆☆

Knight-Kit KG-664 Regulated Power Supply

pacity is 80 watts. Its switchable voltmeter measures either high (B+) or bias voltage. There is a heavy-duty operate/standby switch for maximum safety; rear chassis binding post for fast, easy grounding; detachable AC line cord, well-ventilated metal case. Output impedance is less than 10 ohms. Size is 7¾ x 14¾ x 9¾-in. The Knight-Kit Power Supply Model KG-664 is priced at $94.50 in kit form, $140 fully assembled. Available from Allied Radio Corp., 100 N. Western Ave., Chicago, Ill. 60680.

### Grab Back That Power!

CBers can achieve a VSWR of 1.1:1 with the CB Matcher, an antenna matching network from Gold Line. A VSWR of 1.5:1 can mean a power loss of 20%, and a VSWR 2:1 can result in a loss of approximately 30% of power. The CB Matcher eliminates such power loss. You insert the CB Matcher between the transmitter and antenna. For calibration, a bridge


Gold Line CB Matcher

or meter can be placed between the transmitter and the Matcher, and left in the line if desired. In black and gold finish, the unit measures 1¾ x 2¼ x 3¾ in., and is available from distributors at $9.95. For further information write to Gold Line Connector, Inc., Muller Ave., Norwalk, Conn. 06852.

### Good Connections

Under the title of "Scotchlok" comes a new low-voltage electrical connector designed for use in control systems, sound installations and other electrical applications of 30 volts or less. A self-stripping "U-type" element, encased in


3M Company No. 560 Self-Stripping Connector

white polypropolyne, lets you make pre-insulated tap splices, inline splices and pigtail splices with one connector without stripping, twisting or soldering. Connections are made by driving the U-type element down over the conductors with pliers. The spring compression reserve in the U-type element supplies holding power and electrical contact with strong, permanent pressure. A hinged cover attached to the connector's case is then snapped into place. Designed for use on No. 14-18 gauge solid or stranded copper wire, the connector is available in 4-unit blister packs at 49¢ from hardware and electronic distributors throughout the country. Bulk packages of 100 or more are available. For additional information about Scotchlok self-stripping connector No. 560, write Dept. E17-19, 3M Co., 2501 Hudson Rd., St. Paul, Minn. 55101.

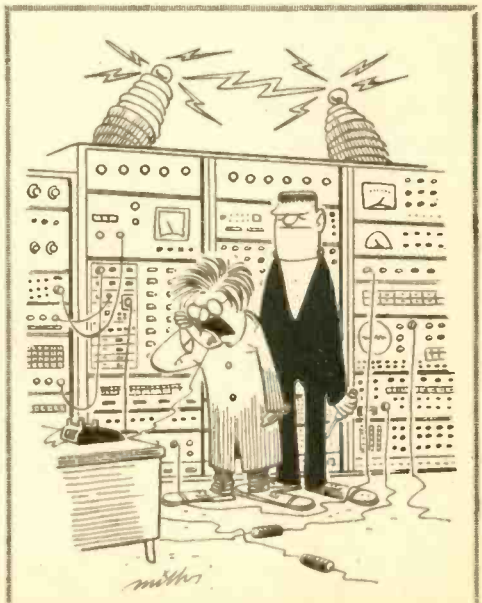
### Freq Kit

Here is a moderately-priced RF signal generator (Knight-Kit KG-686), using all-silicon transistors for temperature stability and long-lived operation. The KG-686 covers 100 kHz to 54 MHz (including all television IF frequencies). Accuracy is ± 1.5% on any of 5 bands, usable to ± 0.1% with built-in 100kHz/1MHz crystal calibrator. A switchable D'Arsonval meter shows RF carrier or modulation level. Other features: individually shielded 6-switch attenuator for 21 levels to −96 db; detector-amplifier-speaker giving "Zero" beats from crystal calibrator; floating-type chassis-isolated oscillator; tunable L and C on every band. Unit has a regulated power supply for output stability. For 110-130 V, 50-60 Hz AC, with BNC output jack, mated terminated cable, all parts, solder, detailed assembly and operator's manual, the kit price of the KG-686 is $95.00. Available from Allied Radio Corp., 100 N. Western Ave., Chicago, Ill. 60680.

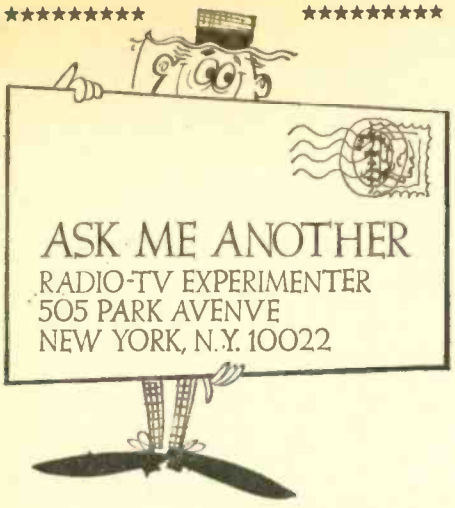
Knight-Kit KG-686 RF Signal Generator

### Helps Your Car Really Go-Go

A new capacitive discharge ignition system is on the market, called Mark Ten. The company claims up to 20% increase in gasoline mileage, 3 to 10 times more wear from your spark plugs, and it installs in minutes on all cars, boats, trucks by simply attaching to coil terminals without any change in wiring or components. In operation, voltage is stored in a storage capacitor until needed. Applied battery voltage converts from 12 V to 400 V by converter circuitry. This power supply delivers full energy to the capacitor at engine speeds over 8000 rpm. By using electronic switching and triggering, problems of "point bounce" and multiple firing are eliminated. The points, now used only as a reference, will last the life of the rubbing block. Assembled, the Mark Ten is $44.95 postpaid; in Deltakit form it's $29.95 from Delta Products, Inc., Box 1147, Dept. C482, Grand Junction, Colo. 81501. ■



"Well, if you send me a better technician, maybe you'd get better work!"

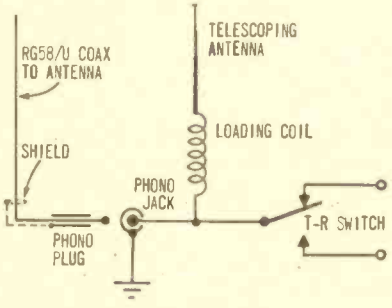



## Big 'Tenna For Small 'Talkie

*I've got a 1.2-watt walkie-talkie that's just big enough for a CB license. I'm 8 miles from a city of 30,000 happy, peaceful people—and 312 CBers. How in the name of Newton Minnow do I hook an aerial to a handheld with a little collapsible antenna; what kind of aerial should I use; and what kind of lead-in?*

*—D. H., St. Charles, Mo.*

Add a phono jack to the set as shown in the diagram. Use any CB base antenna fed through RG-58/U coaxial cable. Retract the telescoping antenna when using the external antenna.




## Gotta Start Somewhere

*I am a beginner in electronics. Could you suggest a good book for getting started in electronics? Would you also tell me where I can get a book describing some good beginner's electronic projects?*

*—J. D. L., Merriam, Kansas*

Get a copy of "Electronics 1-7," published by Hayden Book Company, and "Having Fun in Electronics," published by Howard W. Sams, at your local electronics parts store. If they don't have them in stock, they can order them for you.

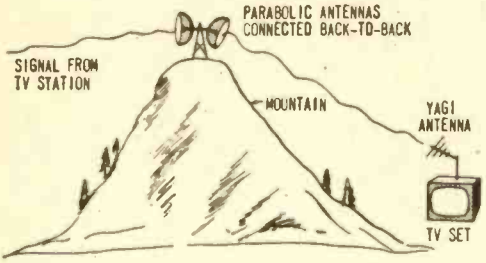
## Beam Bouncer

*I would like to know if there is any way to reflect a TV signal from one antenna to an-*

*other. I want to place one antenna on top of a mountain and another down at the house. The signal is pretty weak as the station is about 150 miles away. It would take about three miles of wire to run a line from the hilltop antenna down to the house so that's out. Please offer any other possible solutions to this problem.*

*S. S., Carmel, Calif.*

You could use back-to-back parabolic antennas, as shown in the diagram, provided the antenna on the mountain could "see" the TV station antenna. And, it would cost a few thousand dollars.

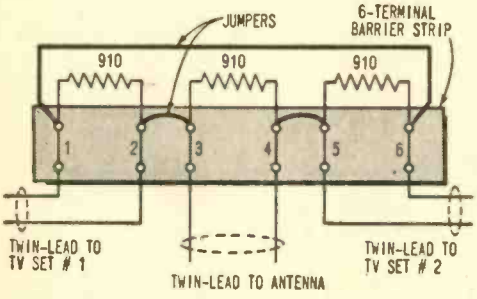



## Two To One

*Can I hook up two TV sets to the same antenna?*

*G. M., Philadelphia, Pa.*

Sure, see our diagram.




## High-Gain Crystal Set

*Do you have a good circuit of a super-sensitive, high-gain crystal set?*

*—T. G. D., Eau Gallia, Fla.*

You tell me and we'll both get rich quick. Crystals haven't yet been known to have much gain. You might try the voltage doubling circuit shown. Tune in stations with C1, tune out unwanted signals with C2 and C3. Okay?

## Transistors By The Bunch

*I have a bunch of transistors I salvaged from various radios. Where can I find out about their characteristics?*

*—E. M. L., Andalusia, Ala.*

Write to International Rectifier Corp., 401 No. Broad St., Philadelphia, Pa. 19108 and order a copy of their transistor data fact book. ($3.95)

## Yankee Doodle

*When our pocket transistor radio is turned on, we get a whistling sound across the broadcast band. Can you tell me why?*

*—W. S., Wayne, N. J.*

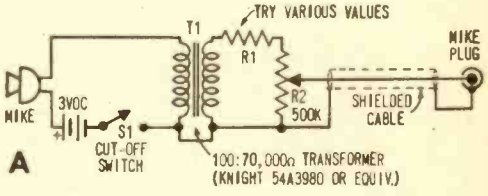
Why not? Actually it's probably caused by radiation from a TV set close by, but if it's not, maybe you can patent it. Try de-tuning the IF transformers just a smidge. The IFs may be oscillating.

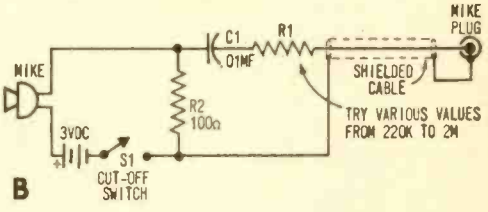
## Crystal To Carbon

*I have a carbon microphone. How can I use it on an amplifier with inputs for a crystal microphone without rewiring the amplifier? Might the following circuit work?*

*R. A. H., Bridgeport, Conn.*

Yes, you can use your circuit with a pot added to reduce output. Or you can use the second circuit.



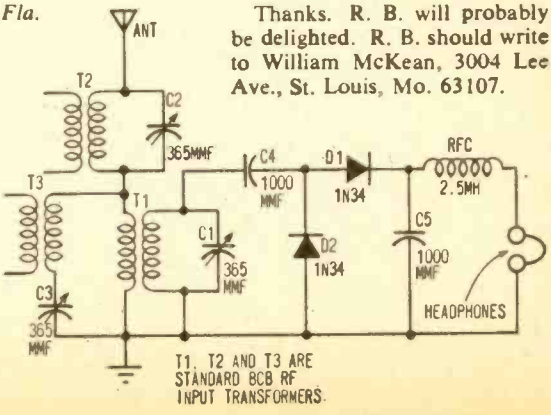




## Answer Looking For The Question

*In answer to the question sent in by R. B. of Swedesboro, N. J., in the March-April issue, I have the answer to his problem. I have a 115-volt, 400-Hz power supply with automatic or manual regulation from 0 to 130 volts. He can make me an offer.*

*—W. McK., St. Louis, Mo.*

Thanks. R. B. will probably be delighted. R. B. should write to William McKean, 3004 Lee Ave., St. Louis, Mo. 63107.

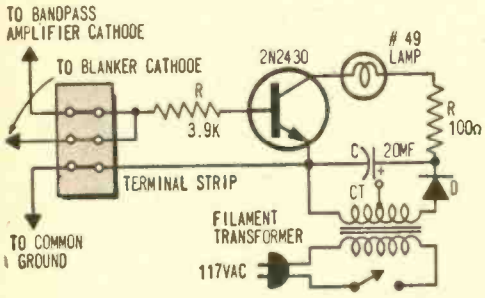


## Color Tattler

*How can I add a color TV tuning indicator to a color TV set?*

*D. R., Los Angeles, Calif.*

It depends greatly upon the circuitry of your set. The diagram shows a color indicator circuit based on the one used in some Olympic models. If you make one as an outboard device, install the barrier terminal strip on the back of




the TV receiver. The transistor is powered by a 6.3-volt filament transformer whose output is rectified by D and filtered by C. When the TV set is tuned to a color program, the bandpass amplifier and blanker cathode voltages rise because of the presence of the 3.58-MHz color burst. This provides forward bias on the transistor, causing the lamp to glow.

## No Go That Low

*I am a beginner in ham radio. I just built your long wave VLF receiver (April-May 1967 issue) and I am very pleased. I am wondering if I could obtain a license to operate a transmitter at these low frequencies.*

*—J. M., Dearborn Heights, Mich.*

No, you cannot get a license to operate a transmitter at a frequency lower than the 160-meter ham band. The low frequencies are used for commercial and government communications and navigational aids. ■

"Ask that girl in San Juan if it's two peppers and one tomato or . . ."

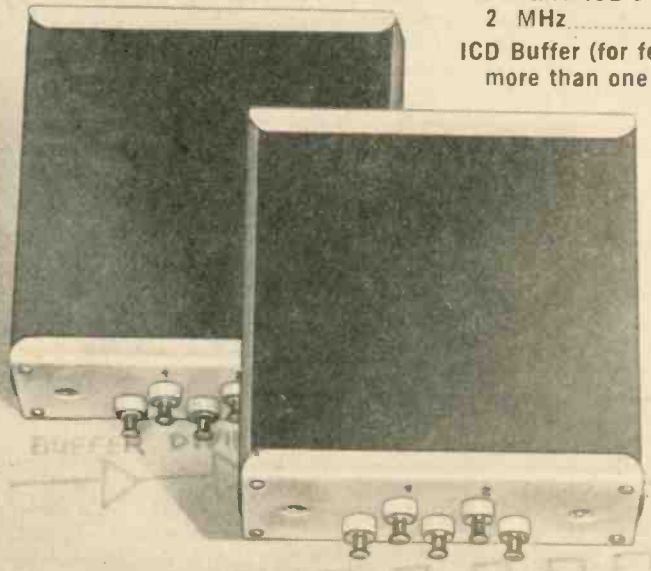
# Meet The Dividers!

## ICD SERIES INTEGRATED CIRCUIT DIVIDERS

They are new from International. Use them for crystal controlled time bases, scope calibrators, and clock sources.

International ICD units are totally integrated circuit frequency dividers. They are smaller than a pack of cigarettes (1" x 2¼" x 2⅜"). All have two separate outputs. They are packaged in nine types providing divide ratios 2 thru 10. No tuning or adjustment is required. The output pulse has the same stability as the driving pulse. Voltage required, 3.6 vdc ± 10%.

| FREQUENCY RANGE | |
|---|---|
| ICD-10 to 10 MHz | $19.95 ea. |
| ICD-2 thru ICD-9 to 2 MHz | $19.95 ea. |
| ICD Buffer (for feeding more than one circuit) | $ 9.95 ea. |

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Radio-TV EXPERIMENTER OCTOBER-NOVEMBER

# 100 YEARS OF RADIO


MAHLON LOOMIS

By C. Hansen

☐ "But," someone is saying, "radio 100 years old? It can't be. Why, even phonographs were unheard of in 1867, lights had yet to become electric, and Marconi was still to be born."

True. Yet inventions have the strange habit of appearing years ahead of their real selves, and radio was no exception. The first cars were made long before there were roads for so-called horseless carriages. The first modern symphonies were composed long before there were orchestras to play them. The first LPs were released long before there were instruments specifically designed to handle this johnny-come-lately of the record field. (A second attempt to unseat 78s, this one by Columbia, not Victor, proved successful largely because Columbia deliberately saw to it that appropriate, low-cost players were available for the microgroove disc.)

And so it was with radio. For radio was to be born long before there were receivers to tune in or audiences to hear what had been transmitted. Fact is, radio was born before science was even remotely capable of explaining what it was all about. (Heinrich Hertz, for example, would wait 11 years before he would conduct his studies and ultimately demonstrate the existence of an entity we now know as radio waves.)

**The Beginning.** The time was just after the U.S.'s savage Civil War; Abraham Lincoln was more than a year dead. Mahlon Loomis, a New Yorker who had since moved to Washington, D.C., where he practiced dentistry, entered the following in his notebook:

(Turn page)

# 100 YEARS OF RADIO

BARON HERMANN VON HELMHOLTZ

"From two mountain peaks of the Blue Ridge in Virginia which are only about two thousand feet above tide water two kites were let up, one from each summit, eighteen or twenty miles apart. These kites had each a small piece of fine copper wire gauze about fifteen inches square attached to their under side and connected also with the wire six hundred feet in length which held the kites when they were up. The day was clear and cool in the month of October with breeze enough to hold the kites firmly at anchor when they were flown. Good connection was made with the ground by laying in a wet place a coil of wire one end of which was secured to the binding post of a galvanometer.

"The equipments and apparatus at both stations were exactly alike. The time pieces of both parties having been set exactly alike, it was arranged that at precisely such an hour and minute the galvanometer at one station should be attached, or be in circuit with the ground and kite wires. At the opposite station the ground wire already being fast to the galvanometer, three separate and deliberate half-minute connections were made with the kite wire and instruments. This deflected, or moved, the needle at the other station with the same vigor and precision as if it had been attached to an ordinary battery.

"After a lapse of five minutes, as previously arranged, the same performance was repeated with the same result until the third time. Then fifteen minutes precisely were allowed to elapse, during which time the instrument at the first station was put in circuit with both wires until the opposite one was detached from its upper wire, thus reversing the arrangements at each station. At the expiration of the fifteen minutes the message or signals came in to the initial station, a perfect duplicate of those sent from it, as by previous arrangement. And although no 'transmitting key' was made use of nor any 'sounder' key to voice the messages, yet they were just as precise and distinct as any that ever sped over a wire."

**Tubeless Wireless.** What had Loomis really done? Little, it seems, that would be well remembered or adequately acknowledged, and next to nothing that would have discernible effect on the development of radio that was to come. Yet judged on their own terms, Loomis' experiments must be held as the very first in the realm of radio.

For it must be remembered that wires, not ether, were the accepted media of the time. Few this side of the nuthouse would have dreamed of communicating through the air. Wires, anyone in his right mind would have informed you, were the only way of pumping this mysterious juice called electricity from one point to another, and anyone who argued they had done same without benefit of iron conductors (copper was introduced along about 1877) was properly viewed only an imbecile or a fool.

Loomis, it seems reasonable to assume, was neither. And to him must go credit for conceiving of a means of wireless communications—i.e., radio.

For Loomis had launched radio. Shortly thereafter, Ludwig V. Lorenz was to write a mathematical paper suggesting that light vibrations are, in effect, electrical currents. And in 1872, Loomis was to receive Patent

THOMAS ALVA EDISON

PROFESSOR HEINRICH HERTZ

GUGLIELMO MARCONI

No. 129,971 for his "Improvement in Telegraphing," in which he used an 'aerial' "to radiate or receive pulsations caused by producing a disturbance in the electrical equilibrium of the atmosphere."

In that same year, Baron Hermann Von Helmholtz was to demonstrate how electrical impulses having a constant time interval between them can be fed into a circuit have a contact maker attached to one of the arms of the tuning fork so that contact is made through a battery with each of the fork's vibrations. Later (1873), Sir James Maxwell was to publish his "Treatise on Electricity and Magnetism," in which he advanced the theory of electromagnetic waves and thus helped further explain the nature of this thing called wireless.

**The Developing Storm.** Other "firsts" followed with whirlwind vigor. In 1883, Thomas Edison was to discover that electric current can flow through space (from filament to plate in an incandescent light bulb), and thereby coin what is called the Edison Effect. In 1889, Sir John Fleming was to conclude that "negative electricity can pass along the flame-like projection of the arc from the hot negative carbon to the cooler third carbon *but not in the opposite direction.*" (Italics are ours.) And in 1885, Edward Branly was to invent the "coherer," first detector of radio waves and an invaluable instrument to Marconi and others to follow.

In 1888, Prof. Heinrich Hertz was to design an oscillator for producing electrical waves and develop a means for measuring and varying wavelengths. And in 1891, Edison was to be granted Patent No. 465,971 for "Signalling between distant points . . . without the use of wires connecting such distant points" (though it should be noted that the patent refers to the process as one of "induction," not radiation.)

Came 1892, and another now all but unknown inventor, Nathan Stubblefield of Kentucky, was to demonstrate a radio broadcast. Repeated in 1902 in Philadelphia's Fairmont Park, the first-time-ever display was described by its inventor (in an interview with the Washington *Post*) as follows:

"My invention . . . is capable of sending simultaneous messages from a central distribution station over a very wide territory. For instance, anyone having a receiving instrument, which would consist merely of a telephone receiver and a few feet of wire, and a signaling gong could, upon being signaled by a transmitting station . . . be informed of weather news. My apparatus is capable of sending out a gong signal as well as voice messages. Eventually, it will be used for the general transmission of news of every description.

"I have as yet devised no method whereby it can be used with privacy (scramblers were to await another year). Wherever there is a receiving station the signal and the message may be heard simultaneously. Eventually, I, or someone will discover a method of tuning the transmitting and receiving instruments so that each will answer only its mate. The system can be developed until messages by voice can be sent and heard all over the country, to Europe, all over the world."

**Signals Across The Sea.** Daring though Stubblefield's forecasts were, less than 10 years would pass before their fruition. For


in 1895, Guglielmo Marconi began his experiments from his home in Bologna and succeeded in transmitting signals roughly a mile without wires. In 1897, Marconi was to transmit Morse the nine miles across the Bristol Channel.

In 1898 (this time using an aerial), Marconi was to send signals between Bournemouth and the Isle of Wight, a distance of some 14 miles. And in that same year, Sir Oliver Lodge was to patent his system for "tuning," thus making it possible for the first time to put a transmitter and receiver in tune with one another.

One year later—in 1899—Marconi was to transmit a message over some 32 miles (between Folkestone and Boulogne) and thus lay claim to the world's first international wireless transmission. And in 1901, Marconi was to bring off the feat that was to win him universal fame and cause many (including the *Encyclopedia Britannica*) to credit him with the discovery of radio.

His accomplishment: to transmit a radio signal—the letter S in Morse—across the Atlantic Ocean. In doing so, he established radio as a communications medium the world would soon invite into a million living rooms as the "Music Box" another of radio's great pioneers (RCA's David Sarnoff) was to envision.

**The Box At Last.** That "Music Box" was a long way off, of course. Coming to pave its way were, among other developments, to be Sir John Fleming's valve detector (1904), Dr. Lee De Forest's triode (1906), Edwin Armstrong's regenerative circuit (1913) and his superheterodyne (1916).

Came 1920, and the world's first station to broadcast regularly scheduled programs, Pittsburgh's KDKA, made history by airing the November 2 Harding-Cox election returns. Came 1921, and the White-Sarnoff team aired radio's first championship fight (the July 2 Dempsey-Carpentier bout). Came 1922, and the Queensboro Realty Company broadcast the first commercial program over New York's WEAF. Came 1923, and the first network broadcast was transmitted (on January 4) by WEAF, New York, and WNAC, Boston.

Three decades and a fraction later, radio and its stepchild, television, are far more ubiquitous with humans than fleas with canines and even more universal with housewives than the kitchen sink (007 and his crew have no doubt uncovered a spy set or three even in that unlikely locale). And to Loomis, Stubblefield, Marconi & Co. go credit for conceiving, developing, and pioneering this most valuable means of communication.

Imagine, if you can, a world *without* radio! ■

DR. LEE DE FOREST

EDWIN ARMSTRONG

DAVID SARNOFF

# Chronoscopic Drunkometer

## Sneaky widget tell-tales when you're snockered

■ So you're having a little get-together at your house and everybody's pretty well looped. About this time one of your buddies decides he's ready to pack up and head for the old homestead. Seeing as how buddy boy is really pretty smashed, you whip out your Chronoscopic Drunkometer and say "Place your mitts next to this here box and when this light flashes, you grab that switch and flick it to *off*, okay?"

"Sokay" he mumbles. You turn the gadget *on* with a remote switch concealed in your hand. The light starts flashing and the little dial starts clicking. But your buddy's sluggish reaction to this little chore is proof positive that he'd have missed the end of his garage by a hundred yards—if he'd been driving.

The moral of this story isn't the old bit about drinking and driving, since this we know you already know. Instead, it's that you should get on the stick and build our Chronoscopic Drunkometer—for accurately gauging reaction times and performing a host of other functions.

**What It Does.** This great little timer will do more than tell you how plastered you are. In fact, it can be used anywhere split-second timing is needed. You'll find it the cat's meow for clocking a race, for example, and equally great for accurate exposure timing if photography is your poison. Applied to egg cookery, it delivers the ultimate. (*Turn page*)

By Ken Greenberg

## DRUNKOMETER

A highly useful feature of this little unit is the fact that the numerical readout shows total elapsed time up to 2½ hours in tenths of a second! Heart of the timer is a 600-rpm timing motor that opens and closes a leaf-type micro-switch 10 times each second. The switch in turn sends 10 pulses per second to a resettable 120 VAC electric counter which clicks off ten digits each second. The circuit is shown in the schematic.

**Building The Timer.** All the parts are easily mounted in a 4x6x3-in. aluminum chassis and there is no critical wiring. Before mounting the timing motor, install a round ¾-in. plastic knob (for a ¼-in. shaft) on the ⅛-in. motor shaft. You may need a longer set screw than is provided.

Tightening the set screw firmly will cause the knob to be mounted off-center on the motor shaft, and this is exactly what you want. This provides the off-center cam action that trips the micro-switch. Incidentally, a ¾-in. coat button force fitted or glued on the shaft will do just as well.

Using a 4-40 x ¾-in. screw, mount the micro-switch through one of the four extended mounting holes on the motor case. Depending on the switch used, it may be necessary to install a 3/16-in. spacer between the switch and the motor case to raise the switch so that the arm will contact the knob in the center.

In any case, use lockwashers between the switch and spacer, the spacer and motor case, and the nut and motor case. Rotate the motor (knob) shaft by hand, and position the switch so the cam action trips it on the high spot and releases it as it goes off the high spot. You will be able to hear the on/off clicks if the switch is positioned right. When you can, tighten the 4-40 screw firmly.

**Motor Mount.** The motor is mounted with its backside flat against the inside of the case, using two 1¼-in. 6-32 machine screws. Make a template so the holes in the chassis will line up with the extended mounting holes on the motor. Use lockwashers, but don't tighten the screws excessively since this could prevent the motor from running. Be sure to position the motor so that the switch contacts and mounting screw are accessible for connections and tightening after the motor is mounted.

The large rectangular hole for the counter may be cut with a coping saw fitted with a hacksaw blade, after a hole has been drilled at each corner of the rectangle. Or, a chassis nibbling tool can be used. Motor switch *S3* and the neon light assembly are mounted in regular fashion. However, the two stop switches (*S4* and *S5*) should be installed so that both will be in the *on* position when their handles are pointing in toward each other.

Remote start/stop switch *S2* can be

### PARTS LIST

B1—120-VAC 600-rpm timing motor (Herbach & Rademan HI-26, 1204 Arch St., Philadelphia, Pa. 19107)

I1—NE51H high-brightness neon lamp (Radio Shack 77-3427 or equiv.)

I2—120-VAC resettable counter (Lafayette 99R9011 or equiv.)

R1—18,000-ohm, ½-watt resistor

S1—Light-pressure, lever-action micro-switch (Olson SW-338, Allied 56A5030 or equiv.)

S2—S.p.d.t., locking-type lever switch (Switchcraft Lev-R 28203-Lock, Allied 56A4471 or equiv.)

S3, S4, S5—S.p.s.t. toggle switch with bat handles (Radio Shack 275-602 or equiv.)

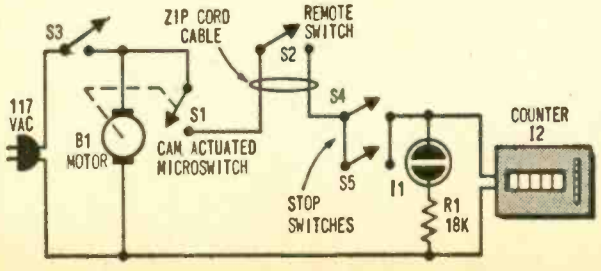
1—4x6x3-in. aluminum chassis (Bud AC-431, Radio Shack 77-0342 or equiv.)

1—Neon lamp socket with clear jewel assembly for NE51H bulb (E. F. Johnson 77M 133/138 or equiv.)

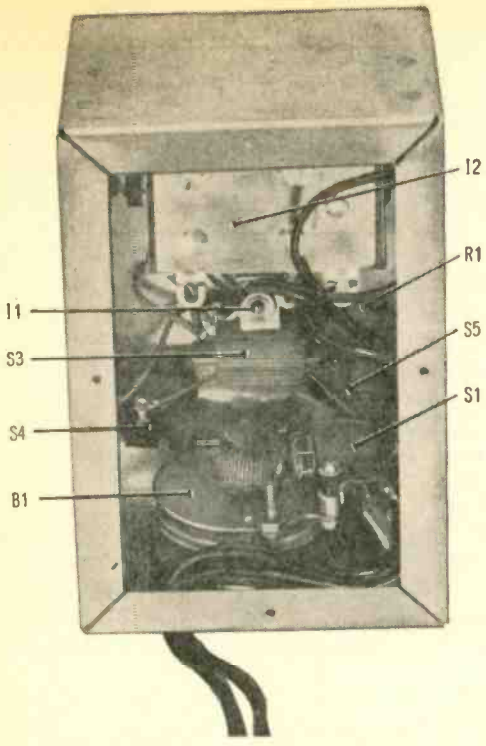
Misc.—¾-in. diameter plastic knob, line cord, wire, solder, zip cord, etc.

Estimated cost: $20.00

Construction time: 6 hours




**Drunkometer circuit is simple and straightforward and part location isn't critical. Timer can be used in variety of ways by substituting different control switches.**




**Internal layout and construction of cam-actuated microswitch can be seen above. Cam consists of small off-center knob.**

mounted in a plastic pill bottle or it will fit perfectly in a Polaroid print coater container. The Switchcraft lever-type switch was chosen here because it will fit in a small round container and because it doesn't make an audible click when switched on. Use 6 feet of lamp cord between the remote switch and the chassis; run the wire through the same rubber grommet as the AC line cord.

**Timer Hookup.** Wire the circuit from the schematic diagram. When wiring is completed, turn on motor switch *S3*. As the motor runs, you should hear microswitch *S1* clicking on and off; if you don't, the switch will have to be repositioned slightly until you do. Now, when *S2*, *S4*, and *S5* are switched on, the counter should begin clicking off 1/10 seconds.

If the counter fails to operate, the trip switch probably isn't positioned right. This is somewhat critical and may require a little patient experimentation. Once set properly, be sure the switch mounting screw is tight. Put a drop of Lubriplate on the knob to reduce friction between it and the switch arm.

**Using The Drunkometer.** To test a person's reaction time to a visual stimulus, have the subject seated with his hands flat on the table on each side of the timer. The remote switch should be *off* and the counter set to zero. Also the stop switches (*S4* and *S5*) must be in the reset (*on*) positions with the handles facing in.

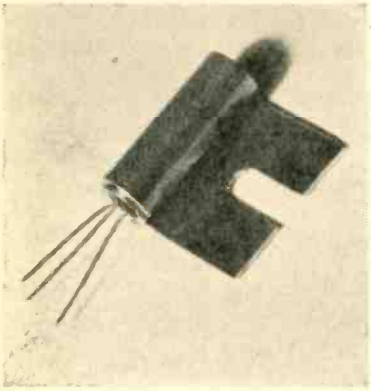
Instruct the subject to flip both stop switches apart (*off*) as soon as he sees the neon light come on. Both switches are wired in parallel and if only one is flipped, the counter won't stop. For the record, the average reflex time is 3/10 second, though superfast guys clock in at 2/10 second.

Standing behind the subject, you switch on the counter and neon light simultaneously with remote switch *S2*. To test a person's response time to an audio stimulus, have him place his hands on the switches and close his eyes. This time, the switches must be flipped as soon as he hears the counter start clicking —audio reflex time is usually 1/10 second longer than visual. Don't forget to reset the counter to zero for each new timing.

Other timing applications may require different switching arrangements, but this should offer no problem. Installing the remote switch with a phone jack is one possibility to allow rapid exchange of control switches for different uses. But any way you use it, you'll have a jim-dandy little split-second timer in the Chronoscopic Drunkometer. ■

**Layout isn't critical and can be arranged to suit individual preference. Completed Chronoscopic Drunkometer above is ready to split-second time just about anything.**

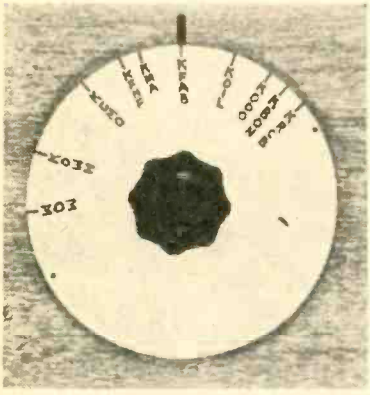
# IMAGINEERING DESIGN TIPS



## ROLL-YOUR-OWN HEAT-SINK

There comes a time in every transistor-experimenter's life when a heat-sink becomes a necessity. When that time of life hits you unexpectedly, here's one way to make-do.

Grab hold of a piece of sheet aluminum, copper, or tin and cut it about 1 3/8-in. long by 3/4-in. wide. Then find a metal rod, wood dowel, or drill bit slightly smaller in diameter than the transistor casing. Roll the metal strip around the rod and cut a notch as shown in photo (for attaching the heat-sink to the chassis). Apply some silicon grease to the transistor casing, slide your heat-sink on, and you're ready to go.



## WHY DIAL BY TRIAL?

Homebrew receiver dials are always a problem, but here's a nifty way to get a decent-looking dial that'll fill the bill.

Simply cement a disc of white cardboard onto a knob that'll fit the tuning capacitor shaft. Mount the knob (with cardboard attached) to the tuning shaft. Now tune in your favorite stations one by one and mark the spot on the dial where each comes in lightly in pencil.

Remove the dial assembly and letter in the call-signs, using ink or ballpoint pen. A line or pointer marked on the panel above the dial as shown in photo completes the job.


## GET A GRIP ON DC

An easy way to get a quick connection to most types of batteries is to invest two bits in a couple of TV-antenna clip-on connectors as shown in photo. Hook a red lead on one side of the clip and a black on the other for identification of polarity. These neat connectors will work with the lantern battery shown, as well as 9-volt transistor batteries and No. 6 dry cells.

**Ten bucks says you don't have an idea as good** as the ones above! If you do, ten bucks can be yours by just sending full details (with photo or drawing) to Imagineering Design Tips, Radio-TV Experimenter, 505 Park Ave., New York, N. Y. 10022. Sorry—all entries become the property of Radio-TV Experimenter and none can be returned.

# MIGHTY MICKEY-MIKE

*Nifty junk-box capacitor checker makes a handy addition to any experimenter bench.*

By Jerry Emanuelson

■ Just about every experimenter worth his salt finds himself in the position now and again where he'd willingly give his Aunt Matilda's right arm for a simple way to check capacitance.

Well here's the dope on a simple little unit that'll do just that and it'll only cost you a couple of bucks to build.

Have a look at the schematic and you've got the essentials. The circuit is set up so that an AC meter simply measures the AC resistance, or reactance, of the unknown capacitor. A simple calculation turns the reading into capacitance value. The completed Mickey Mike will measure capacitance from 500 μμF to 1 μF with an accuracy of between 10 to 20 percent.

**Construction.** The unit can be breadboarded and used with a multimeter as shown, or it can be built into a meter case with its own meter for a more sophisticated job. If you use a separate meter, either use an AC meter or a DC meter with a rectifier. Also get a meter with a sensitive movement or you won't have much luck measuring low capacitance values. Using a separate meter will allow you to calibrate the unit's dial directly, using capacitors of known value.

If you want to use the Mickey-Mike with your VTVM or VOM, the meter should have an AC input resistance of at least 10,000 ohms per volt.

Pushbutton switch S1 is used to protect the meter in case the capacitor shorts and also to reduce shock hazard caused by the more than 100 volts across the capacitor.

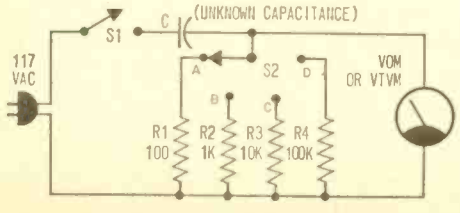
**Using Mickey Mike.** When the unit is finished, hook up a capacitor—but be sure any capacitor you want to check is rated at more than 100 volts, and don't try to measure capacitors in excess of 1 μF. Also, don't attempt to measure electrolytics.

Now set switch S2 so that a reading of less than 12 volts is seen on the multimeter. Then calculate capacitance as follows:

*Capacitance (μF)*

*= 2.3 x Volts x .1 (Range A)*
*= 2.3 x Volts x .01 (Range B)*
*= 2.3 x Volts x .001 (Range C)*
*= 2.3 x Volts x .0001 (Range D)*

For example, on range B, and the multimeter reads 4.4 volts: C = 2.3 x 4.4 Volts x .01 = 10.12 x .01 = approximately .1 μF. ■




Simple circuit of Mickey Mike does bang-up job of measuring value of most capacitors.

**PARTS LIST**

R1—100-ohms, ½-watt resistor
R2—1000-ohms, ½-watt resistor
R3—10K, ½-watt resistor
R4—100K, ½-watt resistor
S1—S.p.s.t., normally-open pushbutton switch
S2—Single-pole, 4-position rotary switch
Misc.—Wire, solder, line cord, etc.

Estimated cost: $2.00
Construction time: 1 hour

# FOREIGN TUBE REPLACEMENT GUIDE

Anyone who's gone past the tuning knob of a foreign-built shortwave receiver has discovered an unexpected twist or three—unorthodox-looking capacitors, metal-film resistors, possibly some outstanding point-to-point wiring. Another distinguishing feature of foreign electronic gear is tube designations, which often bear no resemblance whatever to those current in American circles. The following listing equates foreign tube types with their closest American equivalent. Though slight differences exist in some cases, in general any tube of a pair is directly interchangeable with its mate.

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1C1 | 1R5 | CV578 | 6A8 | CV1938 | 6K6GT | DL91 | 1S4 | KT32 | 25L6GT |
| 1F3 | 1T4 | CV580 | 6A8 | CV1941 | 6K7 | DL92 | 3S4 | KT63 | 6F6G |
| 1FD9 | 1S5 | CV581 | 6C5 | CV1943 | 6K7 | DL94 | 3V4 | KT66 | 6L6GC |
| 1P10 | 3S4 | CV585 | 6C6 | CV1944 | 6K8 | DL95 | 3Q4 | KT71 | 50L6GT |
| 1P11 | 3V4 | CV587 | 6Q7G | CV1946 | 6K8 | DM70 | 1M3 | KTW63 | 6K7 |
| 5B250A | 807 | CV589 | 6Q7 | CV1947 | 6L6GC | DP61 | 6AK5 | KTW74M | 12K7GT |
| 6BK3 | 6267 | CV591 | 6SJ7 | CV1950 | 6L7 | DY86 | 1S2 | KTZ63 | 6K7 |
| 6C16 | 6BL8 | CV614 | 75 | CV1956 | 6N7GT | DY87 | 1S2A | L63 | 6J5GT |
| 6D2 | 6AL5 | CV617 | 80 | CV1958 | 6N7GT | E2157 | 12AT7 | L77 | 6C4 |
| 6F22 | C[illegible]7 | CV686 | 0C3 | CV1959 | 50C5 | E2163 | 12AU7A | LZ319 | 9A8 |
| 6F29 | 6EH7 | CV692 | 0Z4 | CV1961 | 12AU6 | E2164 | 12AX7A | LZ329 | 9A8 |
| 6F30 | 6EJ7 | CV697 | 12SJ7 | CV1969 | 6SC7 | EB34 | 6H6 | M8212 | 5726 |
| 6FD12 | 6DC8 | CV717 | 5R4GYB | CV1970 | 6SC7 | EB91 | 6AL5 | N16 | 3Q5GT |
| 6G5G | 6U5G | CV728 | 5V4GA | CV1978 | 6SG7 | EBC90 | 6AT6 | N17 | 3S4 |
| 6H5 | 6U5G | CV753 | 1A3 | CV1981 | 6SK7 | EBC91 | 6AV6 | N18 | 3Q4 |
| 6L12 | 6AQ8 | CV755 | 1A5GT | CV1985 | 6SL7GT | EBF89 | 6DC8 | N19 | 3V4 |
| 6L13 | 12AX7 | CV756 | 1A5GT | CV1988 | 6SN7GTB | EC90 | 6C4 | N148 | 7C5 |
| 6M1 | 6U5G | CV782 | 1R5 | CV1990 | 6SQ7 | EC97 | 6FY5 | N379 | 15CW5 |
| 6P15 | 6BQ5 | CV783 | 1S4 | CV2129 | 5763 | ECC32 | 6SN7GTB | N709 | 6BQ5 |
| 6PL12 | 6BM8 | CV784 | 1S5 | CV2500 | 35Z4GT | ECC81 | 12AT7 | N727 | 6AQ5A |
| 12DT7 | 12AX7 | CV785 | 1T4 | CV2514 | 43 | ECC82 | 12AU7A | OM10 | 6K8 |
| 13D2 | 6SN7GT | CV797 | 2D21 | CV2524 | 6AU6A | ECC83 | 12AX7A | PCF80 | 9A8 |
| 30C1 | 9A8 | CV818 | 3Q4 | CV2526 | 6AV6 | ECC85 | 6AQ8 | PCF82 | 9U8A |
| 30P18 | 15CW5 | CV819 | 3Q5GT | CV2747 | 6U5 | ECC88 | 6DJ8 | PCF801 | 8GJ7 |
| 30PL12 | 16A8 | CV820 | 3S4 | CV2901 | 6267 | ECC91 | 6J6A | PCL82 | 16A8 |
| 63ME | 6U5G | CV850 | 6AK5 | CV2975 | 6BQ5 | ECC189 | 6ES8 | PCL84 | 15DQ8 |
| 150C2 | 0A2 | CV858 | 6J6A | CV2984 | 6080 | ECC230 | 6080 | PL84 | 15CW5 |
| 150C3 | 0D3 | CV877 | 7A7 | CV3523 | 6146A | ECF80 | 6BL8 | PL500 | 27GB5 |
| B36 | 12SN7GTA | CV885 | 7C5 | CV3908 | 6BH6 | ECF82 | 6U8A | PM04 | 6BA6 |
| B65 | 6SN7GTB | CV887 | 7C6 | CV3909 | 6BJ6 | ECF86 | 6HG8 | PM05 | 6AK5 |
| B152 | 12AT7 | CV901 | 7Y4 | CV3912 | 1U5 | ECH35 | 6K8 | QV03-12 | 5763 |
| B309 | 12AT7 | CV918 | 12K7GT | CV3998 | 6688 | ECL82 | 6BM8 | QV05-25 | 807 |
| B329 | 12AU7A | CV924 | 12SL7GT | CV4007 | 5726 | ECL85 | 6GV8 | QV06-20 | 6146 |
| B339 | 12AX7A | CV925 | 12SN7GTA | CV4009 | 5749 | ECL86 | 6GW8 | R52 | 5Z4 |
| B719 | 6AQ8 | CV1186 | 6F6G | CV4012 | 5750 | EF86 | 6267 | STV150/30 | 0A2 |
| BPM04 | 6AQ5A | CV1287 | 25L6GT | CV5041 | 6CL6 | EF93 | 6BA6 | U50 | 5Y3GT |
| CV124 | 807 | CV1347 | 6K8 | CV5042 | 12BH7A | EF94 | 6AU6A | U52 | 5U4G |
| CV133 | 6C4 | CV1377 | 5AR4 | CV5072 | 6CA4 | EF95 | 6AK5 | U70 | 6X5GT |
| CV140 | 6AL5 | CV1633 | 3V4 | CV5073 | 6AM4 | EF183 | 6EH7 | U74 | 35Z4GT |
| CV283 | 6AL5 | CV1741 | 6CA7 | CV5074 | 6AF4A | EF184 | 6EJ7 | U76 | 35Z4GT |
| CV452 | 6AT6 | CV1800 | 1A7GT | CV5215 | 6BL8 | EH90 | 6CS6 | U78 | 6X4 |
| CV453 | 6BE6 | CV1802 | 1A7GT | CV5307 | 807 | EK90 | 6BE6 | U147 | 6X5GT |
| CV454 | 6BA6 | CV1818 | 1H5GT | CV5331 | 6ES8 | EL34 | 6CA7 | U709 | 6CA4 |
| CV455 | 12AT7 | CV1820 | 1H5GT | CV5358 | 6DJ8 | EL84 | 6BQ5 | UU12 | 6CA4 |
| CV491 | 12AU7A | CV1823 | 1N5GT | CV5365 | 6BQ7A | EL90 | 6AQ5A | VFT6 | 6U5 |
| CV492 | 12AX7A | CV1831 | 2A3 | CV5434 | 6FG6 | EM84 | 6FG6 | W17 | 1T4 |
| CV493 | 6X4 | CV1832 | 0A2 | CV5810 | 6EJ7 | EN91 | 2D21 | W63 | 6K7 |
| CV504 | 6U5 | CV1833 | 0B2 | CV5831 | 6EH7 | EZ35 | 6X5GT | W76 | 12K7GT |
| CV509 | 6V6GTA | CV1856 | 5Y3GT | D63 | 6H6 | EZ80 | 6V4 | W727 | 6BA6 |
| CV511 | 6V6GTA | CV1862 | 6AQ5A | D77 | 6AL5 | EZ81 | 6CA4 | X14 | 1A7GT |
| CV522 | 7B7 | CV1863 | 5Z4 | D152 | 6AL5 | EZ90 | 6X4 | X17 | 1R5 |
| CV525 | 12A6 | CV1870 | 6A7 | DAC32 | 1H5GT | GZ30 | 5Z4 | X61M | 6K8 |
| CV543 | 12SK7 | CV1893 | 6B8 | DAF91 | 1S5 | GZ31 | 5U4G | X63 | 6A8 |
| CV544 | 12SK7GT | CV1900 | 6D6 | DD6 | 6AL5 | GZ34 | 5AR4 | X65 | 6K8 |
| CV546 | 12SQ7 | CV1906 | 6E5 | DF33 | 1N5GT | HBC90 | 12AT6 | X77 | 6BE6 |
| CV547 | 12SQ7GT | CV1911 | 6F6G | DF91 | 1T4 | HBC91 | 12AV6 | X147 | 6K8 |
| CV553 | 25L6GT | CV1928 | 12BA6 | DH63 | 6Q7 | HD14 | 1H5GT | X727 | 6BE6 |
| CV562 | 35L6GT | CV1929 | 6H6 | DH77 | 6AT6 | HF93 | 12BA6 | Y61 | 6U5 |
| CV564 | 35Z3 | CV1931 | 6H6 | DH118 | 14L7 | HF94 | 12AU6 | Y63 | 6U5 |
| CV571 | 50L6GT | CV1932 | 6J5GT | DH149 | 7C6 | HK90 | 12BE6 | Z14 | 1N5GT |
| CV572 | 6X5GT | CV1934 | 6J5GT | DK32 | 1A7GT | HL92 | 50C5 | Z63 | 6J7 |
| CV574 | 6X5GT | CV1935 | 6J7 | DK91 | 1R5 | HM04 | 6BE6 | Z729 | 6267 |
| CV575 | 5U4G | CV1937 | 6J7 | DL33 | 3Q5GT | HY90 | 35W4 | ZD17 | 1S5 |

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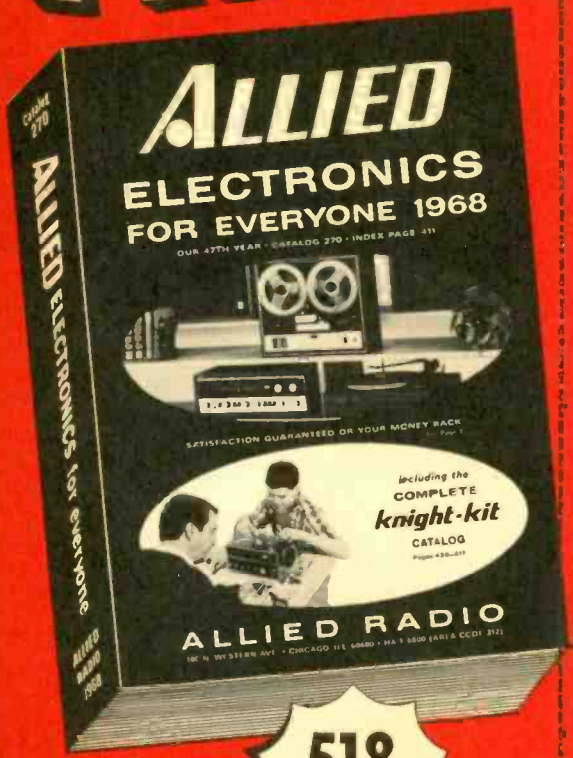


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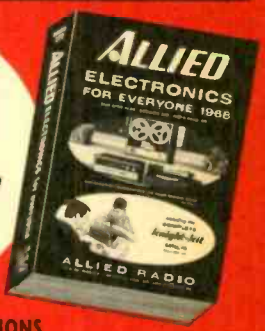


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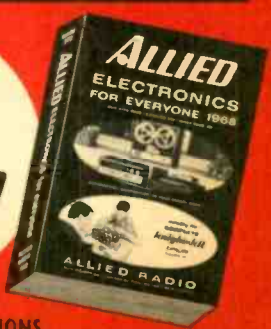


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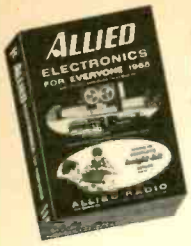


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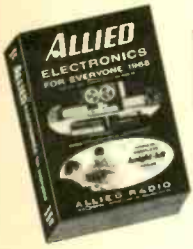


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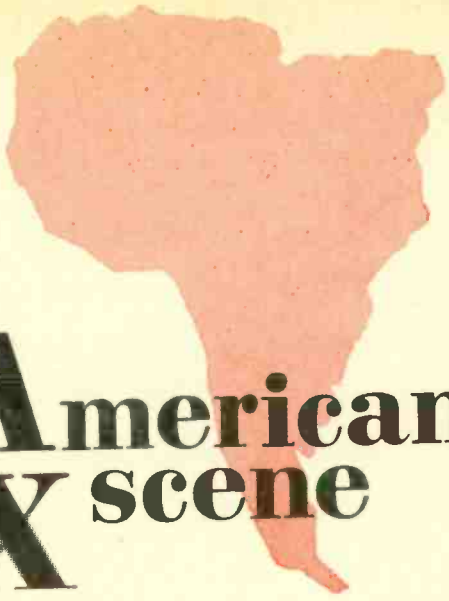


By C. M. Stanbury, II

# the South American DX scene

■ Stretching from Colombia and Venezuela on the north, down to the southern tips of Argentina, Chile, and the Falkland Islands, South America's 15 countries (16 if you count Ascension Island) represent a varied and ever-changing DX challenge. They're varied, because SA countries range from cinch loggings to the almost impossible. Ever changing, because throughout this continent there is tremendous pressure for change. Major political explosions can occur at any time in many of these countries. Thus, not only are many SA QSLs of top DX value, but many may turn out to be historic, too!

**Abbreviations**

BBC—British Broadcasting Corporation
BCB—broadcast band
DX—long distance, distant (contact or country)
EST—Eastern Standard Time
kHz—kilohertz (kilocycles)
kW—kilowatt
NA—North America(n)
QRM—noise and signals interfering with desired signal
QSL—decorated postal card or letter from station acknowledging reception report
R.—Radio (as in R. Netherland)
RAE—Radio Argentine to the Exterior
ORTF—Office of Radio-Television System of France
S/Off—sign off
SWBC—shortwave broadcasting
TWR—Trans World Radio
SA—South America(n)
Sat—Saturday
VOA—Voice of America

**Start Off Easy.** By far the easiest countries to log and verify are the Netherland Antilles and Ecuador. Both countries are represented on the international bands by high-powered missionary stations. In the Netherland Antilles, a small group of Dutch-owned islands off the Venezuela coast, it's Trans-World Radio that booms out a powerful signal heard throughout the NA continent. Situated on the appropriately named island of Bonaire, TWR broadcasts its own programs on a variety of frequencies which, unfortunately, seem to change every month. The last reported English language broadcast to NA was scheduled at 2130 EST on 9695 kHz with a relay on R. Netherland to NA every evening except Sunday on 9590 kHz starting at 2015 EST.

Also operating on a number of channels is world-famed HCJB at Quito, Ecuador with English language to NA on 9745, 11915, and 15115 kHz at 2100 EST. Both stations (HCJB and R. Netherland) QSL all *correct* reports. There are no other SWBC stations operating from Neth. Antilles, but for more of a challenge you might chase R. Kelkboom, 1435 kHz (on the BCB) at Oranjestad, Aruba. Many local Ecuadorian stations also operate on SWBC, so after knocking off HCJB try for HCRQ1, R. Quito (4923 kHz), often heard in the evening.

**The Big Ones.** The two largest SA na-

tions, Argentina and Brazil, are both under control of right-of-center, military-oriented regimes. The Argentine government operates a full-fledged overseas service under the name of RAE (and dating back to dictator Juan Peron). It transmits programs for all the Americas on weekdays in English, Spanish, and Portuguese on 9690 kHz during the evenings. RAE also has a service for Europe with England at 1830 EST on 11712 kHz.

No international services operate from Brazil (RAE, in fact, is the only international service operated by a SA government), but many Brazilian stations can be received in Portuguese at night on 25 meters. The list includes R. Difusora Sao Paulo on 11755, R. Clube Pernambuco on 11865, and R. Clube Paranaense on 11935.

RAE is sometimes an erratic verifier. We suggest you send them a report every three months to RAE until your QSL arrives. Brazilians are, as a rule, fair verifiers. If you log several stations, you're bound to receive a couple of QSLs.

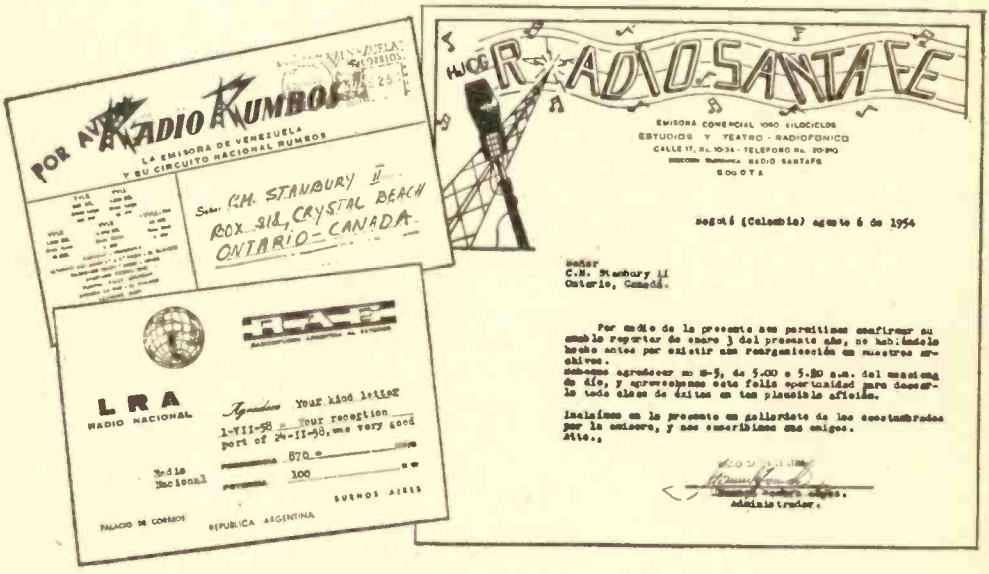
**Real Easy.** At the opposite end of the SA political spectrum (excluding Communist guerrillas) are the liberal regimes of Chile and Venezuela. Chile is often logged in NA on 31 meters via R. Corporacion "La Voz de Chile" on 9700, especially those nights when powerful R. Sofia is weak. Venezuela is easily heard way down on 60 meters where many stations operate. For a starter you might try R. Rumbos on 4970 and R. Continente on 5030. Both stations are in Caracas, both are key stations for major Venezuelan networks, and both are excellent verifiers. In fact, stations in Venezuela and Chile are generally the most reliable verifiers of all Spanish-speaking Latin American broadcasters.

**Middle of the Road.** Falling somewhere in the middle politically, between good and bad verifiers, and not too tough or too easy to log, are five countries; Colombia, Guiana, Guyana, Peru, and Uruguay. R. Nacional de Colombia at Bogota from time to time operates a transmitter on 19 meters, but like most SA stations operating in the international SWBC bands, it simply relays the home service. This one is heard at various times of the day and night on 15330 kHz.

Another Bogota station which can be heard at any time of the night is R. Santa Fe on 4965, and still in the city of Bogota we also have R. Sutatenza on 5075 and 5095 (both a little above 60 meters). Finally, now that R. Americas controversial airborne (or was it?) transmitter has left 6000 kHz, you can look for La Voz Pueblo at Pereira of 5997 around 2000 EST (before VOA Greenville comes on 5995 at 2045). This one also identifies as R. Centro Popular.

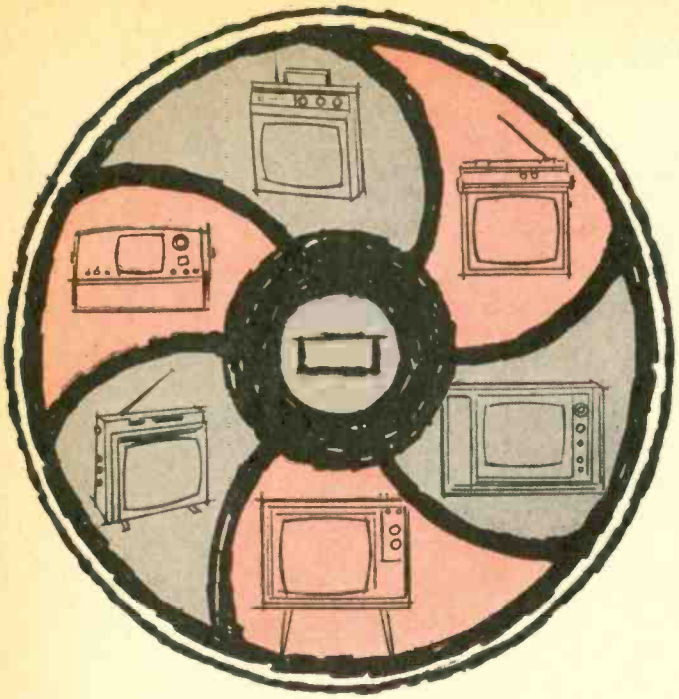
R. Nacional del Peru at Lima is often logged evenings in NA on 9562 and 6082

*(Concluded on page 129)*




**Here are three easy-to-get QSLs from Venezuela, Argentina, and Colombia.**

By Al Sicherman



# ADD COLOR TO ANY TV SET...

They don't make 'em like they used to, but you can!

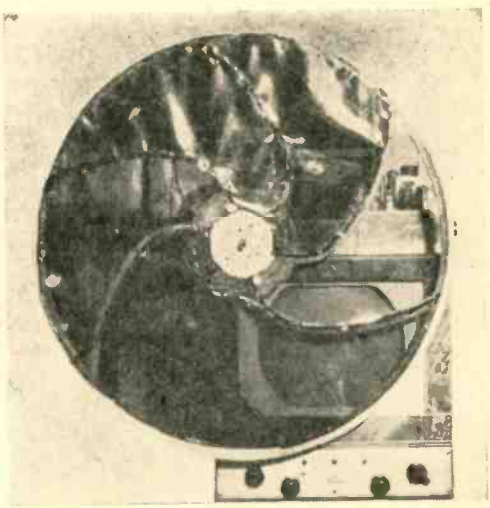
■ The year is 1946 and CBS has just unveiled the first working color-TV system. And quite a chromatic monster it was, too. A great multi-hued disc gradually gained momentum until the blur of its colors synchronized and an era was born.

The rest is common knowledge—the tricolor tube made color-TV a commonplace item, and mass production dropped the price to a reasonable level. Convergence and degaussing became household words and color-TV sets weren't to be moved or subjected to knocks.

But the great colored disc never completely disappeared. A small manufacturer on the West Coast developed a kit for do-it-yourselfers, so the wheel is still with us. And even today, old timers and the author maintain that color obtained this way is superior to the best of the tri-gun systems.

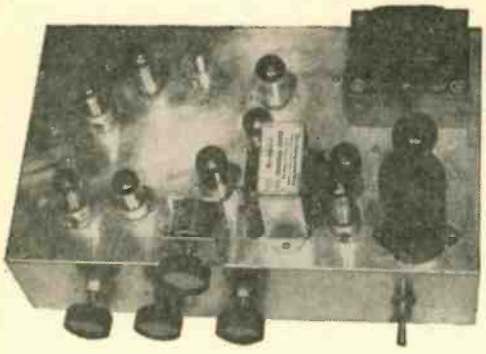
**B&W To Color.** For the guy who's got a hankering to find out for himself or wants to experiment with color transmission, simply going out and buying a set won't satisfy his tinkering hunger. And it's likely to be quite an expensive purchase. Color-TV kits are somewhat less expensive than factory-produced sets, but the step-by-step, anyone-can-do-it approach doesn't appeal to the hard-core experimenter. One very satisfying solution is to convert a black-and-white set to color. Plans for a converter, the Colordaptor, are available from De Var Electronics Co., Menlo Park, Calif. 94025.

The Colordaptor employs a revolving wheel made up of transparent material of the three additive primary colors: green, blue, and red. An eleven-tube circuit de-

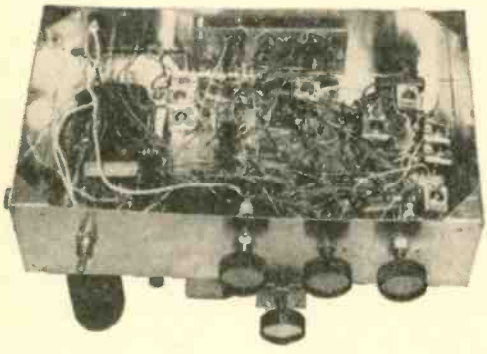


Here's the author's model of the color-wheel TV receiver—the wheel never quite seems to die, it just keeps making for great color.

# ADD COLOR



Heart of Colordaptor is this eleven-tube demodulator chassis that synchronizes video applied to pix tube cathode with disc color segments and also controls motor speed so the right color appears on screen.



modulates and switches the color signal so that, for instance, while the red filter is in front of the screen, only the red portions of the picture (and those which, like magenta and yellow, contain red and other colors) are displayed on the picture tube. Switching the three primary color signals to the picture tube as the wheel rotates at 600 rpm produces a full-color picture. The circuit doesn't affect black-and-white reception.

**Low-Cost Color.** The Colordaptor's seat-of-the-pants approach to color TV has several things to recommend it. The conversion is relatively inexpensive (the whole job can be completed for under $100), and the converter can be assembled a little at a time to avoid major dents in the budget. The job of locating just the right part is always a source of satisfaction for the confirmed construction buff, and the opportunities for improvisation, bargain-hunting, and cannibalizing for the mechanical part of the converter are many.

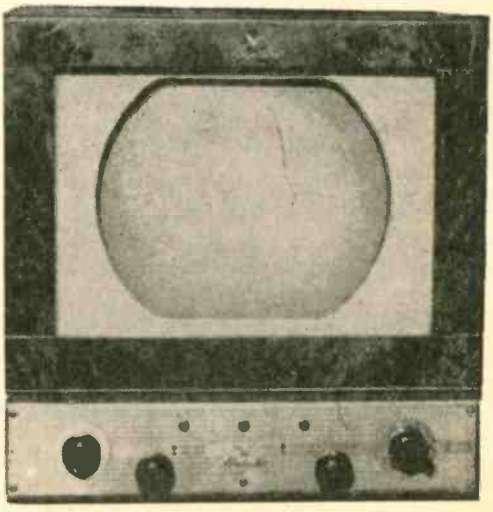
Too, the converter elminates the expensive, critically sensitive tri-color kinescope, and with it the need for periodic convergence and purity adjustments, with their associated test equipment. The black-and-white CRT never needs degaussing, and doesn't require the regulated extra-high voltage supply necessary to the color tube. And, of course, there is the sheer novelty of the device. You can bet your selenium rectifier that your neighbor isn't going to have one.

**Limits To Size.** A basic consideration in converting a B & W set with the Colordaptor is screen size. Though the De Var people claim that wheels for 21-in. sets can be built, the sheer size of such a wheel (about 40 in. in diameter) would make such a conversion of questionable practicality in the average home.

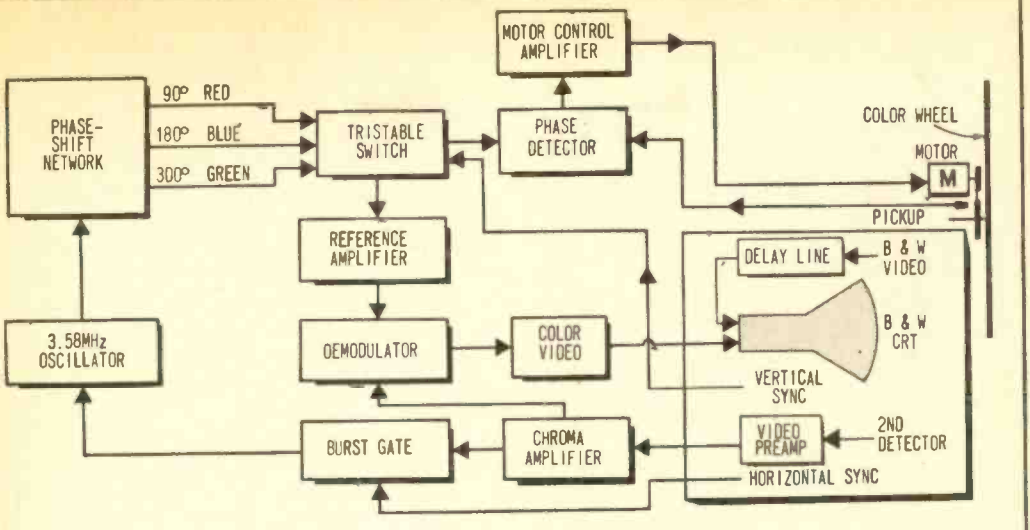
For the author's installation, a 12-in. Majestic table model, which had been doing time in a friend's attic for several years, was used. Such sets are easy to find cheap, if not free, and many of them are, with the help of a new IF tube or two, fine performers. Since the color filters have some dimming effect on the picture, a set with an aluminized picture tube might be worth looking for.

The overall brightness of a converted set with a non-aluminized tube is almost as good as that of conventional color sets, which are handicapped by having tri-color phosphor dots instead of the brighter uniform phosphor coating of B & W tubes.

The Colordaptor's design is fairly straight-



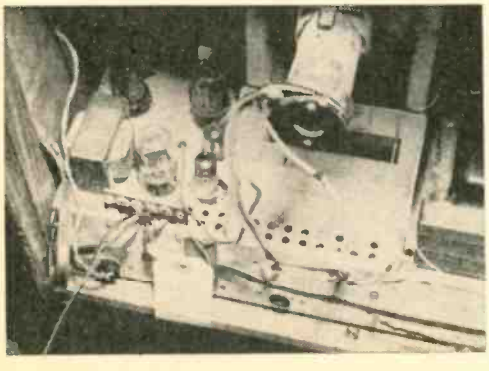
Old timers, like this TV used in author's conversion, can be had for next to nothing.




**Block diagram of Colordaptor hookup to B&W television receiver.**

forward (see block diagram). The video signal is tapped at the set's second detector and preamplified on the spot. The preamp output is then fed to the converter chassis where a narrow-band amplifier strips off the B & W information and the sound. What remains is the standard 3.58 MHz NSTC color signal, which carries all the color information—color intensity is determined by the amplitude of the signal, and hue or tint by the phase relationship between the signal and a burst of eight reference pulses transmitted during horizontal retrace. This signal goes both to the demodulator and to the burst gate.

**Triple Key To Color.** The burst gate is biased off except when kicked by a pulse from the set's horizontal output section during retrace. The gate's output is a series of bursts of eight 3.58 MHz reference pulses. A crystal-controlled stage supplying a continuous 3.58 MHz signal is locked on to these reference pulses. A series of phase-shiting networks makes the continuous 3.58 MHz available in three versions: 90° out of phase with the original, 180° out, and 300° out, corresponding to pure red, blue, and green signals.



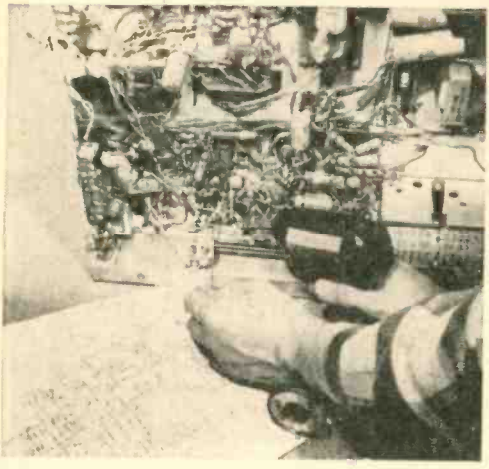
**Extra video amp is installed in receiver in any convenient place (here it's to left of CRT).**

These homegrown reference signals are fed to a three-position electronic switch, which is advanced once each frame by a vertical sync pulse from the set. The output of the switch is a 3.58MHz signal which is alternately 90°, 180°, and 300° out of phase with the transmitted reference. The switched reference signal is amplified and fed to the demodulator where it joins the color information from the chroma amplifier.

At the demodulator, the color signal is compared to the switched reference. The result is a video signal which is alternately the red, blue, and green color information. This signal is amplified and connected to the CRT cathode in grid-modulated sets, or to the grid if the set is cathode-modulated. The path of the black-and-white video signal to the other CRT electrode is unaltered except for the introduction of a delay line to compensate for the extra time the color signal is in transit through the adapter. The delay line is adjusted to obtain exact coincidence of the B&W and color pictures.

**Synchronizing The Wheel.** To insure

# ADD COLOR



Delay line, being installed here, is used to compensate for time it takes video signal to get through Colordaptor circuits.

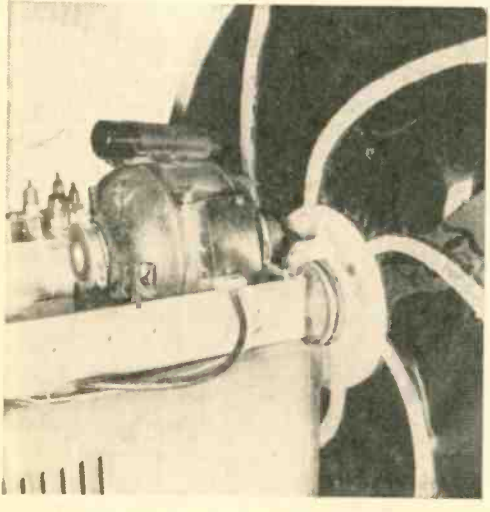
that the rotating wheel and the tri-stable switch are in synchronism, a magnetic pickup is mounted near the wheel. Pole pieces on the wheel are so arranged that the pickup pulses once just before each set of red, blue, and green filters passes in front of the tube. Since the wheel contains six color segments, the pickup is pulsed twice for each rotation. These pulses are compared to the plate waveform of the first of the triodes in the tri-stable switch, and a correction voltage is developed if the wheel position is off. This voltage is amplified and applied to the drive motor.

Only a few unusual electronic parts are used in the Colordaptor. These can be purchased from De Var as a package deal, along with a quantity of color filter material and a booklet of construction tips, for about $20, or most of them may be obtained from radio parts jobbers. The delay line must either be purchased from De Var or hand-wound. A complete kit for the electronic portion of the converter, including a pre-punched chassis, is available for softies for about $100.00.

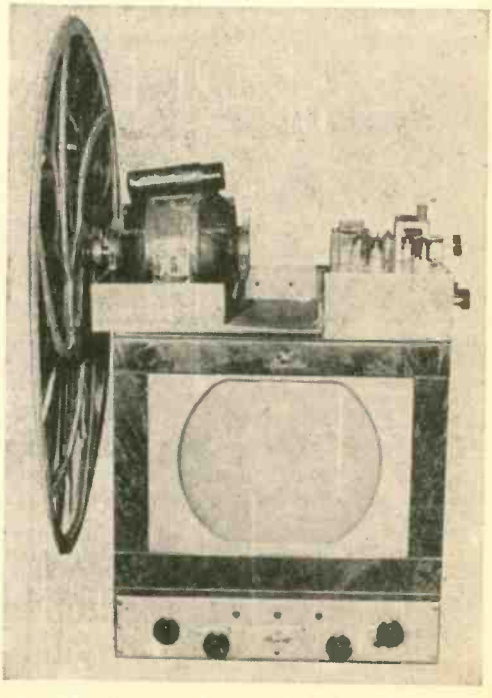
Filter material for the wheel is available in several thicknesses from De Var (the heavy-duty material is well worth the added price), and can also be purchased from Kodak. (Wratten numbers 26, 47, and 58 are recommended for red, blue, and green, respectively.) The author's first wheel was mounted on a ⅛-in. masonite web. This warped rather badly, and was replaced by a web of ¼-in. masonite, which has proved to be quite satisfactory.

**Disc Coverup.** Wind noise from the new wheel is audible, but not objectionable. En-

*(Continued on page 134)*



Hefty motor used by author to drive color-wheel the required 600 rpm.



Completed conversion with color-wheel assembly swung aside for B&W viewing.

# RECEIVER KITS for beginning SWLs

*Here's the dope to introduce the beginner to the exciting world of shortwave without a mis-spent dollar.*

By Herb Friedman, W2ZLF


**Rescues at sea** . . . space communications . . . music and news from around the world . . . John D. Citizen talking to the far corners of the earth . . . accurate time checks . . . weather reports . . . the tiresome, endless speeches by Fidel . . . all these and more—a veritable world of adventure—await you in the comfort of your armchair with a shortwave receiver nearby.

But what kind of shortwave (SW) receiver? One of the new transistor portables? (Many provide SW reception on a limited frequency range, generally the marine frequencies from 2 to 4 MHz.) No, for this isn't really bonafide SW reception. (The frequency coverage is much too restricted and the SW performance, being an add-on feature, is strictly second-rate.)

For pleasure-giving SWLing (shortwave listening) you need a true SW receiver, a rig specifically designed for shortwave listening with features specifically intended for communications. Frequency coverage should be from the bottom of the standard broadcast band (540 kHz) to at least 12 MHz and preferably 30 MHz. (The range of 540 kHz to 30 MHz is generally considered "standard" SW coverage.) The receiver should incorporate a BFO (beat frequency oscillator) to allow reception of CW (code) and sideband signals. And there should be bandspread for easy, convenient tuning (the width of the main tuning dial's pointer on many receivers can represent 10 or 15 stations, and the bandspread can stretch the pointer width into several inches or turns).

# RECEIVER KITS

Though the sky's the limit for SW set prices, receiver kits are available that allow the budget-minded SWL (shortwave listener) to get started with low cost equipment of reasonable performance. Prices of kits listed in our table range from $14.50 to $99.95.

**Why Build A Kit?** While the primary reason for going the kit route is generally the 50 percent savings represented by doing-it-yourself, there are other advantages of selecting a kit as your first receiver. Perhaps the most important reason is experience in both construction and theory. All SW receiver kits are intended for the beginner and newcomer to electronics construction. Therefore, instead of making the kit just another wiring project, most kit manuals also contain a short course in basic receiver theory.

Too, there is the construction itself. Usually, the component layout is designed to avoid tight corners and parts jams. This way, there is plenty of room for a beginner to swing a soldering iron without fear of damaging other components. In fact, to avoid construction problems most kits utilize a printed circuit board for critical circuits. Thus, given reasonable care, a receiver built by a beginner perform as well as one assembled by an experienced technician.

Then there are the service techniques to be learned from a kit. Since the builder is already familiar with the receiver's circuits, any problems in the finished unit can usually be readily resolved.

Finally, there's the experience to be gained in receiver alignment. While many kits contained pre-aligned coils and transformers, all supply an instrument alignment procedure intended for the beginner. The result is that the builder gains a good understanding of the how and why of alignment techniques.

**Which Kit For You?** Bear in mind that the receiver kits listed in our chart are SW receivers in every sense of the term, not ordinary table radios with SW reception thrown in as an extra. Whether the kit is at the bottom or top of the price scale makes no difference; all are intended for serious SWLing.

Your only problem will be to select the model having the features you feel are most important for your particular needs. As a general rule, of course, the higher the price the better the performance in terms of sensitivity and stability.

Before you start to make a selection, understand that there are two types of receiver

*(Continued on page 136)*

**RECEIVING KITS FOR BEGINNING SHORTWAVE LISTENERS**

| Kit Model | Price | Freq. Range (MHz) | Bandspread | Variable BFO | RF Stage | RF Gain Control | Antenna Trimmer | Tuning or S-Meter | Built-in Speaker | Special Features |
|---|---|---|---|---|---|---|---|---|---|---|
| EICO 711 | $49.95 | .55-30 | x | x | | | | x | x | |
| Heath GC-1A | 89.50 | .55-32 | x | x | x | x | x | x | x | Solid-state |
| Heath GR-54 | 84.95 | .18-.42<br>.55-1.55<br>2.0-30 | | | x | x | x | x | x | Crystal IF filter, product detector. |
| Heath GR-64 | 37.95 | .55-30 | | | | | | x | x | |
| Heath GR-81 | 23.50 | .14-18 | | (Regenerative detector) | | | | | x | Fine-tuning control |
| Knight Star Roamer | 39.95 | .20-.40<br>.55-30 | | | | | x | x | x | |
| Knight R-55A | 59.95 | .53-36<br>47-54 | x | x | | | | | x | |
| Knight R-100A | 99.95 | .54-30 | x | x | x | x | x | x | x | Built-in Q-multiplier |
| Lafayette Explor-Air | 22.95 | .55-30 | x | (Regenerative detector) | | | | | x | |
| Philmore 7001-CR | 14.50 | .55-1.6<br>3-13 | | (Regenerative detector) | | | | | x | |

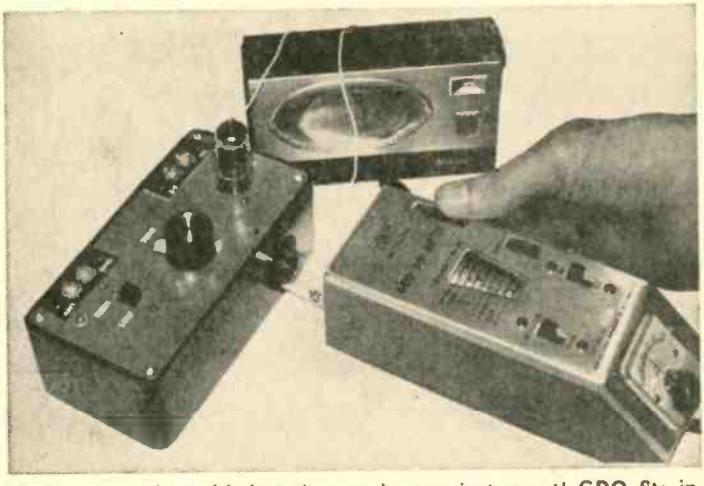
By Robert Kelland

CENTENNIAL 1 SPECIAL

# DIPPERETTE-1

**It takes two to tango and the Dipperette-1 is a wall flower unless a GDO and BCB receiver pitch in to play!**

■ So maybe you're not really an SWL. But you still have an occasional hankering to fire up a rig and tune a few shortwave stations just to see what's happening. Or maybe you're a grade-A diddler just looking for something short and sweet to get your meat-hooks into. In any case, if you've got a Grid Dip Oscillator and an AM radio floating around looking for a cause, we've got



Hookup may be odd, but the results are just great! GDO fits inside the Dipperette-1; output lead wraps around the AM receiver.

a goody that'll put you smack-dab in the middle of Shortwavesville.

The Dipperette-1 is the epitome of simplicity and consists of what is really just a mixer circuit. A Grid Dip Oscillator is used as the local oscillator. The net result is a nifty little shortwave converter that'll zap a healthy SW signal into any standard AM radio.

With only a short indoor antenna, stations from all over the world are easily picked up and then amplified through the broadcast radio. Selectivity and sensitivity are quite good. The Grid Dip Oscillator (GDO) (such as the EICO Model 710 in our photos) is essential for operation of this unit. Since most serious radio experimenters are in possession of a GDO, this requirement shouldn't be a problem. (*Turn page*)

# DIPPERETTE 1

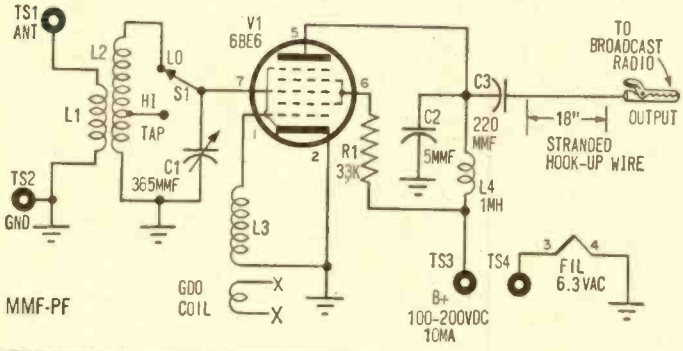
An attraction to the beginner is that no alignment or tedious adjustment is required after the converter is put together. Another note before you start collecting parts: a separate source of power is needed; otherwise, a larger chassis should be used and a self-contained power supply constructed. A schematic for a suitable power supply appears at the end of this article.

**The Ways Of Dipperette.** Signals picked up in the antenna are coupled to tuned circuit *L2/C1*. With band switch *S1* in the *LOW* position, the tuning range is approximately 3 to 7.5 MHz. In the *HIGH* position, stations operating on frequencies between 6 and 18 MHz, are heard. The signal selected is placed between one grid and ground of the pentagrid converter tube (*V1*). Coil *L3* serves as a transformer secondary winding, which receives radio frequency signals from the GDO (now functioning as a local oscillator). The plug-in coil of the GDO is the primary of the transformer.

The signal from the GDO is placed between another grid in the 6BE6 and ground. The two RF signals present in the tube combine to produce two new signals containing the same audio information, but at entirely different frequencies from those injected at the grids. The first new frequency is equal to the sum of the received signal frequency and the GDO signal frequency. The second consists of the difference between the two frequencies.

Without adding further complications, we simply adjust the GDO to a frequency such that the difference between the station frequency and the GDO frequency produces a difference frequency which lies in the standard broadcast band. This new frequency (it still contains the same audio components as did the shortwave frequency) is coupled to the broadcast radio and processed in the normal way.

A short piece of wire from the converter placed near the antenna of the broadcast radio handles the coupling. More about tun-

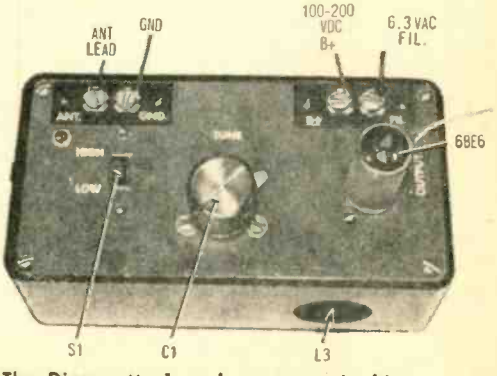



**Take a good look at the schematic diagram—it's very much like the front end of a superhet. GDO coil is not part of circuit, it belongs to the grid dip oscillator that serves as the local oscillator.**

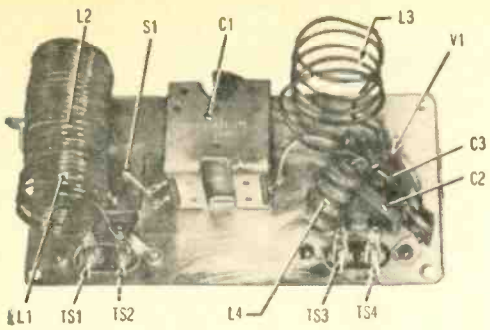
## PARTS LIST

C1—365- or 410-pF variable capacitor
C2—5-pF, 200-VDC disc ceramic capacitor
C3—220-pF, 600-VDC mica or disc ceramic capacitor
L1, L2, L3—(see text)
L4—1-mH radio frequency choke
R1—33,000-ohm, ½-watt resistor
S1—S.p.d.t. slide switch (Radio Shack 275-315 or equiv.)
TS1, TS2, TS3, TS4—2-lug, screw-type terminal strip (Radio Shack 274-345 kit or equiv.)
V1—6BE6 tube
1—Case with aluminum cover (Radio Shack 270-627 or equiv.)
1—#16 AWG enameled copper wire
Misc.—7-pin tube socket, knob, alligator clip, hookup wire, hardware, solder, etc.

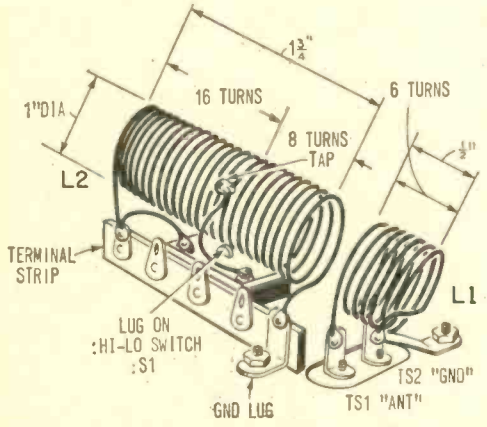
Estimated Cost: $4.00 (less power supply)
Construction Time: 2 hours




**The Dipperette-1 makes a neat looking package and in a small space provided an external power source is used. The High-Low switch and Tune knob are coarse adjustments—the GDO tuning knob provides the fine tune adjust.**




**Follow parts layout if you are a novice. Note RF choke (L4) at right angles to coil L3—this avoids pickup from the GDO.**




**Coils L1 and L2 are wound close with #16 AWG enameled copper wire. Terminal strips support coils prior to mounting.**

ing and operating the unit is covered later.

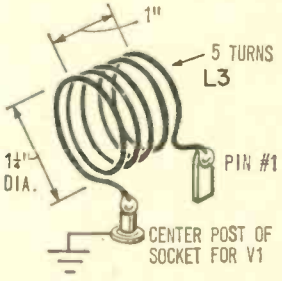
**Building Dipperette.** A small plastic case measuring about 6 x 3 x 2 in. and a matching aluminum cover was used in the model. If you plan on building the power supply on the same chassis, it will be necessary to obtain a larger chassis plate and housing. If intended for temporary use, careful breadboarding of the circuit will be ok.

Follow the photographs to get an idea of the relative positioning of the tuning capacitor, terminal strips, slide switch, and the 7-pin tube socket. Coils *L1* and *L2* were wound on an old metal octal tube envelope, which happens to give the proper diameter. Detailed winding data is given in the sketch. *L2* mounts on an ordinary terminal strip and is self-supporting. The leads of *L1* are soldered directly to the lugs of terminal strip *TS1-TS2*, and the coil is then positioned in line with, and very close to, the grounded end of *L2*.

The author used double cotton covered wire for *L3* to insure against easy baring of the wire and possible short circuits, but the same enamelled wire used to wind *L1* and *L2* will do just fine. The exact position of *L3* is made so that the coil of the GDO will enter *L3* when placed in the access hole made in the plastic case (see photos). The access hole must be large enough to accept the coil diameter of *your* GDO.

The remainder of the wiring is pretty well routine, with the exception of the radio frequency choke (*L4*). Locate the choke as far away from *L3* as is physically possible and position it so that its windings are at right angles to the windings of *L3*. As a final point, remember that this is an RF circuit, so keep leads short and direct to prevent unwanted oscillations.

**Using Dipperette.** Connect the power supply and a short indoor antenna. Let the radio, converter, and GDO warm up for several minutes so the circuits become stabilized. Switch to the *HIGH* frequency band and plug in a GDO coil to match this frequency range (the 7.5-18 MHz coil for the



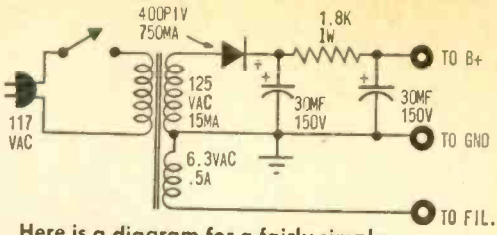

**Coil L3 is wound with #16 AWG wire with an 1¼-in. diameter to allow most GDO coils to pass within the coil.**

**A 1-in. access hole is made in the case for entry of the GDO coil. The hole lines up with L3 inside the case.**

EICO 710). Turn the GDO switch to *OSC* and set the convertor tuning capacitor about mid-range. Adjust the broadcast receiver to a clear spot in the upper half of the band. Clip the convertor's output lead near the broadcast radio's antenna or, if you're using a transistor radio, wrap the output lead around the radio once or twice.

Now, tune the GDO until you hear stations. Top up the station desired by adjusting Dipperette's tuning capacitor. The GDO tuning will be quite coarse, but adjustment of the broadcast dial will provide the fine tuning. The sensitivity of the complete system depends to a large extent on the sensitivity of the broadcast radio, but chances are you'll be amazed at the results of this unit. For the *LO* frequency band, the same tuning procedure is followed. An outside antenna and ground will be needed for best reception on this band.

Don't be surprised if the same station is picked up at two different spots on the GDO dial. This situation (image, you know) can easily arise as illustrated by the hypothetical example below:




**Here is a diagram for a fairly simple power supply that is line-isolated. Parts values aren't critical; plate-supply voltage can be from 90 to 150 volts DC. If the transformer you use has only a 12-volt filament winding, then substitute a 12BE6 for the 6BE6 in the Dipperette-1.**

| | CASE 1 | CASE 2 |
|---|---|---|
| GDO Freq. | 13,000 kHz | 11,000 kHz |
| Stn. Freq. | 12,000 kHz | 12,000 kHz |
| Diff. Freq. | 1,000 kHz | 1,000 kHz |

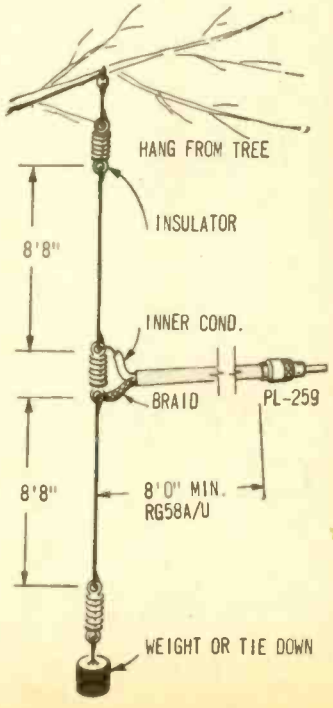
It takes some practice to become proficient in tuning the convertor, and accurate logging of stations by frequency is a bit difficult. However, for general purpose listening you can't beat the Dipperette-1—especially in view of its cost and simplicity. ■

# HERE'S A CB DIPOLE YOU CAN SET UP TODAY

☐ It's always handy to have some form of homebrew, temporary CB antenna around the place. Then you can take the base rig and its skyhook with you on a trip, or you can press the temporary wire into use if something should happen to your regular roof topper. Here is a simple coax dipole you can put together to serve as an emergency or temporary base antenna.

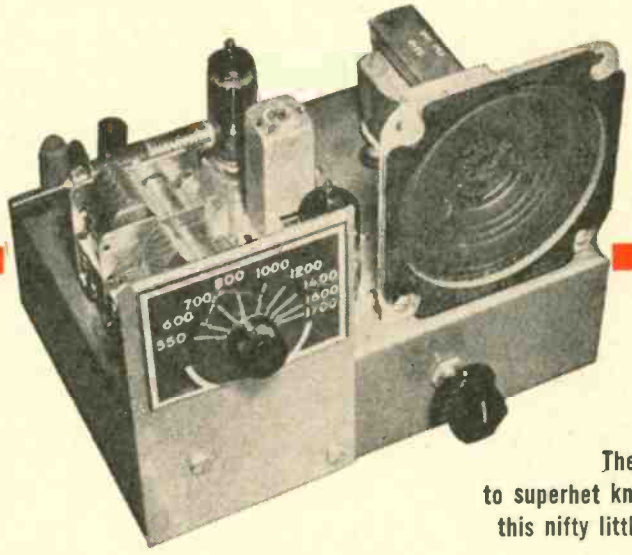
Cut two 8-ft., 8-in. lengths of #16 or #19 hard-drawn copper wire (leave a little extra as you will have to waste about 2 in. of each piece making connections). Take three glass or porcelain insulators and connect them as shown in the diagram at right. Next, take *more than* 8 ft. of RG-58A/U coax, and strip one end, exposing the braid and inner conductor. The braid gets soldered to one side of the antenna, the center (inner) conductor to the other side. You can then connect a PL-259 connector to the free end of the coax for hooking to your set—however, make certain that the coax runs at right angles to the antenna for at least 8 ft.

Want a quick camp-site antenna for portable CB rigs? Take a peek at the bottom of page 70. ■



CENTENNIAL 2 SPECIAL

By Robert E. Kelland



The quick and easy way to superhet knowhow is by building this nifty little rig, that's our. . . .

# BCB 2 for Beginners

A regular superhet can be a pretty complicated way to grind your teeth in the realm of receivers. That's because you need a bevy of parts and plenty of spare time for construction. There's also the disheartening fact that it's simply cheaper to buy a standard four tube job than it is to build one.

But here's a little rig that'll get you initiated into the ranks of experimenters who find the superhet old hat, and it'll do so without making you float a loan at the local shark's. On top of that, the BCB 2 will stand you in good stead for years to come as a handy, reliable little BCB grabber.

What's really unusual about this rig is the fact that though it's got but two tubes, it's actually a full-fledged superhet. Most radio experimenters are well aware of the inherent drawback of a simple TRF broadcast radio. The selectivity (ability to separate stations) of TRF jobs tends to keep them confined to the experimenter's bench. The BCB 2 overcomes this drawback by incorporating the superheterodyne principle.

**Two To You.** A look at the schematic diagram reveals the combination of circuits used. The loopstick antenna coil (L1) and the tuning capacitor C1A do the usual job of tuning in the frequency desired. The signal selected is passed to the grid of the 6BE6 pentagrid mixer tube. At the same time, the local-oscillator tuning-capacitor C1B, and coil L2 are together generating their own radio frequency signal which is 455 kHz higher than the station frequency. The oscillator signal is coupled to another grid in the 6BE6.

The station signal and the local oscillator signal mix in the 6BE6 and the output frequency in the plate circuit is the difference between the two frequencies, or 455 kHz. The new frequency carries the same audio components as the original station carrier frequency. The primary of the intermediate frequency (IF) transformer is tuned to this frequency and it couples the signal to its

secondary, which is also tuned to 455 kHz.

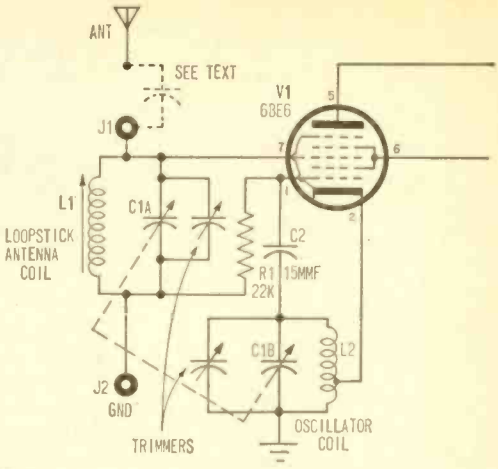
The triode section of the 6BL8 has the dual job of demodulating the radio signal and of giving some audio boost. Grid-leak detection was found to give good audio reproduction in this circuit. The final stage further amplifies the audio signal and passes it on to the speaker.

**Here's How.** Use a 5 x 7 x 2 in. chassis and plan your layout from the photographs. The IF transformer mounts in an adapter plate which in turn mounts in a 1⅛-in. chassis hole. When purchasing the two-gang tuning capacitor (C1A, C1B) and oscillator coil (L2), be sure to check that they are matched (see Parts List). The antenna coil (L1) is a standard unit and will match most capacitors after some slug adjustment. If you live close to broadcasting stations you can forget about the ground jack (J2) since it isn't necessary for normal reception. The 3½-in. speaker is mounted on the chassis with two right-angle brackets. If you have a larger speaker it would be best to mount it in the radio cabinet and then bring the voice-coil leads to the radio.

All RF wiring (on the left of the IF transformer—see schematic) must be as neat as possible. Short leads and direct connections are necessary. The detector and audio stages are less critical and layout modifications can be made to suit your cabinet design. The volume control and switch can be moved almost anywhere along the front apron. The output transformer (T2) used in the model is a universal type, but almost any transformer with between 5k- and 10k-ohms primary impedance will be satisfactory. For best performance, the secondary impedance should match that of the speaker's voice coil.

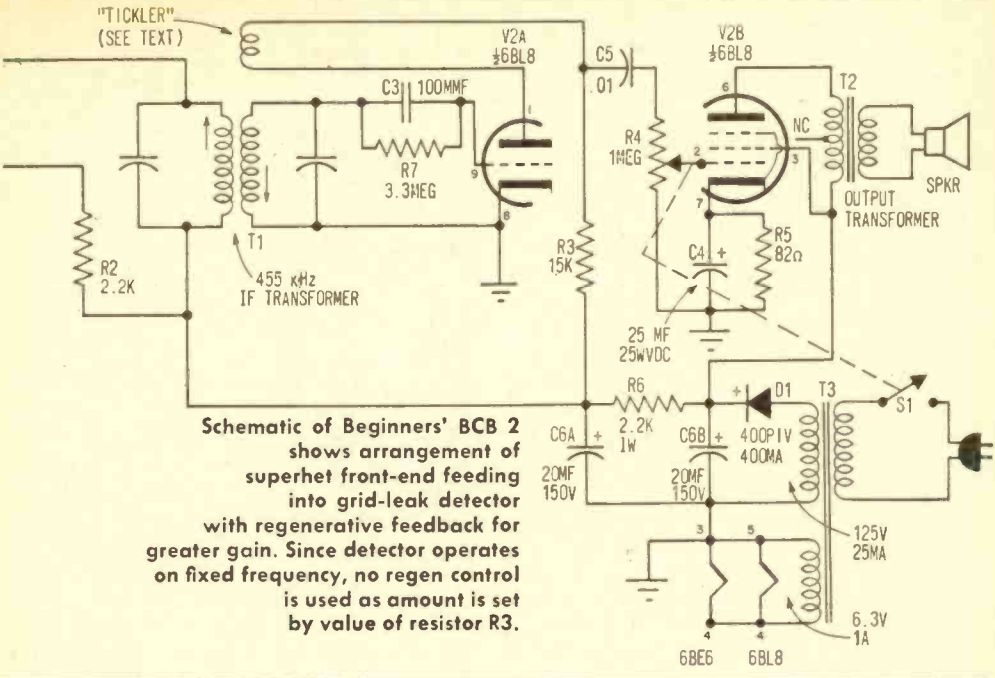
**Something For Nothing.** A substantial increase in IF gain is accomplished by adding regeneration to the detector stage. This is done by winding four turns of #28 insulated hookup wire next to the secondary of the IF transformer as a tickler coil. Normally this winding will not cause the detector to go into oscillation. And since the detector operates at a fixed frequency, tuning won't affect the amount of feedback.

To get to the IF coils, unbend the little tabs on the bottom of the transformer that holds the cover to the base. Carefully lift off the cover and wind the tickler directly next to the secondary of the transformer, taking care not to damage the fine IF coil wire.

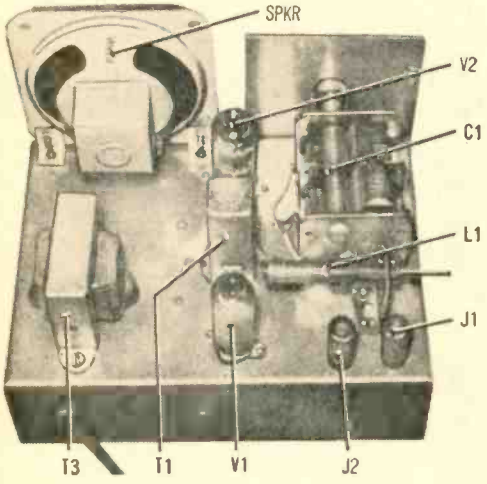



**PARTS LIST**

C1A, C1B—Tuning capacitor, two-gang BCB superhet type
C2—15-pF disc or tubular capacitor
C3—100-pF disc capacitor
C4—25-mF, 12-VDC electrolytic capacitor
C5—.01-mF disc capacitor 400 volt
C6A, C6B—20-20-mF, 150-150-volt dual electrolytic capacitor
D1—Silicon rectifier diode, 400-PIV, 400-mA
J1, J2—Binding posts (Radio Shack 274-736 or equiv.)
L1—Loopstick antenna coil with adjustable slug (Radio Shack 270-1430 or equiv.)
L2—Three-terminal (tapped) broadcast oscillator coil (Lafayette 34C8713 or equiv.)
R1—22,000-ohm, ½-watt resistor
R2—2200-ohm, ½-watt resistor
R3—15,000-ohm, ½-watt resistor
R4—1-megohm, audio-taper potentiometer with s.p.s.t. switch (S1)
R5—82-ohm, ½-watt resistor
R6—2200-ohm, 1-watt resistor
R7—3.3-megohm, ½-watt resistor
S1—See R4
T1—455-kHz intermediate-frequency (IF) transformer, universal replacement type, with adapter plate (Lafayette 32C0946 or equiv.)
T2—Audio output transformer (Lafayette 33C-3701 or equiv.)
T3—Power transformer, 125-V at 25-mA, 6.3 V at 1A (Lafayette 33C8096 or equiv.)
V1—6BE6 tube
V2—6BL8 tube
Spkr—3½-in. square speaker, 3.2-ohm voice coil impedance (Lafayette 32C0927 or equiv.)
1—5x7x2-in. aluminum chassis
Misc.—7-pin socket, 9-pin socket, terminal strips, 3x4½-in. aluminum plate, hardware, knobs, hookup wire, line cord and plug, solder, etc.
Estimated cost: $18.00
Construction time: 8 hours




**Schematic of Beginners' BCB 2 shows arrangement of superhet front-end feeding into grid-leak detector with regenerative feedback for greater gain. Since detector operates on fixed frequency, no regen control is used as amount is set by value of resistor R3.**

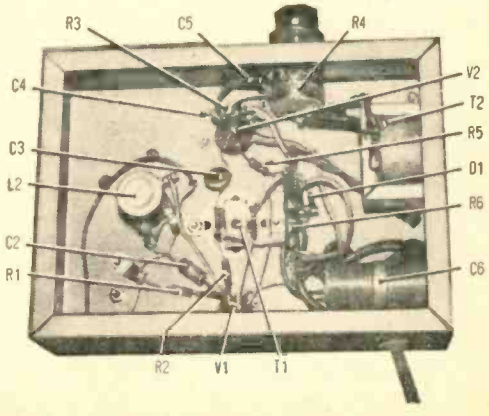



**Topside layout of parts is straightforward and tidy. Use photos as guide for layout of your own BCB 2.**

File little notches in the base of the transformer, place the tickler leads in them, and cement in place. Replace the cover and you're ready to hook up the tickler (see schematic). Bear in mind that if the tickler is connected backwards it will decrease gain instead of increasing it. If this happens in your case, just reverse the connections.

If the detector breaks into oscillation as a result of the tickler, increase the value of the plate load resistor (R3) until oscillation stops.

**Firing Her Up.** After the tubes warm up, check for proper audio operation by touching your finger to the grid (pin 9) of the 6BL8. A loud hum should be heard which may be increased and decreased by the volume control. If this checks out, connect a short antenna (not more than 6 ft. long) and try tuning for a station. If you are lucky, you will pick up local stations. However,




**Completed wiring of BCB 2 shows few parts and wide-open spaces making construction a snap.**

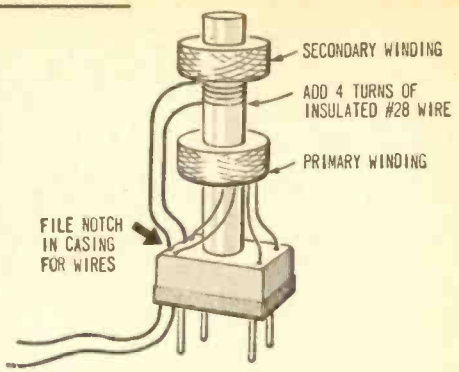
your set will likely require alignment before satisfactory results are obtained.

To align the IF transformer, a modulated RF signal from a signal generator is needed. If a generator is available, connect it to the antenna jack through a 200-pF capacitor. Connect a VOM or a VTVM set on a low AC voltage range across the speaker terminals. Set the tuning capacitor to the high end of the broadcast band (plates fully open) and tune the generator to produce a modulated 455-kHz output. Adjust the slugs in the IF transformer (top and bottom) for maximum output as indicated on the voltmeter. The remainder of the alignment procedure can be done by "ear."

Set the tuning capacitor to a position where a station should be. A look at another radio tuned to the station desired will give you an idea of where to set the capacitor. Adjust the slug in L1 and the trimmer capacitor on C1B until the station is heard. If successful, tune for other stations and note their relative levels. Some retouching of the oscillator trimmer and antenna coil, along with the antenna trimmer capacitor (on C1A) will be needed to get optimum performance right across the band.

**Antenna Hookup.** If you use a long antenna it may be necessary to connect a small coupling capacitor between the antenna and the antenna jack to prevent the mixer from blocking and distorting the signal. As a final step, a suitable dial must be made to agree with the capacitor tuning. A simplified dial which includes only the local stations in your area is easiest to make, or you can do as the author did and salvage a dial from a junked BCB receiver.

But however you finish off your BCB 2, you've got a superhet under your belt and a neat little rig that's nice to have around. ■




ADDING "TICKLER" COIL TO IF TRANSFORMER

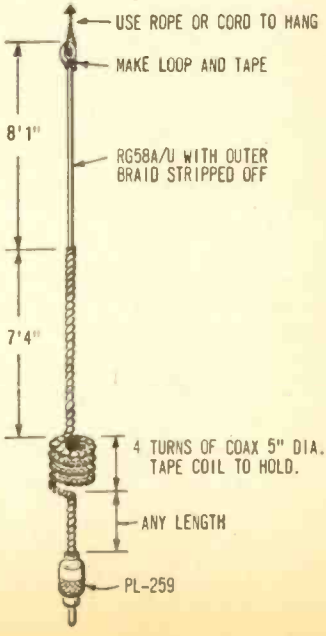
**Regenerative feedback is supplied by adding tickler coil to IF transformer. Care must be taken not to damage IF coil wires.**

# CB'S COAX-COBRA

☐ You may think it would be easy to fabricate a whip antenna from some wire strung up from a tree—and it is! But, if you're going to all that trouble, why not make the Coax-Cobra? It takes a few minutes to knock together from a 16-ft. or longer length of coax, and it'll outperform any whip you could assemble.

Take the required length of RG-58A/U cable, and strip the black outer coating and metal braid a distance of 8 ft. 3 in. from one end. Make a loop at this end by folding over 2 in. and taping. Now, measure 7 ft. 4 in. down from where the stripping ended and make 4 turns (loops) 5 in. in diameter, wrapping the loops with plastic electrical tape to hold them in place. That's about all there is to it—just measure off the distance between the loops and your rig, cut the cable, attach a PL-259 (Amphenol 83-1SP plug and 83-168 adaptor), connect to the rig, and the Cobra is ready to sing.

If you go camping with a transistorized CB, our Coax-Cobra is just the antenna you should have rolled up in your pack to replace the stunted antenna stick your rig now uses. (By the way, take a peek at page 66.) ■



CENTENNIAL 3 SPECIAL

# SUPER SQUARED 3 FOR HAMS

**This rig is the cat's meow if you're hurtin' for a sensitive, selective little mini-meter grabber.**

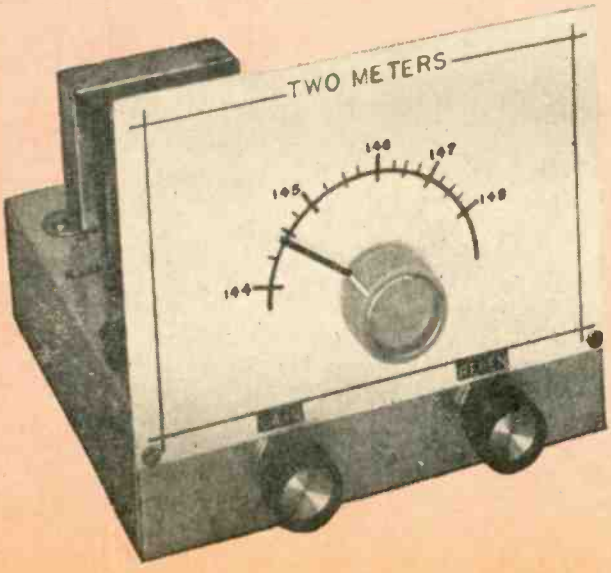
■ There's happy listening for you on two. That's because ever-increasing popularity of 144 to 148 MHz is making for gobs of activity up there in mini-meter land. And for good reason, too.

If you thought the high frequency bands, like two meters, were deadly dull, think again. Fact is, better understanding of what's going on up there in the ethereal heights of radiodom, improved high frequency technology, plus overcrowding of the lower frequencies all combine to make this band ever more popular.

For local rag-chews, as well as longer distance band-opening contacts, more and more hams are populating the two-meter portion of the radio spectrum. One big reason is it's the only ham band where novice-class licensees can operate phone, and it's a popular technician-class band as well.

You can listen in on the fun on two meters with our Super Squared 3-receiver. The unit is easy to build and doesn't need elaborate test equipment to get it operating. The way-out (*Continued overleaf*)

**By Charles Green, W6FFQ**




**Super Squared 3 is just the receiver if you're ready to step up to 2 meters. This hot-shot uses a superhet front-end for good selectivity and a superregen detector for excellent sensitivity. Two stages of audio provides poop for driving a speaker or headset.**

# SUPER SQUARED 3

design of Super Square's circuitry includes a superhet front-end driving a superregen detector providing unusually good selectivity and *lotsa* gain. The audio section, using two stages, will drive an external speaker. The receiver is built on a 7x7x2-in. aluminum chassis, with a built-in AC power supply.

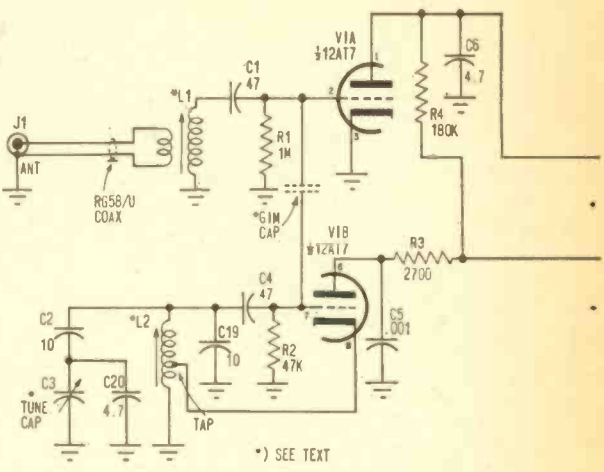
**How It Works.** Let's have a look at the schematic diagram. A two-meter antenna connected to J1 delivers signals through the coax to a two-turn link on L1. The coil L1 is broadly tuned to the 2-meter band with the wiring and tube capacity. Signals are coupled via C1 to the grid of V1A and mixed with the oscillator output of V1B. V1B is tuned approximately 12 MHz below the incoming signals and coupled to the grid of V1A via the gimmick capacitor. The resultant 12 MHz signal output is coupled from the plate of V1A to the cathode of the superregenerative second detector V2A by coupling capacitor C7.

Potentiometer R7 controls the regenerative action of the circuit by varying the B+ voltage to V2A. The detected signals are fed through the low pass filter R8, C11 to minimize overloading of the audio stages by the detector's quench voltage. The audio signals are coupled via C10 to the audio gain control R13 and the first audio amplifier stage of V2B.

The amplified audio signal is coupled through C14 to the grid of V3 and further amplified. Output transformer T1 couples the audio to an external 3-ohm speaker connected to J2. The necessary power for the receiver circuits are supplied by transformer T2, diode D1, and the B+ filter consisting of R14, R15 and C17A, B, C.

**Putting SuperSquare Together.** Layout the 7x7x2-in. aluminum chassis as shown in the photos. Easiest way is to tape a sheet of graph paper on the chassis, and mark the holes to be cut. Remove the paper before mounting components on the chassis. Space the parts as shown and follow the parts placement shown in our unit. As in all high frequency circuits, the wiring and component placement is critical. Keep the RF wiring as short as possible. Use sleeving over bare leads.

The author used a 5x7-in. heavy cardboard front panel with aluminum foil cemented to its back for shielding. This makes



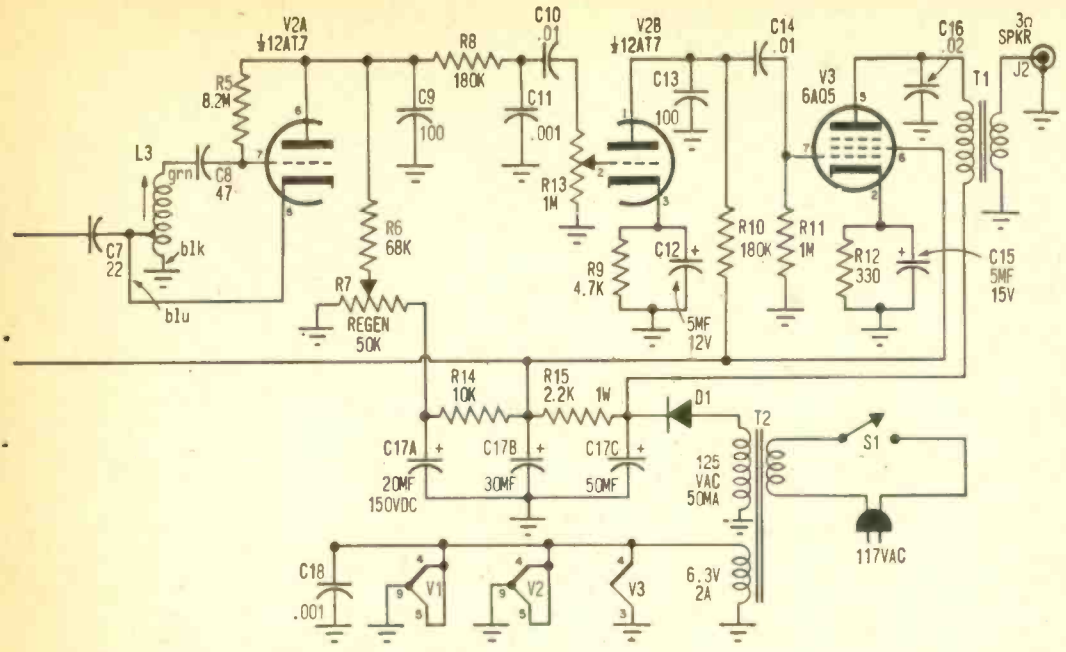

**Schematic of Super Squared 3 shows low-noise triode mixer feeding superregen detector.**

**PARTS LIST FOR**

C1, C4, C8—47-mmF, 500-volt Ceramic tubular capacitor (Erie 315-005U2M470K or equiv.)
C2, C19—10-mmF, 500-volt ceramic tubular capacitor (Erie 301-000C0H110C or equiv.)
C3—15-mmF, variable capacitor; 2 rotor and 1 stator blade, modified by removing 1 rotor blade (see text) (E. F. Johnson 149-1)
C5, C11, C18—.001-mF, 1000-volt ceramic disc capacitor (Erie 801-000X5F0102K)
C6, C20—4.7-mmF, 500-volt ceramic tubular capacitor (Erie 301-000C4H479C or equiv.)
C7—22-mmF, 100-volt ceramic tubular capacitor (Erie 390-000X5P0220K or equiv.)
C9, C13—100-mmF, 500-volt ceramic tubular capacitor (Erie 315-005X5U101K)
C10, C14—.01-mF, 1000-volt ceramic disc capacitor (Erie 871-000Z5U0103M)
C12—5-mF, 15-volt miniature electrolytic
C15—5-mF, 15-volt miniature electrolytic
C16—.02-mF, 1000-volt ceramic disc capacitor (Erie 841-000Z5U0203M)

for easy inking of the front panel dial and lettering. An aluminum front panel can be used as well, with decals for the dial. The panel is mounted with two sheet metal screws to the chassis and two nuts on the threaded bushing of C3.

Before mounting C3, remove one rotor blade by carefully twisting it with a pair of long nose pliers. Install a ground lug under the rear mounting foot of C3 and a washer under the front foot to keep it level. Solder the ground lug to the rear rotor terminal of C3 and connect C20 between the lug and




**SUPER SQUARED THREE HAM RECEIVER**

C17A, B, C—20-30-50-mF, three section 150-volt electrolytic capacitor
D1—Silicon rectifier, 400 PIV, 750 mA (Erie 1N2070, Radio Shack 276-1110 or equiv.)
J1—ANT jack, phono socket with RF type insulation
J2—SPKR jack, RCA-type phono jack
L1—0.15-uH coil (J. W. Miller 20A157RBI, Allied 50D0367 or equiv.)
L2—4 turns No. 22 wound on J. W. Miller coil form A000RBI (Allied 54D3908) tapped at one turn from bottom (see text)
L3—Oscillator coil (J. W. Miller B-321-C or equiv.)
R1, R11—1-megohm, ½-watt resistor
R2—47,000-ohm, ½-watt resistor
R3—2,700-ohm, ½-watt resistor
R4, R8, R10—180,000-ohm, ½-watt resistor
R5—8.2-megohms, ½-watt resistor
R6—68,000-ohms, ½-watt resistor
R7—50,000-ohms, linear taper, potentiometer
R9—4,700-ohms, ½-watt resistor
R12—330-ohms, ½-watt resistor
R13—1-megohm, audio taper, potentiometer with s.p.s.t. switch (S1)
R14—10,000-ohms, ½-watt resistor
R15—2,200-ohms, 1-watt resistor
S1—S.p.s.t. switch (part of R13)
T1—Output transformer; 5,000-ohm primary to 3.2-ohm sec. (Allied 54A2064 or equiv.)
T2—Power transformer; 125-VAC, 50-mA; 6.3-VAC, 2-A secondaries (Allied 54A1411 or equiv.)
2—Terminal boards (Erie 3976-205-2)
V1, V2—12AT7 tube
V3—6AQ5 tube
1—7x7x2-in. aluminum chassis
Misc.—2- 9-pin sockets, 1- 7-pin socket, cardboard for dial, rubber grommets, AC line cord, one and three lug terminal strips, wire, solder, etc.

Estimated cost: $30.00
Estimated Construction time: 8 hours

stator terminal, keeping the leads short.

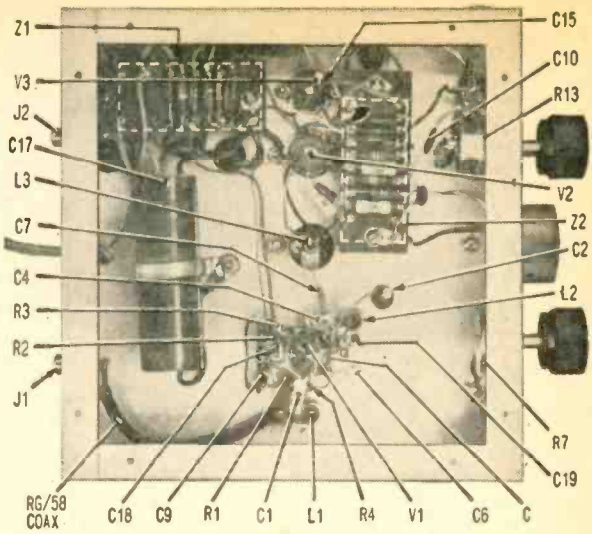
Erie terminal boards were used to mount most of the parts. These terminal boards have connecting jumper strips which are left connected or removed as necessary. The terminal boards are mounted away from the chassis with ½-in. metal spacers. Install ground lugs on the mounting screws as shown. The unused terminals around the AC line input connections to the terminal board were removed.

Wind two turns of hookup wire around the base of L1 (see drawing) and solder one end to the center conductor of a length of RG-58/U coax and the other end to a ground lug. Connect the coax to J1. Make sure the coax shield is connected to the chassis at both ends.

Wind L2 as shown in the drawing and solder the #22 bus wire to the coil terminals positioned to the dimensions indicated. Space the coil wire so the turns do not short. Use the serrated washers under both the mounting nuts and coil form body to prevent movement of both coils. Make the Gimmick capacitor by connecting two lengths of hook

# SUPER SQUARED 3

**Most circuit components of Super Squared 3 are mounted on terminal boards for easy assembly and rugged construction. Leads in RF section must be kept short at these frequencies.**

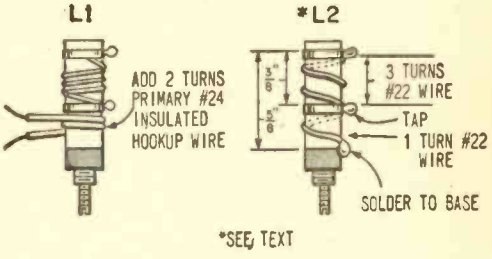



up wire to pins 2 and 7 of V1 and twisting them together two turns. Cut off the excess wire.

**Firing It Up.** After you have completed construction, plug in the tubes, and allow the receiver to warm up for a few minutes. Connect an external 3- to 4-ohm speaker to J2, and set the Gain control (R13) to maximum clockwise position (full gain).

Adjust the tuning screw on top of L3 to about ¼-in. out. Exact adjustment is not necessary. This will provide an IF of about 12 MHz. Install another nut on the L3 screw to lock it into position. Rotate the Regen control (R7) clockwise until you hear the characteristic superregenerative hiss from the speaker. Set the tuning capacitor (C3) to full capacity.

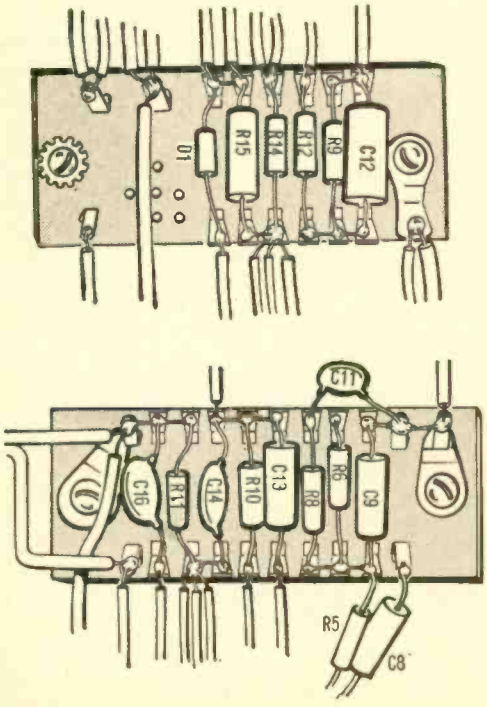
If you happen to have a signal generator that covers from 144 to 148 MHz, connect it to J1 and set it for 144 MHz modulated output. Adjust L2 until you hear the signal in the speaker. Set the signal generator to 145 MHz and tune C3 until you hear the signal in the signal in the speaker. Reduce the output of the signal generator until you can just hear the signal above the background hiss, then adjust L1 for maximum signal. Readjust C3 around the signal as you adjust L1 for best reception. Use the lock nuts supplied with the coils to keep adjustments from shifting. Calibrate the dial.




**Coil L1 is pre-wound, you just add primary. Coil L2 is wound on coil form as shown. Complete details are given in text.**

If you don't have a signal generator, set the L1 and L2 screws to approximately ¼-in. out from the top of the coil. Connect a good two-meter antenna to J1 and listen for signals. Receiving conditions are generally better at night, as the band is more

*(Continued on page 135)*




**Terminal boards can be pre-assembled before mounting in chassis. Remainder of wiring is then readily completed.**

By C. M. Stanbury II

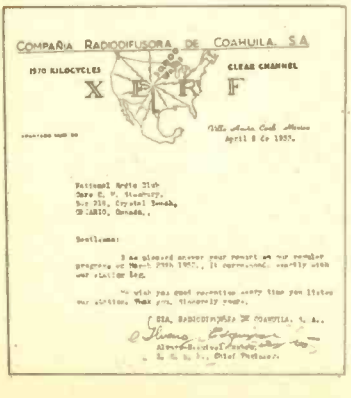

# DX CROOKS AND CLANDESTINES

■ Voice transmissions first appeared on the radio scene around 1920. By 1923 one "Doc" Brinkley had put KFKB on the air from Milford, Kansas to sell his phony "goat gland" operation, and the war was on. Which war? Why, the one between ostensibly respectable broadcasters and illegal, on-the-fringe operators. Since those early years, crooked and clandestine voices have operated from just across the Mexican border, with bootleg transmitters from hidden locations in almost every country of the Earth, aboard ship, and more recently from high-flying aircraft.

In 1930, one of the first acts of the newly created Federal Radio Commission (which subsequently became the FCC) was to cancel KFKB's license. After a court battle, Doc skipped to Villa Acuna, Mexico (just across from Del Rio, Texas) and went on the air over XER with a potent 500 kW. XER pretty well set the pattern for all Mexican "border" stations (i.e., XE transmitters operating almost exclusively for non-Mexican audiences)—dealing primarily in quack medicine and hate peddling.

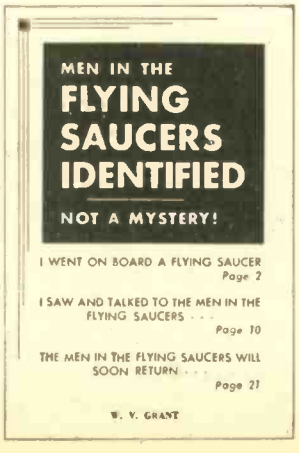
Whatever your disease, they have the cure. And whomever you happen to hate (Negroes, Jews, Catholics, saucer people or what have you) the XEs can show you how to do it better. Our favorite is the super patriot evangelist who thinks UFOs are aligned with the antichrist, the Kremlin, and just about every minority group you can name.

**Never Say Die.** Contemporary with Brinkley was Norman Baker, the notorious cancer quack who eventually served time in the Texas state pen (Brinkley died before he could stand trial). When the FRC silenced Baker's KTNT at Muscatine, Iowa, he set up XENT at Nuevo Laredo. XENT added its own unique touch to the border broadcasting business by deliberately camping on the frequency of a U.S. clear-channel station and staying there until *paid* to move. Baker thus


COMPAÑIA RADIODIFUSORA DE COAHUILA, S.A.

1570 KILOCYCLES CLEAR CHANNEL

X E R F


MEN IN THE FLYING SAUCERS IDENTIFIED

NOT A MYSTERY!

I WENT ON BOARD A FLYING SAUCER Page 2

I SAW AND TALKED TO THE MEN IN THE FLYING SAUCERS . . . Page 10

THE MEN IN THE FLYING SAUCERS WILL SOON RETURN . . . Page 21

W. V. GRANT

**Here's a QSL letter from one of several high-powered stations on the Mexican side of the border along with some flying-saucer "literature" station helps distribute. These stations, outside FCC jurisdiction, occasionally engage in questionable practices in their U.S.-directed transmissions.**

became the world's first "counter-broadcaster," a technique now adopted by the Russians to jam R. Free Europe, R. Liberty, and R. Peking.

Today, with hate literature being peddled almost openly by many FCC licensed broadcasters, border stations are beginning to feel the competition. One, XETRA at Tijuana, when sold to new owners a few years ago, adopted a highly legitimate 24-hour-a-day news format. Another, XERB at Rosarita Beach, is currently aiming at California's underground music market.

But of course underground radio itself is as old as KFKB. Before the FRC was created, stations *not* heard across state lines required no license. And even after this law was changed, many flea-powered bootleg operations continued business as usual. Most were, and still are, operated by teen agers and college students on the air just for the fun of it. Programming was usually a very poor copy of legitimate BCB stations and, until recently, showed virtually nothing of the true underground spirit.

**The Bootleg Set.** Internationally, it seems that wherever there is a hobby interest in electronics, bootleg broadcasters appear on the scene. In 1966 many were operating in the Soviet Union. Apparently the miniwatt pirates were more or less ignored until they began attacking the Russian government and airing phony news reports (mild little things like an attack by U.S. nuclear rockets). In Greece, until the recent military takeover at least, unlicensed stations operated so openly that many towns depended on them for entertainment. One Greek pirate, the Pygros Broadcasting station, regularly aired DX programs for Scandinavian radio clubs.

As soon as any bootleg transmitter becomes involved with politics, or offends the local "Establishment," its days are oftentimes automatically numbered. Therefore as technology advanced, serious-business pirates soon found ways to operate beyond the jurisdiction of national governments, in other words from International Waters. The first shipboard operation was RXKR aboard a gambling ship off the California coast, and its purpose was to attract customers to the gaming tables. Though the ship was of Panamanian registry, pressure from Washington soon persuaded Panama to close the station.

**Pirates For Pay.** Commercial pirate radio vessels first made their appearance in European waters very late in the 1950s. The oldest still in business is VRON, the Dutch-oriented R. Veronica on 1563 kHz. But these didn't really become big business until R. Caroline invaded the British market, after which they multiplied like flies.

Oddly enough, shipboard commercial stations have behaved in a very circumspect manner. Their programming generally resembles that of licensed stations over here. When Rhodesia's rebel regime attempted to buy time on one of the buccaneers, the offer was turned down flat.

Unfortunately for "free enterprise" broadcasting, pirates-for-pay which use various abandoned anti-aircraft forts off the British coast have a different record. The owner and an employee of R. Invicta (which subsequently became R. 390) were drowned under very mysterious circumstances. The owner of R. City (now defunct) was shot and killed by an official of another pirate organization (the jury decided it was self-

**Newsroom of commercial SW station, WNYW, Radio New York Worldwide—formerly WRUL. Though fully licensed by the FCC, station has allegedly been involved in secret radio activities on at least three separate occasions.**

485 MADISON AVENUE / NEW YORK, N. Y. 10022 / TELEPHONE (212) 752-3322

Radio New York Worldwide, Inc.

16 May 196

Dear Chuck:

Have enclosed your QSL card...probably the only typed QSL from this station for months..ha! Anyway, it's a very complete QSL.

Sorry, but cannot release information as to that location of our temporary transmission site.

We should be back operating from Scituate soon, maybe just a few weeks...no, not with the old transmitters..they're useless.. but with new ones....I'll get more details to you when I receive hearing them here and can release it.

Irwin



QSL card and letter from WNYW confirming reception while station was operating from a secret location, allegedly because old transmitter site was completely destroyed by fire.

defense). All of which has provided the British government with excellent ammunition in its now determined drive to put the pirates off the air.

**Spy in the Sky.** But technology marches on and "UNCLE" has come up with a vehicle even more portable, more flexible, and considerably harder to find than any ship. This is the airborne shortwave relay, carrying transmitters up to 10 kW in power along with the accompanying power supply. Circling at altitudes at 10,000 feet (or possibly higher), antenna height is certainly no problem. Washington now claims to be using one such high-flying end-all station in Vietnam.

There may be airborne stations broadcasting in other parts of the world, although not necessarily over international waters. So far only western owned stations have worked either from the high seas or from airborne sites. The United States' superior naval power, especially in the Americas, plus its worldwide network of airbases are probably factors in this. But it is likely only a matter of time until the Communists (who have even less respect for international radio regulation than does the CIA) get into the act.

(*Continued on page 82*)





QSLs from pirate stations Radio Veronica, the oldest still in business, and even more famous Radio Carolines.

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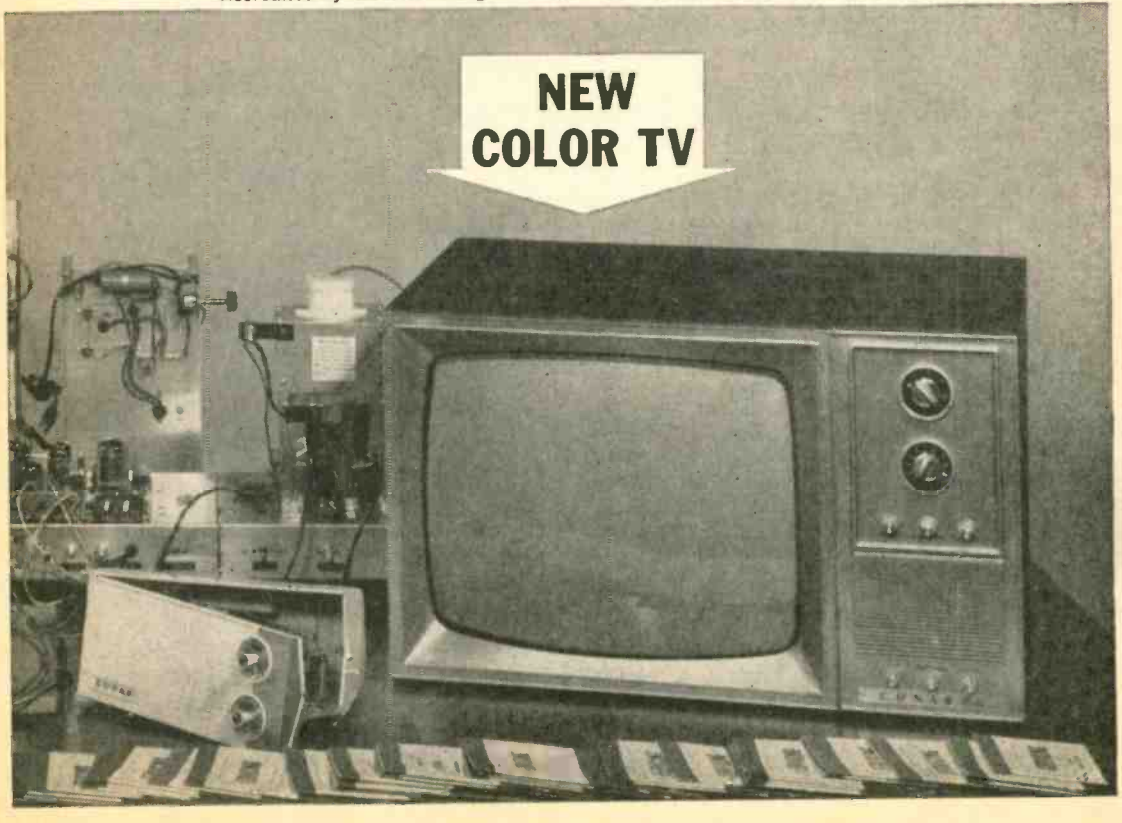


# CLANDESTINES

Adding to this potential chaos is the fact that many supposedly non-clandestine broadcasters are actually involved in secret radio activities. R. Sofia in Communist Bulgaria masquerades as the Greek "Voice of Truth" (frequencies include 6215 kHz around 0030 EST) which has been particularly active since the Athens military takeover.

Another striking example is the very well known commercial SWBC station WNYW, R. New York Worldwide (formerly WRUL). As WRUL, this one worked closely with both R. Liberacion de Guatemala and R. Swan. On April 9 of this year fire completely destroyed WNYW's transmitters at Scituate, Mass. Eight days later they were back on the air using borrowed transmitters at a *secret* site. But, the question goes, how is it possible for a FCC licensed, privately owned U.S. station to operate from a secret site?

**Phoenixes And Pumpkins.** All of this has heavily influenced the recent character of "genuine" underground radio. Instead of copying the local BCB station, the flea-powered bootlegger has been imitating the CIA instead. After R. Americas' 6 MHz station was deleted, a young man appeared on RA's frequency calling himself R. Phoenix (a phoenix is a mythical bird that is reborn from its own ashes). The station was located near the East coast but their claim that it broadcast from a ship in international waters is probably untrue.


Fictitious QSL from the Voice of the Purple Pumpkin though there is a real WJMS.

Of course most would-be UNCLES don't have the nerve to actually go on the air but are content to spread hoax stories about fictitious clandestine voices—and with amazing success. When a certain well-known author boasted in print about having started some years ago the hoax report about a phony CIA-type station on Navassa Island, one of his readers promptly started the hoax all over again through a European DX publication.

On another occasion we received a QSL card from a fictitious station calling itself "WJMS The Voice of the Purple Pumpkin" (absolutely no connection with the legitimate WJMS), which had previously been given some international DX publicity. The card claimed to verify reception on 21,522 kHz at 1200 EST April 15 but had actually been mailed April 5, a full ten days in advance. ■

# Red Herring in Ruskie Hamming.

☐ *Da, you vant to be a Ham, comrade?* Well, you have got to join the local government radio club first. You'll also have to build your own equipment, since you can't buy any —which isn't a bad idea, huh? The rub is that you've got to build and operate on club premises under the watchful, but helpful, eye of a senior member of the club. The club will supply you with parts at a nominal cost and make sure you use them in the "right" way.

When you think you're ready to start building a station, a group of local veteran Hams called the Qualifications Commission will check you out on theory, radio, Lenin and Marx. Once past that hurdle, your application is sent to the Ministry of Communications, Then you've got six months in which to build your station of the *approved* type.

If you complete the station, it's inspected by the club wheels for compliance to the rules specifying a maximum of 200 watts output and various safety considerations.

Operating rules are simple; don't do it for profit, and don't say anything that can't be readily understood by average monitoring personnel, i.e., "it's forbidden to use any codes or jargons that are not standard."

Equipment approved and rules understood, you are at complete liberty to operate phone or CW (no TV, teletype, etc.) on the international ham bands of 28–29.7, 21–21.45, 14–14.35, 7–7.1, and 3.5–3.65 MHz. All in all, maybe we should give three cheers for hamming red, white and blue style.

—Joe Craig ■

By Homer L. Davidson

# free wheeling fixit for solid-state rigs

*With our brains and your brawn, you'll save a heap of dough and soon be an expert in the know putting the fix on that thru-way juke-box!*

■ You too can repair your own transistor auto radio with just three small, low-cost test instruments. For signal tracing, a *noise generator* will inject a signal from base to collector terminal of each stage. Each suspected transistor can be checked for quality, short, open, or leaky condition on a *transistor tester*. And a *VOM* or *VTVM* will pinpoint the actual defective component with in-circuit voltage and resistance measurements. Naturally, a schematic diagram of your particular set is a handy thing to have on hand.

The solid-state auto radio is just a big brother of the transistor pocket radio. Both of these transistor radios use a superhet circuit, but the auto receiver is better constructed, has a higher output power (more volume), and greater fidelity. The block diagram of a typical transistor receiver in Fig. 1 shows all the basic circuit elements.

**Checking The Circuit.** The shielded lead-in from the outside auto antenna plugs directly into a transistorized RF stage. The desired incoming signal is selected by a permeability-tuned coil and coupled to the convertor circuit. Another permeability-tuned coil of the oscillator circuit is found in the leg of the emitter terminal.

Most auto radio converter circuits use only one transistor for oscillator and mixer operation—see Fig. 2. In some AM/FM auto receivers, a separate oscillator and mixer stage is employed in the FM section.

The difference between the frequency of the tuned incoming station and local converter stage is the intermediate frequency of 262 kHz. You will find only a small signal gain in the converter section. Right here the

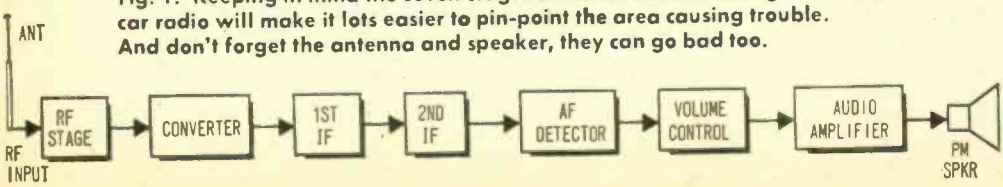



Fig. 1. Keeping in mind the seven stages shown in the block diagram of a typical car radio will make it lots easier to pin-point the area causing trouble. And don't forget the antenna and speaker, they can go bad too.

# free wheeling fixit for solid-state rigs

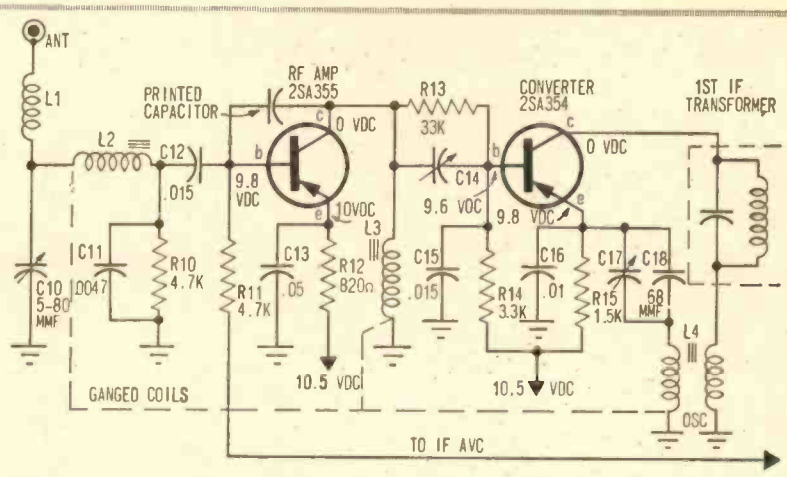



**Fig. 2. RF section of typical auto radio; common defects here will often cause only local station pickup, or no stations on high end of band.**

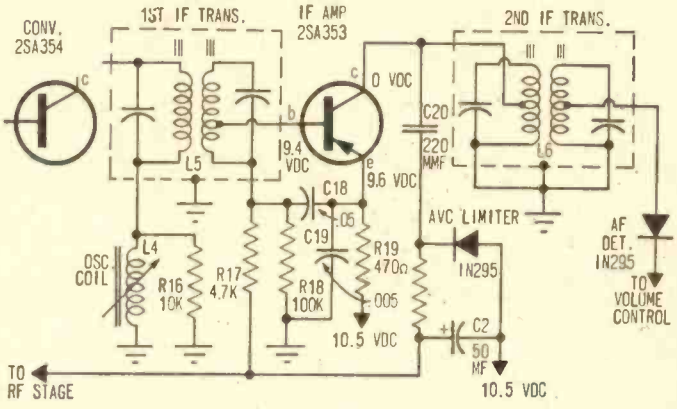



**Fig. 3. Defective IF or detector may result in weak sound. Intermittent reception can usually be traced to defective IF transistor or transformer.**

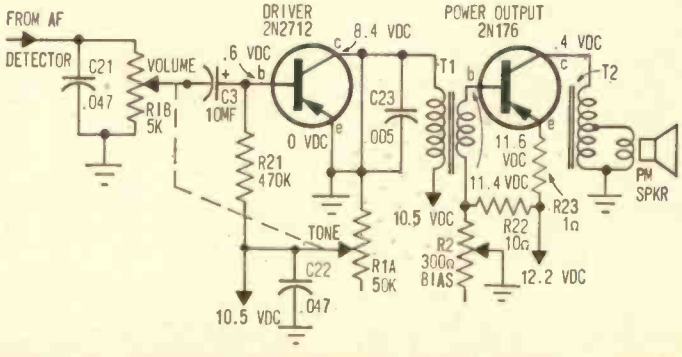



**Fig. 4. Garbled or distorted sound means you should check-out the audio section; defective output transistor is very often the problem.**

portable transistor and auto receiver differ. The standard broadcast radio has an IF of 455 kHz, while the auto receiver IF frequency is 262 kHz. So, if you replace a defective IF transformer, be sure the IF frequency is 262 kHz or you may have a modicum of alignment trouble.

There are two IF amplifier stages with a crystal diode as an AF detector. These two intermediate frequency stages amplify the 262-kHz signal, which is then demodulated to audio frequency with the AF detector—see Fig. 3. At this point we find a volume control in the audio circuit to adjust AF gain.

After the volume control, we find a driver stage with a single power output transistor as shown in Fig. 4. In the large deluxe auto receivers you may find two power transistors in push-pull operation for greater audio poop and higher fidelity.

**Continuity Check.** First, before pulling the auto radio from the car, take a couple of simple continuity checks. Pulling the auto radio, you'll discover, is the hardest job of repairing these receivers. You practically have to stand on your head to loosen the mounting bolts and connecting cables. So a few continuity checks may eliminate the upside-down position and more than a few impolite words.

Take the ohmmeter and check antenna and speaker for continuity. It is possible to remove the auto radio and still find the trouble in the car wiring. Set the ohmmeter on the low-ohms scale and check the continuity of the speaker. Not only should you have a low ohmmeter reading, but each time the leads are touched to the speaker terminals, you should hear a click in the speaker. This click proves the voice coil isn't open.

**Antenna Check.** Now check the auto antenna lead-in. See if there is a leakage between the shield and shielded wire. On the highest ohmmeter scale there should be no reading at all between shield and shielded wire. If water has seeped into the lead-in cable you may get a high resistance reading —see Fig. 5.

Stick one ohmmeter lead through the car window. Clip the other ohmmeter lead to the center terminal of the antenna lead-in. Touch the outside antenna and you should have a dead short showing on the ohmmeter. If not, the lead-in cable is open and must be repaired.

Most broken lead-in wire is found at the male plug-in or at the bottom of the auto

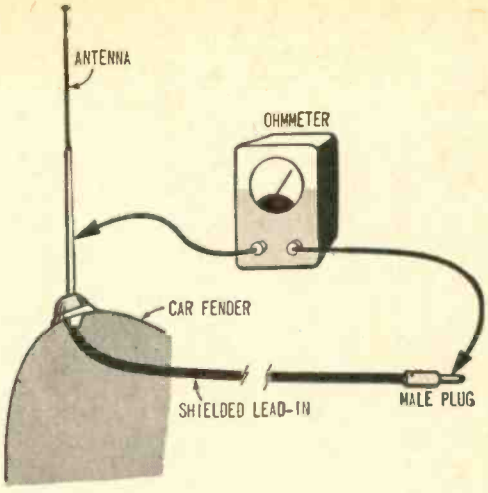



**Fig. 5. Intermittent and noisy reception can be caused by antenna. An ohmmeter is the easiest way to check it for open or short circuit.**

antenna mast. Cut off the male plug and solder a new one in place of it. If the wire is broken or loose at the base of the antenna, forget it, and install a new antenna. It is a lot simpler to replace the antenna and cable since these are supplied as one replacement unit.

You can spot a loose antenna cable connection by wiggling the antenna mast back and forth with ohmmeter attached. While the radio is playing, the antenna mast can be pushed and pulled around to determine whether it's the cause of noisy or intermittent reception. The base of the antenna must be tight for a good ground connection. Generally, this is accomplished by a large star washer that bites into the underside of the car body sheet metal. If the washer is corroded or loose, it is a likely spot for static or intermittent ignition noise to originate.

**Removing The Radio.** Remove the dash mounting nuts around the volume and tuning controls. In some cases, two dash mounting bolts are added to each side of the radio.

After the mounting bolts have been removed, pull out the antenna plug. Remove the A or hot lead going to fuse block or fuse holder. Some auto radios have a separate dial-light lead wired up to the dash lights. Now disconnect the speaker cable. Note where the various plug-in leads and cable attach for later radio replacement.

When troubleshooting the radio chassis, a 12-volt DC bench power supply or battery must be used to power the auto radio. An easy way to get the power is to run a rub-

ber cable between outside car battery and radio. You shouldn't try hooking up a tube/vibrator car radio in this manner. But since most solid-state auto radios pull less than two amps, there's only a small voltage drop between battery and radio.

In hooking up the auto radio, be sure the positive terminal is going to the A or hot lead, and negative terminal to ground or radio chassis. These solid-state auto radios won't operate if the two leads are reversed and in a very short time you can ruin several transistors. Use the voltmeter to check for correct battery terminal polarity. All current American-made cars, except some trucks, use negative-ground radios, while most of the small foreign jobs have a positive-ground chassis on both car and radio.

When the car radio doesn't play after a dead or charged battery, suspect wrong hookup polarity or reversed battery polarity. The auto will perform perfectly, but the radio won't. Sometimes the car battery can be charged up wrong or battery terminals hooked up backwards.

**Dead Solid-State Radio.** A dead auto radio is easy to fix, but a weak or intermittent one is more difficult and takes a little longer. Connect power and hook up the two speaker leads to the dead radio. Turn the radio switch on and check for a click or thumping in the speaker. Try rapidly turning the radio off and on and listen for sounds in the speaker.

If there is a click or thumping sound in the speaker, the output transistor is probably good. This is only a quick output stage check and doesn't mean that this stage isn't weak or defective.

About 75 percent of solid-state auto receiver troubles are located in the power output stage. But before jumping to any conclusions, it's wise to actually locate the defective section or stage. Here's the chance to put the noise generator to use.

**Signal Tracing.** Take the two noise generator leads and attach them directly to the center terminal of the volume control and chassis ground. Starting at this point, you are breaking the radio circuit in half and can quickly determine whether the fault lies in the RF or AF section. If you hear a loud audio tone in the speaker, you can assume the audio section is good. But if the signal is weak or there's no signal at all, the trouble presumably lies between the volume control and the speaker.

Start signal tracing with the noise generator on the base of the AF or driver transistor and chassis. Go from the base to the collector terminal of each transistor stage until the signal is heard in the speaker. You can also start at the base of the output transistor and proceed toward the volume control. Ground the black lead from the noise generator and touch the red lead to transistor terminals.

When starting at the base of the transistor output stage and going towards the volume control, the signal should become stronger. A loss or weak signal will indicate the defective stage. Stop here and take voltage measurements.

Check the voltage on the base, collector, and emitter terminals of the transistors in and next to the defective stage. In most auto receivers you will find the collector terminal at zero or close to ground potential (see Fig. 6), while the base is $-8$ to $-10$ volts negative. The emitter will give the highest negative voltage reading (exact values will be found in the radio's schematic diagram).

The IF, converter, and RF stage can be signal traced in the same manner, using the noise generator. Start at the crystal detector with the volume control turned full up. For instance, if you have a signal at the volume control, you should also have a signal on the opposite side of the detector. Here, though, the audio signal is a lot weaker than on the cathode side of the crystal detector. No

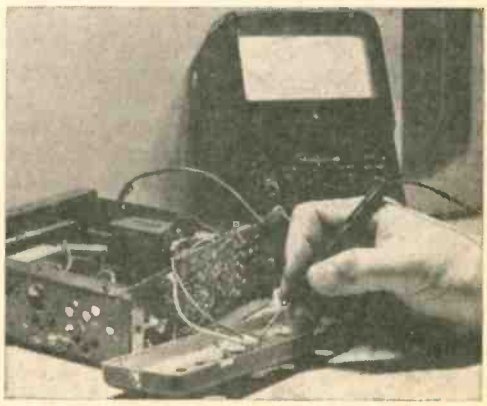


**Fig. 6. Taking voltage checks on output transistor will tell if it's bad. This one uses back cover of radio as heat sink.**

signal at all will show up an open crystal diode, in which case it should be replaced.

Switch the noise generator to RF position. Now go to the collector terminal of the second IF amplifier. Proceed to the base of the same transistor and see if you have a signal. Proceeding toward the antenna, the IF stage should increase the signal volume. The noise generator signal is weaker in the RF and converter stages, but still each stage can be handily signal traced to find the problem. Remember, the point where the signal disappears is the defective stage. Start making voltage readings and transistor tests to locate the defective component.

**Transistor Replacement.** A transistor may become weak, shorted, leaky, or extremely noisy. Though the life of the solid-state device is greater than that of a vacuum tube, it can still go bad. Don't become alarmed if power output transistors feel warm to the touch after an hour of operation. But in case you find a small transistor quite warm, you have located a shorted or leaking transistor. Quickly replace it. Also, check component parts in its circuit. You may find a shorted or leaking capacitor and charred resistors.

Small transistors should be soldered or unsoldered using a pair of long-nose pliers as a heat sink. Remove one terminal at a time. A handy gadget to remove solder around the transistor wires and etched wiring is a medicine syringe. As the soldered joint is heated, the rubber bulb will suck the melted solder into the rubber end. A commercial soldering iron and suction bulb combo is available on the market for removing components from the PC board. Excessive solder can also be removed when heated with a soldering iron and brushed away with a small paint brush.

After the transistor is removed from the PC board, note the position of the collector hole. Use this as a replacement point for all other terminals. Some PC boards have the b, e, and c terminals lettered on the board—see Fig. 7.

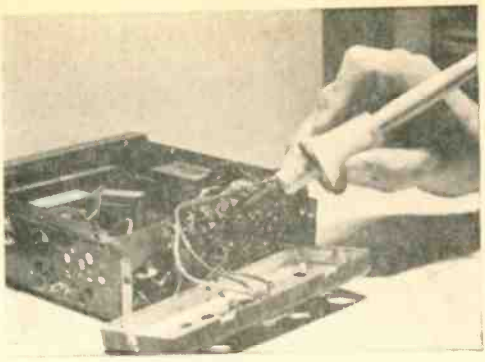


Fig. 8. When soldering on those space-age printed circuit boards, use a small pencil iron so's not to damage the goodies.

Be careful with molded-plastic contained transistors when removing them from PC board. The terminal leads can easily be turned in the plastic body, ruining a good transistor. In some intermittent conditions, the lead has vibrated loose, resulting in intermittent radio reception.

Replace the new transistor in the correct PC board holes. Do not cut off the terminal leads until the radio is performing. But in case the PC board has etched wiring on both sides of the board, as in some auto radios, it is quicker to cut off the defective transistor terminals close to the PC board. Then cut the new transistor leads to correct length and form a loop in each terminal lead. Solder the looped ends over the short, cut-off wires on the PC board—see Fig. 8.

**Power Transistor Replacement.** The power output transistor is found mounted on a metal heat sink or on the outside of the receiver case. Sometimes the power transistor is insulated with a clear piece of insulation material. Take a second glance because the thin piece of insulation should be replaced when mounting a new power transistor—see Figs. 9 and 10. Otherwise, you have a

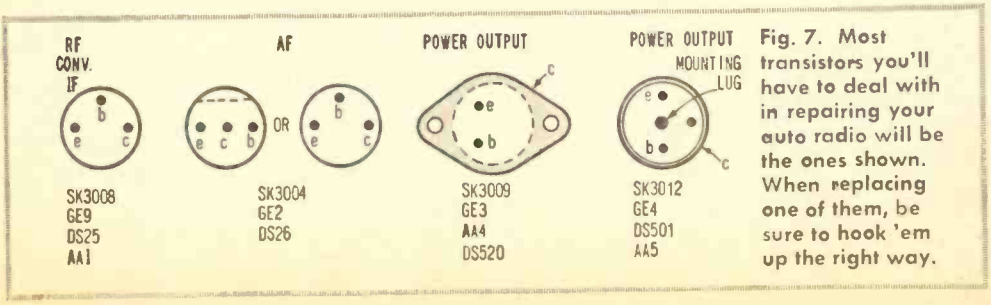



Fig. 7. Most transistors you'll have to deal with in repairing your auto radio will be the ones shown. When replacing one of them, be sure to hook 'em up the right way.

shorted collector circuit and can ruin a new transistor you just installed. (These power transistors are not very cheap, either!)

Be sure to place a layer of silicone grease between insulator and radio chassis. The metal cover of the power transistor is the collector terminal and is bolted against the metal chassis. Remember, power transistor emitter and base terminals are off center on the power transistor and should be lined up in proper position, as shown in Figs. 11 and 12.

If you don't have a transistor tester handy, make a quick resistance check as shown in Fig. 13. Though these resistance measurements vary from transistor to transistor, they can indicate a shorted or high-leakage condition. Use the transistor tester, if handy, for a quick, accurate transistor checkup.

**Garbled, Distorted Music.** Generally, you'll find most garbled and distorted sound troubles stem from troubles in the audio output stages. Go directly to the power output transistor and replace it with a new one. (See the transistor replacement chart in Fig. 14 and 15.) Before turning on the switch, check for burned or overheated resistors in the emitter and base terminals. Double-check the variable bias resistor for erratic or open reading. A defective output transistor can produce motor-boating in the speaker.

Also check the driver transistor in cases of distorted sound. A leaky coupling capacitor or burned bias resistor will have the same symptoms. By taking voltage and resistance readings, you can easily spot the defective stage (see Fig. 4).

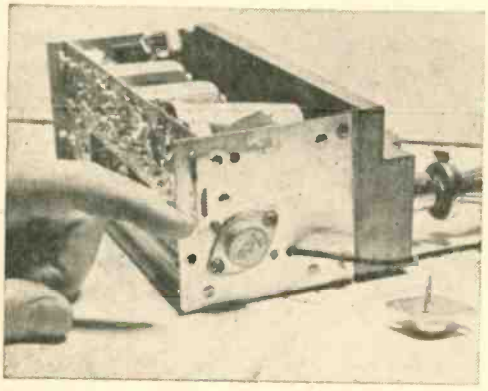


Fig. 9. Power output transistor is the big one, maybe two in push-pull, mounted on side or back of radio chassis.

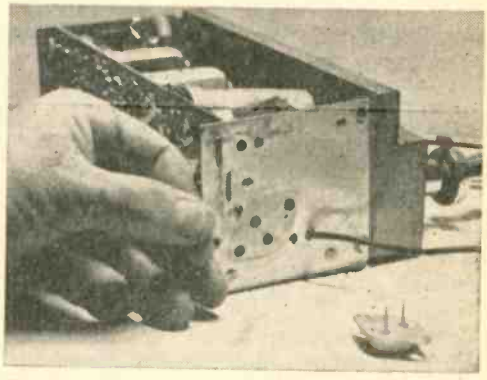


Fig. 10. When removing output transistor, be sure to see if there is a clear plastic insulating wafer between it and chassis.

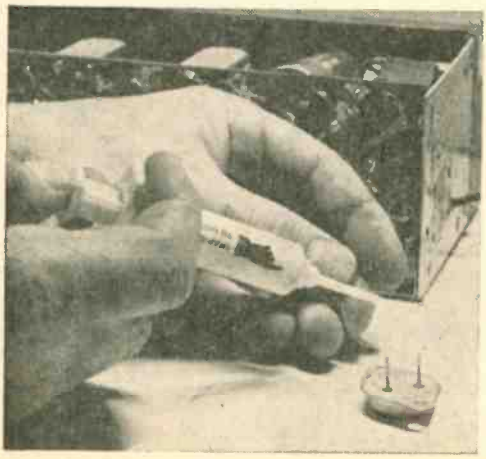


Fig. 11. When putting in a new output transistor, apply silicone grease on insulating wafer.

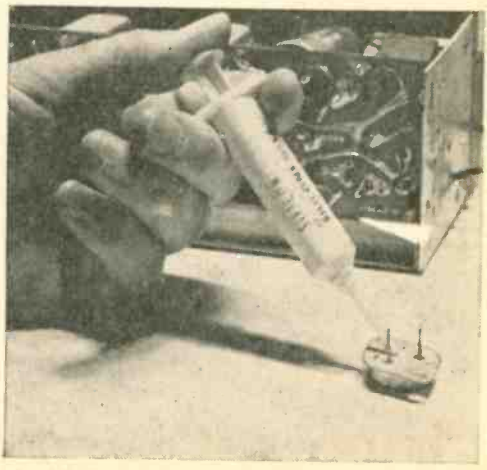


Fig. 12. Put grease on transistor too, it conducts heat from transistor to chassis.

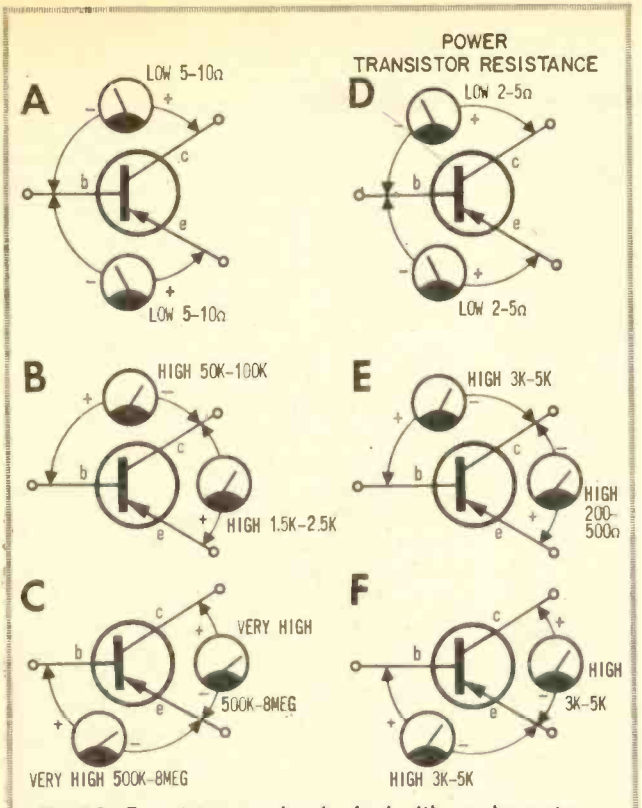



**Fig. 13. Transistors can be checked with an ohmmeter for leaks and shorts as shown in above diagrams.**

The cracked or broken PC board can be found by pushing and prodding around on the board. If possible, hold a light behind the PC board while working on it. Sometimes it's quicker to solder all connections and wiring on the PC board to eliminate an intermittent condition (Fig. 16). A cracked board can be repaired by bridging the break with bare hookup wire (Fig. 17). Don't solder the cracked wiring and expect it to hold, since vibration of the auto will soon break the connection loose. Never use any acid soldering paste when making soldering joints on PC boards.

The IF transformer is another source of intermittent reception. Simply prod or tap the soldered terminals with an insulated tool or twist the IF can while the radio is playing. Use an ohmmeter to check winding continuity (Fig. 18). Generally, the small capacitors in the base of the IF transformer are the intermittent components.

Don't forget the possibility of an intermittent transistor. When the suspected transistor is placed in a transistor tester, tap the transistor and watch the meter. An inconsistent reading will show up an intermittent transistor.

**Noisy Reception.** First, see if the interference is outside of the car radio. Check and see if the noise is from the motor and distributor system by starting up the car, then turning the auto ignition off. Noise in the auto distribution system can be cured with generator and distributor suppressors. Perhaps the interference is picked up from high voltage lines or some other outside electrical disturbance.

Actually, all outside noise can only come in through the 'A' or antenna lead. Remove

**Transistor Replacement Chart**
**Fig. 14.**

| Type | | RCA | G.E. | Delco | Workman |
|---|---|---|---|---|---|
| RF and Converter | AM | SK3008 | GE-9 | DS-25 | AA1 |
| | FM | SK3006 | | | |
| IF Transistors | AM | SK3007 | GE-9 | DS-25 | AA1 |
| | FM | SK3006 | | | AA3 |
| AF Detector | | | IN34 IN60 | | |
| AF Amp or Driver | | SK3004 | GE-2 | DS-26 | |
| Power Output | | SK3009 | GE-3 | DS-520 | AA4 |
| Power Output | | SK30012 | GE-4 | DS-501 | AA5 |

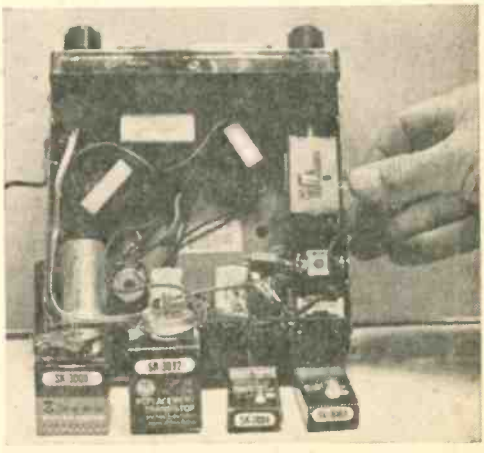


**Fig. 15. When replacing transistors, be sure you get the right one in the right place or you may have problems.**

## free wheeling fixit for solid-state rigs

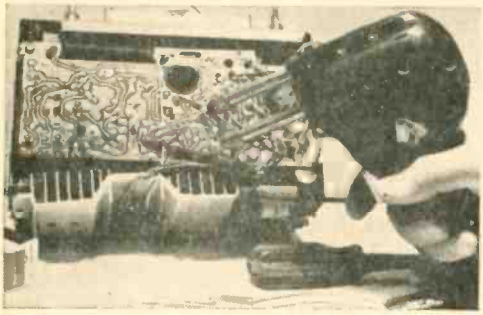


Fig. 16. The fastest way to remedy a hard-to-find cold or intermittent solder joint is to re-solder all the connections.

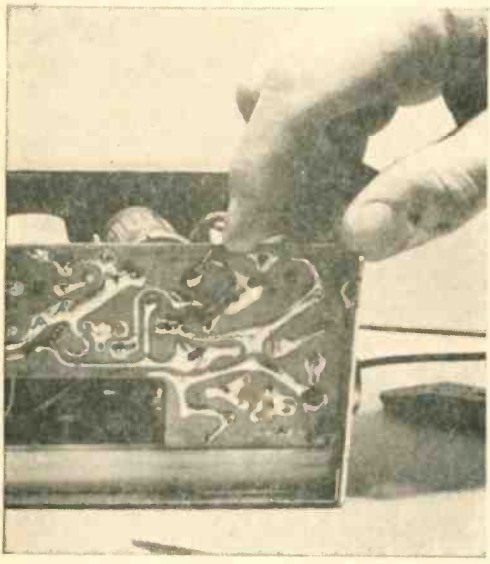


Fig. 17. Finger points to short piece of wire used to bridge broken spot in printed circuit wiring.

the antenna plug to see if the noise is being picked up by the auto antenna. If you still have noise in the radio, place a 0.5 mF capacitor at the fuse connection and ground. Now place a suppressor in the center terminal of the distributor cap. If you still have motor noise, set the plug gap and breaker points closer together. A new set of interference type ignition cables will help finish off the most difficult motor noises.

In case the noise is inside of the radio, replace the audio transistors one at a time. Then replace IF and RF transistors. A partially shorted IF transformer will cause excessive internal noise. When the volume control is turned up and down you will hear if it's dirty or worn. If the control is worn too badly, replace it.

Surprising as it may sound, a transistor can become microphonic, just like a vacuum tube. You will find these microphonic transistors in the RF, converter, and last two audio stages. Microphonic transistors will act up when the car radio is first turned on. In most cases, touching the base terminal of the suspected transistor with a test probe will cause the transistor to snap back to normal operation. If this is the case, replace the transistor.

**Filter Troubles.** Excessive filter hum may be caused by a filter capacitor. When tuning in a broadcast station, a defective filter capacitor can cause a screeching or squealing condition. Sometimes the connecting wires to the capacitor may be pulled too tight and vibration can cause the terminal lugs to snap off inside the aluminum can.

Simply shunt a good 500 mF electrolytic pacitor at the fuse connection and ground. and right away the hum or squealing condition should clear up. Notice that these filter

*(Continued on page 134)*

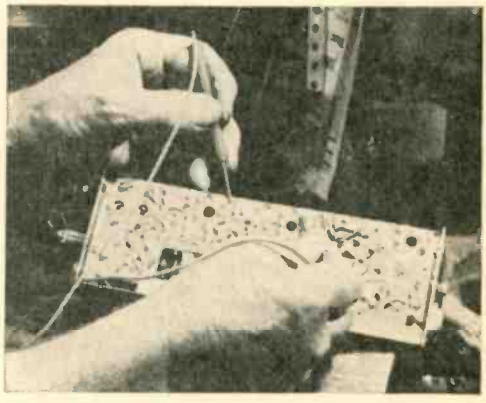


Fig. 18. Quickest way to find imperceptible cracks in printed wiring is by making continuity checks with ohmmeter.

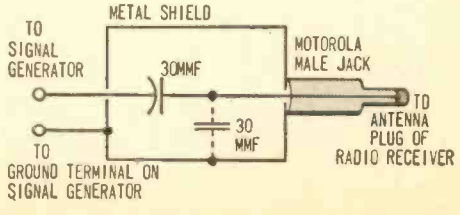
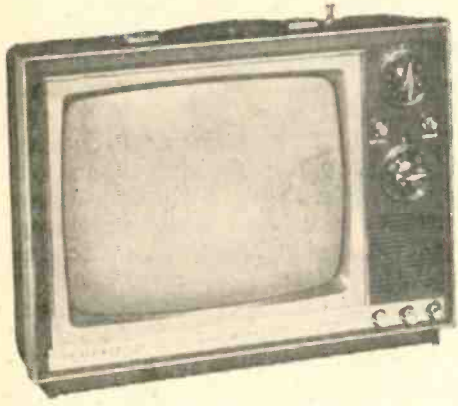



Fig. 19. Dummy antenna is easily constructed and is great aid when performing alignment.

# LAB CHECK



## HEATHKIT GR-104
## 12 in. Solid-State
## Portable TV Receiver

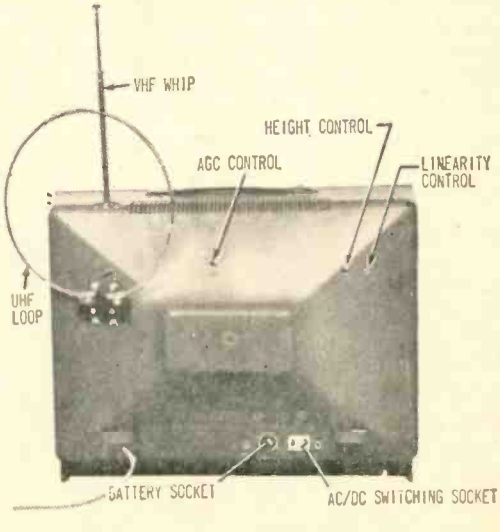
■ If you're like most television viewers, your primary reaction to those small screen battery powered TV receivers has been: "Nice idea, but who needs a five- or seven-in. screen? All the fine detail gets lost." The complaint, of course, is all too true; for unless you feel like pressing your eyeballs against the CRT, it takes at least a 10 in. screen to tell the difference between Jane Russell and Patty Duke.

To give you the full appreciation of picture detail, the new Heath battery powered TV set goes 2 in. more than needed and provides a full 12-in. screen size (overall diagonal measure), essentially the same viewing area as the standard AC-only lightweight portable receivers.

The all solid-state (except for the CRT) Heath GR-104 is basically an AC powered TV set that can also be powered by a rechargeable battery compartment which fits as a base under the basic receiver. Like other small portables, in addition to separate VHF and UHF antenna terminals (for rooftop antenna) it has a built-in whip antenna for VHF which telescopes into the cabinet when not in use, and a UHF loop antenna which connects to the UHF antenna terminals.

**Battery Power.** The Heath GR-104 is designed so that switching between AC and DC operation is semi-automatic. The battery pack, which also contains a charger, connects to the receiver via a plug on the back of the set. If the set's line cord is plugged into a socket—actually two slots—on the back of the set, the receiver's power supply connections are automatically disconnected from the AC power supply components and connected to the battery pack. When the receiver is plugged into the powerlines with the power switch off, the battery is recharged by a self-regulating charger.

**Instant On.** Since the GR-104, except for the CRT, is all solid-state, the operation is essentially instant-on. We say essentially because the instant-on feature depends on whether the receiver is being AC or DC operated. Since the CRT is a tube and has a filament, some warm-up time is required before the screen lights up. Instant-on is obtained by having the CRT filament always idling at a reduced voltage, even though the power switch is off. When the power switch is turned on, full filament voltage is applied




**Rear view of Heath GR-104, showing position of various controls accessible through holes in cover.**

and the picture comes on almost instantly.

When the set is battery powered, the filament voltage is completely removed when the set is off to conserve the battery. When the power switch is turned on, the sound comes on instantly, followed by the picture in about 15 seconds.

**Building The Kit.** Though the GR-104 is basically a kit, critical circuits, the VHF and UHF tuners, are supplied pre-wired and pre-aligned. Most of the remaining circuitry mounts on two printed circuit boards; a handful of components mount directly on the chassis.

The two tuners and the usual controls, volume, contrast, holds, etc., utilize the entire right side of the chassis. Mostly, construction is just a question of applying the mounting nuts and some connecting leads. The remaining circuitry is assembled on a metal frame which, handily, is hinged to the main chassis/front panel. As the two printed circuit boards and the chassis components are wired, the user can swing the frame back and forth while the TV set remains upright.

When you consider that the builder must connect leads to both sides of the printed circuit board and the frame, you easily see the advantage of the hinged layout. It is of particular value when you have to service the set and must follow a lead from one side of the frame to the other.

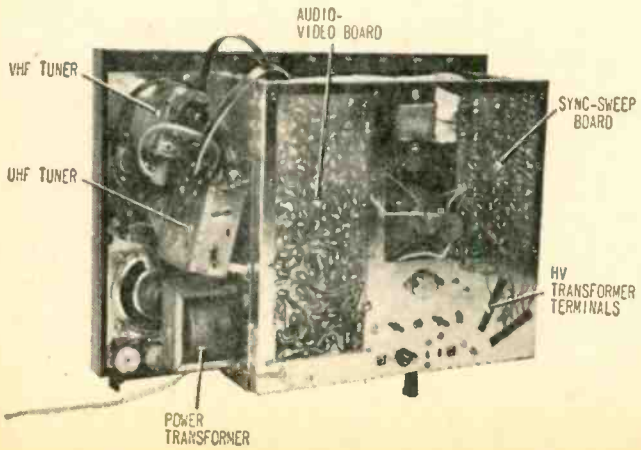
**Circuits, Circuits.** Except for the integrated circuit (IC) used as the sound amplifier and detector, the Heathkit GR-104 appears to be of straightforward design. The input impedance for the UHF and VHF tuners is 300 ohms balanced, with a high pass filter that cuts off below channel 2 in front of the VHF tuner.

The UHF tuner is really a convertor. When the VHF tuner is set to the UHF position, its local oscillator is disabled and the RF amplifier and mixer are tuned to the receiver IF frequency. The VHF tuner is then used for two additional stages of IF amplification. The local oscillator in the UHF tuner heterodynes the UHF signal to the IF frequency and feeds it into the VHF tuner where it is amplified and passed on to the normal IF strip.

The 4.5 MHz intercarrier frequency is stripped off at the video driver and fed to the integrated circuit where it is amplified, detected and passed on to the AF power amplifier. The use of an integrated circuit appears to be of no circuit advantage other than eliminating components which would have to be soldered in place.

**Alignment.** The tuner and the IF coils are pre-aligned. The kit builder need only align the sound transformers, and this is done by simply adjusting the transformer slugs for best sound. The only other adjustments are the vertical height and linearity, the low voltage set, and the AGC. The AGC adjustment proved very critical and normal jouncing given the GR-104 as it is carried from location to location often upset the AGC adjustment.

**How Well It Works.** The GR-104's picture and sound quality—using an outdoor antenna—is similar to that of commercial AC portable sets in the same general price range. However, when using the built-in antennas, sensitivity was a bit less, which is to be expected. But keep in mind that the built-in antenna sensitivity is more than enough as long as you don't expect quality fringe-area reception. The Heathkit GR-104 12 in. portable television set is priced at $119.95. The battery/charger pack is available as an option for an additional $39.95. For additional information and specifications write to Dept. EB, Heath Co., Benton Harbor, Mich. 49022. ■




**VHF and UHF tuners in GR-104 are pre-assembled for easy construction. Remainder of circuitry is on two circuit boards except for controls and a few parts mounted on chassis. Chassis is hinged to case to simplify construction and future servicing.**

# Propagation Forecast

By C. M. Stanbury II

## October/November 1967

■ Although reception on 60 meters is approaching ebb tide, this vital DX band should not be overlooked anywhere it shows up on our forecast chart. Between 0600 and 0900, with emphasis definitely on the earliest part of that period, rare Asians can be bagged. Another rare one you may pull in is Radiodiffusion Nationale Khmere at Phnom-Penh, Cambodia. Frequency varies but at last report it was on 4935 kHz.

While Dxers will now have to work a little harder for them, African stations continue to be available on 60 meters. Watch for the Voice of Kenya on 4915 at 2230 EST. Later, at 0100, R. Ghana signs on this same frequency, so don't be fooled. Both 60 and 90 meters should be hot after sunset.

Here's a tip! If during the evening you note that upper and mid-latitude stations are unusually weak, switch immediately to the medium-wave broadcast band. There you will find that many channels normally dominated by domestic stations are suddenly topped by Latin Americans including some pretty rare DX.

Such an opening will be at its best about an hour after sunset and on the *clear channel* frequencies where only one or two U.S. stations operate at night. Also, many Latin Americans operate between our 10 kHz BCB channels and these *split frequency* transmitters are rare catches. ■

**RADIO-TV EXPERIMENTER PROPAGATION FORECAST**

| Oct./Nov. 1967 LISTENER'S STANDARD TIME | ASIA (except Near East) | EUROPE, NEAR EAST & AFRICA (N. of the Sahara) | AFRICA (S. of the Sahara) | SOUTH PACIFIC | LATIN AMERICA |
|---|---|---|---|---|---|
| 0000-0300 | 25 | 31, 41, 49 | 31, 41 | 25, 31 | 60, 90 |
| 0300-0600 | 25, 31, (41) | 31 | 31, 41 | 41, (60) | 60, 90 |
| 0600-0900 | 19, 25, (60) | 16, 19 | 19 | 25 | 49 |
| 0900-1200 | 16, 19 | 16, 19, (13) | 16, 19 | 25 (poor) | 25, 31 |
| 1200-1500 | Nil | 16, 19, (13) | 16, 19 | Nil | 25 |
| 1500-1800 | 31 | 31 | 31, (60) | 19 | 31, (49) |
| 1800-2100 | 16, 19 | 25, 31 | 25, 31 | 16, 19 | 49, 60, 90 |
| 2100-2400 | 16, 19 | 25, 31 | 25, 41, (60) | 19, 25 | 49, 60, 90 |

To use the table put your finger on the region you want to hear and log, move your finger down until it is alongside the local standard time at which you will be listening and lift your finger. Underneath your pointing digit will be the shortwave band or bands that will give the best DX results. The time in the above propagation prediction table is given in *standard time* at the listener's location which effectively compensates for differences in propagation characteristics between the East and West coasts of North America. However, Asia and the South Pacific stations will generally be received stronger in the West while Europe and Africa will be easier to tune on the East coast. The shortwave bands in brackets are given as second choices. Refer to White's Radio Log for World-Wide Shortwave Broadcast Stations list.

# Once Upon an F Skip

By C. M. Stanbury, II

There's always one 11-meter crackpot who will buck to be CB's top banana. Here's how KMZ7ØØØ slipped his peel!

■ If you think ordinary CB skip is real DX then, brother, you've never run into F skip. When the sunspot count gets near its peak, and that old F layer is just right, you can work all the way down into Central and South America—Venezuela, Colombia, even the brand new Republic of Cozumel.

This little island declared its independence just a month ago, and somehow produced a big enough army to make it stick. No one knows just how it'll fit into the international scene, but already they've applied for admittance to the UN, claimed 43A as their prefix for call letters, and legalized CB DX. So for several weeks, yours truly (KMZ7ØØØ) from his mountain top location has been checking every hour for a 43A. I was going to be the first CBer to QSL Cozumel, or bust. My reputation as King of the CB DXers depended upon it.

And then bang, suddenly on channel 6, I hear him.

"CQ U.S., CQ U.S. for DX contact. This is 43A111 calling." A solid S/9 signal.

A thousands guys just in the state of California alone answered him but I figured my mountain-top signal should make it through. "43A111, this is KMZ7ØØØ. 43A111, how do you read KMZ7ØØØ down in Cozumel?" I switched to receive and held my breath.

He came back immediately. "KMZ7ØØØ, you are very strong down here. How's me?"

"Topping the channel, 111." I could feel my heart pounding. Me, who already had 10 CB countries verified, and a citation from the FCC. "You are my first Cozumel contact, old man. Will you QSL? Over."

Now he was 10 dB over S9. "Sure I'll QSL and you are my first American contact from Cozumel. My power is 100 watts. There's no ceiling on power down here."

I laughed. "Where do I get my visa?" Everybody and his brother kept trying to break in but my mountain top and his power were too much for them.

"Just as soon as Washington recognizes us, we will establish a consulate in Los Angeles where, by the way, I lived a few

*(Continued on page 129)*

# HAM TRAFFIC
DE W7DQS

## USING THE OLD THINK TANK

■ We hams are never lazy. (At least there's not one among us who would admit it.) But we do like to show off when we find a lazy man's solution to a knotty problem. "Use the brain and save the shoe leather," we say with a knowing wink.

As for instance, take this friend of mine who got tired of running up and down the stairs and shouting out the window to a helper when working on his antennas. It was the old story of "communications is our most important problem."

Here he was, peaking up some of the fanciest radio gear made, and using stone-age methods to talk to his helper: shout or wave. My friend got to thinking, 'There must be a better way.' And he was right; there is.

His solution? Radio, naturally! (What else?)

He built a pair of the popular 100-mW walkie-talkies which operate on the 27-MHz Citizens Band. Several of the kit companies have them. He uses them just for those ham-shack tuning and pruning jobs, and he's had a satisfied grin on his face ever since he thought of the idea.

These gadgets are what the FCC calls "low power devices" and can be operated in the 27-MHz band without a license—not to mention without the bother of using call letters every 10 minutes and keeping a log. The range isn't too great, but they don't have to be for his purpose.

You might try this gimmick yourself when you need to communicate with a helper who's out of sight on the roof or up the tower working on the antennas while you're turning knobs in the shack.

If the regular CB stations on the channel cause you too much interference, you can put the units on the 10-meter ham band by changing crystals and retuning the RF stages on the transmit and receive sections.


**Inauguration day for the first Post Office ham club station, WA2AIU, Brooklyn, N. Y. Seated is Postmaster Quigley making the first official transmission—"CQ, CQ, Brooklyn Post Office Amateur Radio Club calling." This marks a first for the Post Office; now, who will be the first ham to get a QSL card verification?**

# HAM TRAFFIC

Once you make this change, however, you'll need to use your ham call letters and keep a log of all transmissions to meet FCC requirements.

**Contest Capers.** Sometimes I think there are as many contests on the ham bands as there are hams, but ingenious contest fans still keep coming up with new ideas. As a case in point, have you run across any of those scientific types from the Rocketdyne Amateur Radio Club out Los Angeles way? Those fellows have dreamed up something really new and different with their Free Style Hi-Jinks Contest.

This swingin' affair has a neat new wrinkle: no matter how much or how little time each club member has for contest operating, everyone has an equal chance to win because the winner is determined on the basis of *one* QSO! Tricky, eh? Here's how Wilbur Wilhelm, WA6OTV, explained the rules to me:

During the contest period, each club member works as many stations as he wants on and band and mode (or combination of bands and modes). He can get a signal report and sign off right away, or can yak for a couple hours if he likes. But he *must* get a QSL card with the word Hi-Jinks written on the card, which also must bear this information:

**a**—QSO day of contest
**b**—GMT hour of contact
**c**—Age of operator worked
**d**—Years operator worked has had present call
**e**—Number of letters in operator's first name
**f**—Number of other ham calls in operator's family.

After the club member receives the QSL, he must make this little calculation:

for age less than 45, $A = 135 - c$.
for age of 45, $A = 0$.
for age over 45, $A = 3c - 135$.

With this collection of data, each club member sits down to figure his score for the contest. For the first contest, which ended last April 15, the scoring formula was: $Score = 3a + 4b + 3d + 7e + 20f + A$. Later contest sessions will use the same basic data, but will have the scoring formula changed around.

## Attention, Ham Shutterbugs!

☐ Are you the kind of ham that snaps pics of gala ham fests, club outings, or even your own ham shack? Why not have your favorite pic published in Ham Traffic? If your photo is selected, we'll send you five rolls of your favorite Kodak film as your reward.

Here's all you do. Just send us a 5 x 7 glossy (or larger) of your photo, plus a paragraph stating—in addition to your own name, call, and address—the time and place the pic was taken, what it's of, and who's who (reading left to right). Send to Ham Traffic, RADIO-TV EXPERIMENTER, 505 Park Ave., New York, N.Y. 10022. Sorry, but no photos can be returned. ■

Each club member submits a score based on any *one* QSL he received from a *single* contact made during the contest.

I thought it was a little squirrelly at first, but then I saw some method to the madness. In a way, I suppose these fellows are poking a little fun at some of the rather pompous contests and certificate chasers we have with us today. At the same time they're sponsoring a contest that will make club members get on the air and really get acquainted with the OMs and YLs they talk to.

And of course the guy who sends the family off to visit the in-laws so he can have peace and quiet to work a contest around the clock still may score last in this contest. The winner, in fact, could be a lucky fellow who made only one contact,

*(Continued on page 133)*

**Using a walkie-talkie to direct your helper adjusting the antenna whilst you fiddle with the rig makes the whole business a cinch.**

# GET YOUR COOL IN A CB CLUB

## Here's the whole story on CB Clubs and how to start your own.

By the Editorial Staff of Radio-TV Experimenter


Numerous CB clubs have been or are being organized throughout the United States, but how many of these clubs are really working for a better Citizens Band? How many are actually hurting the band? You, as a member or prospective member of a CB club, should appoint yourself as a steering committee of one to guide your club in policies that will benefit CBers everywhere.

A CB club should be dedicated to the betterment of the CB band in all of its actions. Often, a few obstinate and undedicated members are hard to overcome, but a well organized club and its officers should encounter no real trouble in dealing with them, especially when they are supported by the membership. This article is devoted to aiding the members of an already organized club and the organizers of a new club.

Admittedly, the major portion of this article is aimed at the forming of a new club. However, if your club started out on the wrong foot, there is no reason why you cannot reorganize—it's almost like starting a new club.

**What A Club Can Do.** Functional activities of a good CB club include coordinating orderly use of the channels in a given area, monitoring, helping members with operating and technical problems, disseminating information on new FCC regulations and opinions, offering advice on CB radio to interested persons in the area, operating a crystal bank, and aiding in any emergency situation which may arise whereby CBers can be of assistance.

**Pre-Organization Planning.** To organize a Citizens Band club requires many hours of pre-meeting work by a handful of interested CBers. These few should have enough interest to go about the entire organizational functions without getting discouraged easily. Interest in a club is the main starting point and at least four persons should be used as a start.

When the thinking stage of an organization has started, a meeting of the small group should be called to talk over the possibility of calling a general meeting. At this meeting a committee should be selected to call upon the CBers in the area and inform them of your intentions to start a club. At the initial

# CB CLUB


meeting with the CBers, it should be pointed out that their support is needed to make this organization a success. They should be informed of the meeting place and that the meeting will start at a certain time (and will start at this hour sharp) regardless of who is there. This shows the prospective member that a partial organization has been started and is off to a good beginning.

Always leave the prospective member with some anxiety to attend the meeting, the best way is to let him know that he will be part of the club and his views are essential and wanted. Explain that no officers have been elected and that you and your buddies are only acting as organizers and not officers.

**Selecting The Meeting Place.** When selecting an initial meeting place, choose a place that is within a comfortable driving distance for all members and also select a place that will not offend anyone. This means, do not select a tavern as there may be some offended by the presence of drinks, do not select a church building as some might take offense if this is not their religion, nor is it a good idea to select a business place as this might give the impression that something is going to be sold.

Good meeting places can be found at Boy Scout headquarters, Grange Halls, Chamber of Commerce buildings, American Legion or fraternal halls, or a good restaurant. Your home would also suffice, but this has its drawbacks if there is a large crowd.

**The First Meeting.** The time of your first general meeting has now come up, but there is still plenty of work to be completed before the meeting. A sign should be placed where everyone can spot it so that there are no lost souls. This leaves no one with the excuse, "I couldn't find the meeting place so I went home."

As the guests arrive, see that they are greeted by one of the organizers to let them know that they are welcome. Make sure that everyone is greeted. To save time in making introductions, it is always a good idea to have a small card and pin handed to everyone so that they can write their name and call numbers on the card and pin it to their coat. Also make sure that everyone entering the building to attend the meeting sign their name, call and address to the register. This provides a list of those who were interested enough to attend.

If you have any literature printed about the meeting, see that it is passed out as the CBers enter. This provides everyone with some knowledge of what is trying to be accomplished and can lead to some interesting ideas and views from those in attendance.

**Order Of Business.** The first order of business should be the introduction of the organizers followed by a call for a motion

**CB get-togethers should be frequent and at regular intervals. Here, officers of the New Mexico CB Organization are shown in one of their executive meetings.**

At a recent CB Jamboree sponsored by the Cape Kennedy CB Club, some of the attending CBers were treated to a visit to the Cape's rocket facilities. Activities like this are well within the realm of the average CB club, all it takes is some planning and hard work.

of an "Acting Chairman." Never take it for granted that one of the original group is the Acting Chairman. If no motion from the floor is introduced for an Acting Chairman, then the motion should come from one of the organizers and call for one of them to head the group at least through the first meeting. The Chairman selected should choose an Acting Recording Secretary who will take notes on the proceedings, these notes are to become a part of the club records.

After the Secretary is selected, the Chairman should explain to the group that the reason the meeting was called is to organize a Citizens Band Club and that the club is needed in this area to band together the many persons with a common interest. It should also be explained during this initial speech that a club is being organized for the betterment of CB in general and not for any purposes other than CB.

A general discussion is bound to follow the speech by the Acting Chairman, and the Secretary should make every effort to record as many suggestions heard from the floor as possible. These suggestions and ideas aid in the making of your club. Everyone who wishes to be heard should be given the chance even if their views are contrary to the views of the majority.

When everyone has had a chance to speak, the Chairman should entertain a motion from the floor that another meeting be called at which time Officers will be nominated and elected, the club named, and the first order of business will commence. After this motion is made the Chairman will close the meeting and thank everyone for their attendance and views.

**After The Meeting.** Now that your intial meeting is over, the work again starts for everyone at the first meeting. The word should be passed that the next meeting is called and that everyone who did not attend the first meeting is welcome and should attend the second meeting. Then each one present at the first meeting should be contacted, by mail, and asked to bring along a friend.

Don't be discouraged if you hear "poor talk" about your meeting, this is bound to happen because as mentioned earlier, you can't please everyone. The best way to defeat this talk is to explain to everyone—not over the air—that the reason for this talk is the reason for a club, an attempt to iron out everyone's CB problems (although some will never be convinced).

You, as an organizer, should stay out of any non-meeting arguments. Tell everyone that the issue will be settled at the meeting. Also see that the second meeting is held within two to three weeks after the initial group meeting. This is essential so that you do not lose the interest of those who attended the first meeting.

**The Second Club Meeting.** The meeting place has been set for the first business meeting of your new CB club and the potential members are starting to arrive. Again, as we did at the first meeting, we have an official of the new club greet everyone at the door. In this case it should be the Acting Chairman we appointed at the last meeting.

When the hour arrives for the meeting to start, the Acting Chairman calls the meeting to order and asks that the Acting Secretary read the minutes of the first meeting of the organization. When the Secretary finishes this, the Chairman entertains a motion for acceptance of the minutes as read if there are no additions or omissions. The first business meeting of any organization differs from all others because of the amount of business that must be taken care of, in this case we

# CB CLUB


will go through the entire procedure for sake of clarification.

Officers for the club must be elected or appointed for the control of the club and club business. This is a must at the early stages so that the function of the club can begin at once. The Acting Chairman will call for nominations for the Office of President or Chairman, whichever you choose to call the head man, and the secretary will prepare ballots to be distributed among the persons present. An immediate election is held and the votes counted and results announced.

Usually a motion is made from the floor to have the Acting Chairman elected by unanimous decision. In this case all must agree or the election takes place.

**Head Man.** After a permanent Chairman or President is chosen, the new head takes over and relieves the acting chairman of all duties.

This procedure is followed by the nomination of the remaining Officers and their election. This is done in a group; not one at a time as in the case of the Chairman. The Officers usually elected are: Vice President, Secretary, Treasurer and Master at Arms. Only after the election of these officers will the regular business take place.

The first order of business should be setting yearly dues, naming the club and appointing a committee to set up your Bylaws.

In coming to a decision of the dues, it should be kept in mind that the higher the dues, the less the membership. This sometimes is an advantage, but in most cases you want all the potential members to be able to join. You can make other less restrictive rules to keep the membership to a level without high dues. This we will discuss later in the article.

After the dues are set, the Secretary and Treasurer should start their drive for full fledged members by having all present sign up for membership. There may be some that do not wish to join at this meeting, but don't question the fact as a few may be a little short of cash. Explain that only members paid in full are eligible for holding Office and working on Committees, this should aid the membership drive at the first meeting.

When everyone has been given the opportunity to sign up, the Chairman should then select a committee of not less than four persons to act as the By-Laws committee. This group should be instructed to meet as many times as needed between this meeting and the next to come up with a proposed set of by-laws. The By-Laws should be for the benefit of the club and all members and be read at the next meeting so that additions or deletions can be made. It will be at least three meetings before your club can accept a good set of By-Laws.

**The Club Name.** The Club name should also be taken up at the first meeting. In doing this, watch that your name does not drift away from the ideas of your organization. For instance you might not want to call a Citizens Band Club, "The Mighty Mites" or "The Blue Angels" because they give no indication of what you are. Very good names are found throughout the United States using the name of the City, County or Area, such as "The Blank County Citizen Band Association" or "The Blank City Radio Club" or even, "The 5 Watters of Blank County." You may already have a number of names in mind.

Now you have a club, a name, and offi-

**Many manufacturers will gladly send exhibits to your club's CB Jamboree. Shown here is the roving E.C.I. Mobilab.**

cers, not to forget the treasury you collected. You are well on your way to being the best club in the nation, let's hope.

**Incorporate?** The question of incorporating your club should be brought up and discussed at an early meeting. You might wish to invite an attorney to be present to answer questions on the pros and cons of such a move. Briefly, the main advantages of incorporating is that it limits the liability of the club to the organization's assets—thereby eliminating any personal responsibility of the members should someone get hurt during a club function.

Incorporating as a non-profit corporation will necessitate your filing special tax forms and conducting the club's business in a prescribed manner. Articles of Constitution and other papers will have to be drawn up by a lawyer, who will file the material in the proper channels. You can expect to spend about $200 in incorporating.

Frankly, most clubs do not incorporate until they have a sizeable membership and the club's program is swinging along with good membership participation. Many existing clubs that have not incorporated are now doing so simply because it is easier to do business as a corporation.

**Polishing Up Your Club.** It is your responsibility to see to it that your club stands out and betters Citizens Band all around.

Conducting meetings in an orderly manner, you will find, is essential to the continued success. Remember no one likes to constantly attend meetings that are all business and no social activities. Start out right and plan all your meetings in advance so that you can relay this plan to the members at the previous meeting. This will encourage the members to bring along friends who may have an interest in the CB club.

To conduct a good meeting is an art and this art can be learned by purchasing a copy of "Roberts Rule of Order, Revised," available at most book stores or the public library. This book explains all you need to know about conducting the proper meeting, and all about proper procedure. Many existing clubs are slowly dying simply because nothing can be accomplished at disorganized meetings.

**Club Activities.** Your club will need activities; this you will find out at the first meeting. This is not solely the problem of a new club. Old clubs will soon die if new activities are not added constantly to pep up the interest of the members. CBers thrive on action, and action they must be given. To give a few examples of activities a very successful east coast Citizen Band club's program serves as a basis for this portion of the article.

**Club meetings need not be all business. One club celebrated their first birthday with a huge cake, a dance, and an assortment of other festivities.**

The President should form an activity committee, which will be made up of three or four good members. These members will arrange all of the activities other than meeting nights. It is their duty to see that the activities are for all and not just a few members. Activities such as jamborees, picnics, parties, outdoor meets and Civil Defense participation come under this committee.

When planning an activity, plan well in advance so that every member has a chance to make plans to attend. A successful outing requires months of planning while a picnic can have as little as a week of planning.

The activity committee should also contact the local Civil Defense office and other law enforcement agencies in the area and let them know that you have a radio club at their disposal in case of need. You can work out various drills with the various agencies approached.

Parties are a favorite with CBers and should be well planned so that the wife and husband can both attend. "Stag" parties are always a failure because the Mrs. has to stay home. Besides, you will find that many members find "stag" parties in bad taste (while others will jump at the chance to attend). Always keep the cost of a party down to where it will not be a burden on the treasury or the member who attends. A fee of one or two dollars per couple always brings out a crowd. The refreshments can be simple if the activities at the party are fun packed.

**Club Papers.** Eventually your club will want to publish a news-letter for the mem-

# CB CLUB

**One New Mexico CB organization outfitted a van as a complete mobile CB communications control center.**

bers—this is a splendid idea but takes a lot of work. The major portion of the work is getting someone with some time and talent to sit down and publish it. It need not be more than a mimeographed sheet at first; later on you can investigate the costs involved in varityping the paper and having it printed via the offset process (which is generally less expensive for small jobs than "letterpress").

Items for a club paper are easily furnished by members and should include a "chit-chat" column, technical tips, reports of club activities, personality profiles and ads! Yes, ads! New clubs always have a lot to say. Clubs existing for some time should dream up activities that make good reading when reported.

You would be surprised at the number of local CB dealers who will be anxious to advertise in a club paper. Your rates should be based upon the number of papers you will distribute. A good start is to figure your advertising at 5¢ per paper for a quarter of a page. Therefore, if you will distribute 100 papers, a ¼-page ad would cost $5.00, with "rate breaks" to let ½-page go for $7.50 and a full page for $10.00.

By no means limit the distribution of your paper to members, send one to all CBers in your area. It will keep them informed of the club's activities and may eventually bring them into the ranks.

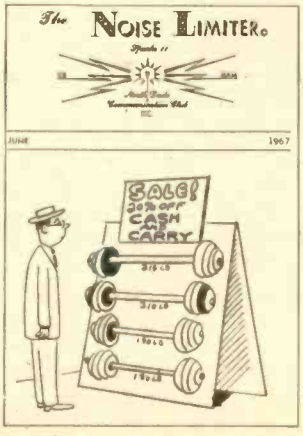
Actually, the club paper should easily pay for itself on the first issue and even surpass its cost in subsequent issues. The club can put this money in the treasury—and save it for a day when a worthwhile project calls for some extra loot.

What ever you do, do it with the best of your ability and you'll seldom go wrong. In order to keep the activities going with fresh ideas, it is suggested that the Activity Committee be refreshed with new members every two months. Variety is the spice of a CB club.

**Pitfalls.** Getting back to conducting a proper meeting, let's list a few standing rules. These rules are eventually found by the trials and tribulations of many existing clubs.

1. Always start a meeting on time.
2. Let everyone have their say as long as they are in order.
3. The President or presiding officer should never let a meeting get out of control.
4. Keep your meeting as brief as possible without omitting any business.
5. Invite speakers or have movies at as many meetings as possible to retain interest.

*(Continued on page 132)*




**Here's what the North Dade Communications Club puts out in the way of a dandy news letter to keep local CBers informed.**

By Francois Markette

# R for W-Ts

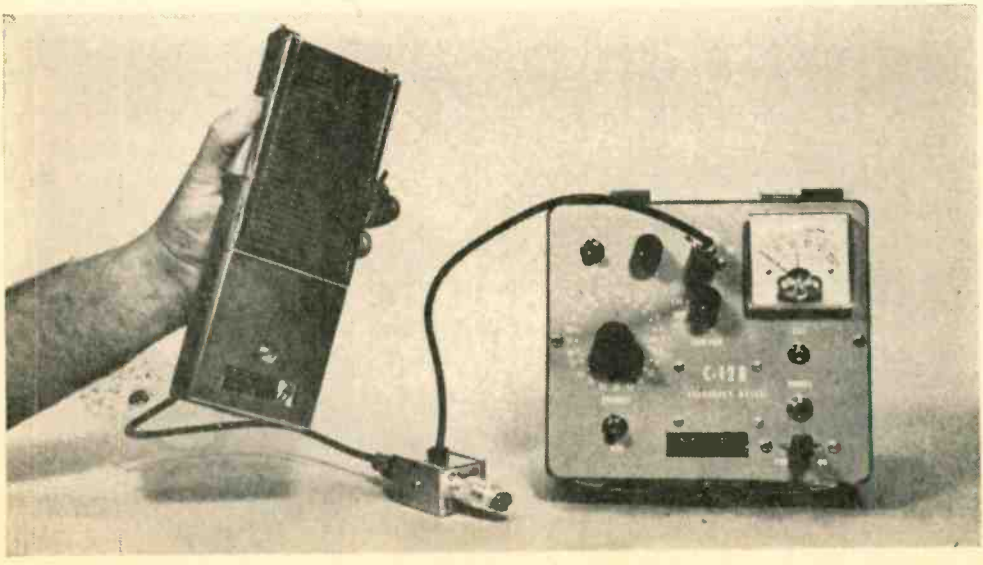
**Inoperative walkie-talkies aren't the easiest thing to repair, but first aid is often all that's needed**

■ At first glance a disabled CB walkie-talkie (W-T) might appear a formidable service job. With the parts jammed together cheek-to jowl it seems almost impossible to get at the test points with test prods, let alone with a soldering iron. In actual practice, however, W-T repairs rarely get deep into the circuitry; more often than not it is the easily accessible components that are the culprits.

As ridiculous as it might sound, many W-T problems are often nothing more than "plugging in the line cord." Yes, we all know of the instance where the little woman called a TV technician when the problem was that someone had pulled the line-cord from the AC receptacle. The very same things happen with W-Ts; non-technical users often assume a W-T is defective when all it needs is a new set of batteries.

**Begin With The Batteries.** First step in any W-T service job is to determine if the batteries are okay. Turn the power switch on and then connect your voltmeter across the battery. If the battery indicates *good*, activate the transmit switch and again note the meter reading. If the battery voltage falls below the minimum usable value when the transmitter is on, the batteries are defective.

The reason the batteries must be checked under the heaviest load (which is during transmit) is because even a "dead" battery



Because of their high selectivity, high-performance transceivers should always be checked with a frequency meter. Test instrument in photo above is an International Crystal C-12B.

will indicate normal when there is no load; it is the relatively high internal resistance of a defective battery that causes the terminal voltage to drop under load.

As a general rule a W-T should work down to half the rated battery voltage. For example, if the W-T uses a 9-volt battery, it should operate down to 4.5 volts (though some W-Ts will not work if the battery voltage falls below ⅓ rated voltage).

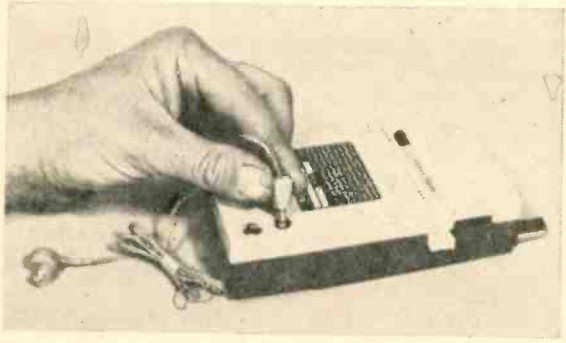
**Pinpoint The Section.** Next step is to check which section—the receiver, transmitter, or amplifier/modulator—is defective. The best piece of service gear for this job is a standard 5-watt CB transceiver. Transmit a signal from the transceiver and try to receive it on the W-T. If the W-T cannot receive the signal the amplifier/modulator or receive section is at fault. Next, try using the W-T to transmit. If it works, this means the receive section is defective.

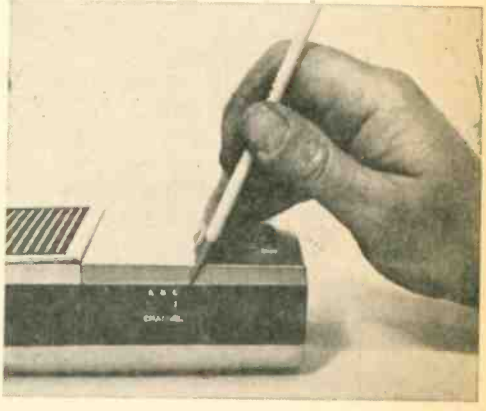
If the W-T can't receive and can transmit only a carrier (no modulation), look for the difficulty in the circuit common to both the transmitter and receiver—the modulator, including the speaker. Easiest way to check the speaker is to simply unsolder one speaker lead and then clip a second speaker across the W-T's speaker leads (see illustration).

If you want to check the entire modulator/speaker system, feed an AF tone into the modulator (across the volume-control terminals) from a standard AF signal generator or from the AF output of a CB service set. In a pinch, you can even connect the output of an AM radio across the W-T's volume control.

**Transistors And Switches.** If no amount of checks can get a signal in or out of the W-T, make a quick-and-dirty transistor check *before* you start unsoldering transistors. Luckily, when transistors fail they usually short-circuit, and the resultant heavy current flow causes the transistors to run relatively hot. Simply place your fingers on each transistor; the hot one can be considered defective. If none are hot, look for other troubles before you tear the printed-circuit board apart.

A common source of intermittent operation and complete failure is the receiver/transmit (transfer) switch. They are usually small, and a single speck of dirt is all it takes to lift a contact. Insert an extension tube in the nozzle of a pressure can of contact cleaner and literally blast the cleaner into the switch, constantly operating the switch as you spray. Then pray it does the job, for replacement of a multi-contact transfer switch is a time-consuming, difficult procedure.





Common source of "no sound" is flimsy headphone jack (above) which might fail to make normal/through-speaker connection; remedy is to clean or replace jack in effort to increase spring tension. At right, non-technical users often assume W-T is defective when selector has been accidentally moved to unused channel.

**The Big Jobs.** High performance W-Ts often require nothing more than frequency checks to restore lost performance. Whether it's a 100-mW or 5-watt W-T, a high-performance model is as selective as a standard 5-watt, high-performance transceiver. Should the transmit crystal drift just slightly off-frequency, it would move the out signal outside the passband of the companion high-performance W-T. Similarly, if the receive crystal drifted the W-T would receive only the sidebands, or no signal, from a companion transmitting W-T.

Best way to check high performance W-Ts, then, is with a frequency meter, providing you are certain the W-Ts *can* transmit and receive.

First step in checking the frequency of a high-performance W-T is to make certain the transmitter is on-frequency. (This is done best by checking the deviation from center-channel.) If the transmitter is on-frequency but one or both cannot receive each other, the difficulty lies in the receiver section, which is simply not tuned to the transmit frequency.

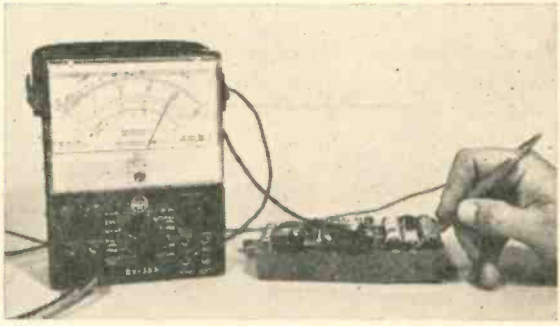
Remember that W-Ts rated above 100 mW must conform to Class D standards; 100 mW and under units need not. As a result, the little fellows are often considerably off the center-channel frequency. If the frequency-meter shows such to be the case, the receiver must be retuned to the transmit frequency, or vice-versa. Often, just normal component aging can effectively shift the frequency of either the transmit or receive crystal, or possibly both.

While a frequency-meter can be used to feed a signal into a receiver, there is really no way to easily determine if the receiver is tuned exactly to the test signal. It's therefore advisable to make certain the transmitter is on-frequency and then use it as the signal source to check the companion W-T.

High performance W-Ts should also be checked for RF power output if an external antenna jack is provided. Using a fresh set of batteries, or a fully recharged NiCad battery, connect a power meter to the external antenna jack and key the transmitter. The W-Ts power output should be at least 50% of the rated power input, i.e., 2.5 watts output for 5 watts input.

Just as a weak crystal can degrade receiver sensitivity, a weak crystal can result in reduced RF power output, even though the crystal is within 0.005% tolerance. Therefore, if power-output measurements are a bit on the low side, try replacing the transmit crystal before tearing into the wiring. This you can do by using the crystal(s) from the companion W-T.

**Oddball Defects.** NiCad-powered W-Ts can't readily have their batteries tested with a voltmeter because "dead" battery voltage is generally only a few tenths of a volt below



**Corrosion on battery-holder terminals leads to intermittent operation, particularly if W-T is used around salt water; best cure is to sand off corrosion with fine sandpaper. Above, always check batteries under load, since output voltage can vary greatly. Batteries here registered 9V with no load, 8V on receive, 4V on transmit.**

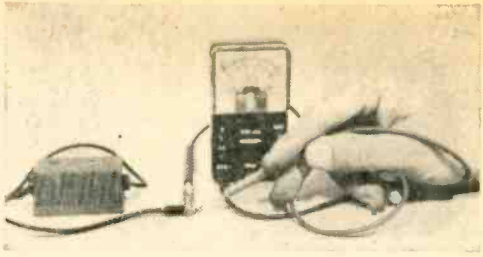
## RX FOR W-Ts

"normal." If a NiCad-powered W-T gives poor receive and transmit performance, check that the battery charger is delivering the rated output voltage.

If it checks out okay, connect a milliammeter in series between the charger and the NiCad battery to see if the charger is delivering the rated charging current. If both current and voltage check out, it's time to suspect the battery. Contrary to popular belief NiCads don't last forever; instead, they have a definite rated life, and at some time will require replacement. (A NiCad's life is generally in terms of "recharge cycles" rather than time. A NiCad should be good for at least 500 to 1000 "cycles.")

W-Ts with built-in AM radios often cause confusion because the radio works while CB performance is low or nil. Keep in mind that the AM radio's IF amplifier and AF amplifier are common to the CB circuits, so if the AM radio works you can be certain the trouble is not in the IF or AF amplifiers or modulator (AF power amplifier). Similarly, if CB reception is distorted but the AM radio is clean, the speaker isn't defective.

Just as with a receive/transmit switch, the AM/CB changeover switch is easily fouled by dirt. The remedy is the same: simply "blast" the changeover switch with contact cleaner. This will often restore "lost" CB performance on an AM/CB W-T.



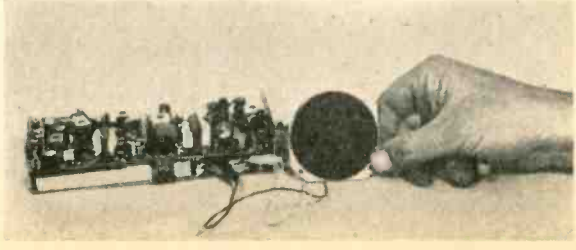
Even battery chargers have been to blame for W-T failures. Though indicator lamp on the charger above lit, charger was defective.

Though the above comprise only the easiest W-T checks to make, most W-T problems appear in the "accessory" components, not in the basic electronics. Of course, if you finally trace the trouble to a defective component or circuit on the printed circuit board you will have to get in there with your soldering iron and troubleshooting skill.

Always keep in mind that a W-T is basically no different than any other solid-state transceiver—it's just smaller. For this reason, standard troubleshooting techniques should be used on the W-T circuits. In general, however, it is dirt, water, and shocks from rough handling that cause most W-T problems—not electrical breakdowns. And most often just a cleaning, speaker or crystal replacement is all that's needed to put a W-T back in working order. ■

Receive/transmit switch is common cause of intermittent operation; cure is to attach injector tube to nozzle of pressurized contact cleaner and blast out dirt while simultaneously rotating switch shaft.

Easiest way to check W-T's speaker is to disconnect one speaker lead, then jumper in replacement speaker. If replacement results in improved sound, original is defective.



## Volume 48, Part 2

# WHITE'S RADIO LOG

**An up-to-date Broadcasting Directory of North American AM, FM and TV Stations. Including a Special Section on World-Wide Shortwave Stations**

This is the second part of *White's Radio Log*, published in three parts twice each year. This format permits the Editors of RADIO-TV EXPERIMENTER to offer its readers two complete volumes of *White's Radio Log* each year, while increasing the scope of the *Log* and inserting station changes as they occur.

**In this issue** of *White's Radio Log* we have included the following listings: U. S. AM Stations by Location, U. S. FM Stations by States, Canadian AM Stations by Location, Canadian FM Stations by Location, and the expanded, up-to-date World-Wide Shortwave Section.

In the December/January issue of RADIO-TV EXPERIMENTER, the *Log* will contain the following listings: U. S. AM Stations by Call Letters, U. S. FM Stations by Call Letters, Canadian AM Stations by Call Letters, Canadian FM Stations by Call Letters, and the expanded World-Wide Shortwave Section.

**In the event** you missed any part of the *Log* published earlier this year, you will have a complete copy of *White's Radio Log* by collecting any three consecutive issues of RADIO-TV EXPERIMENTER during 1967. The three consecutive issues comprise a complete volume of *White's Radio Log* that offers complete listings with last minute station change data that cannot be offered in any other magazine or book. If you are a broadcast band DXer, FM station logger, like to photograph distant TV test patterns, or tune the shortwave bands, you will find *White's Radio Log* an unbeatable reference.

### QUICK REFERENCE INDEX

WHITE'S

# RADIO LOG

# U. S. AM Stations by Location

| Location | C.L. | kHz |
|---|---|---|
| Abbeville, Ala. | WARI | 1480 |
| Abbeville, La. | KROF | 960 |
| Abbeville, S.C. | WABV | 1590 |
| Aberdeen, Md. | WAMD | 970 |
| Aberdeen, Miss. | WMPA | 1240 |
| Aberdeen, S.Dak. | KSDN | 930 |
| | KXRO | 1320 |
| Aberdeen, Wash. | KBKW | 1450 |
| Abilene, Tex. | KRBC | 1470 |
| | KCAD | 1560 |
| | KNIT | 1280 |
| | KWKC | 1340 |
| Abilene, Kansas | KABI | 250- |
| Abingdon, Va. | WBBI | 1230 |
| Ada, Okla. | KADA | 1230 |
| Adel, Ga. | WAAG | 1470 |
| Adrian, Mich. | WABJ | 1490 |
| Agana, Guam | KUAM | 610 |
| Aguadilla, P.R. | WABA | 850 |
| | WGRF | 1340 |
| Ahoskie, N.C. | WRCS | 970 |
| Aiken, S.C. | WAKN | 990 |
| | WLOW | 1300 |
| Aitkin, Minn. | KKIN | 1000 |
| Akron, Ohio | WAKR | 1590 |
| | WSLR | 1350 |
| | WCUE | 1150 |
| | WHLO | 640 |
| Alamogordo, N.M. | KALG | 1230 |
| | KINN | 1270 |
| Alamo Heights, Tex. | KORY | 1110 |
| Alamosa, Colo. | KGIW | 1450 |
| Albany, Ga. | WALG | 1590 |
| | WFAZ | 960 |
| | WLYB | 1250 |
| | WGPC | 1450 |
| | WJAZ | 960 |
| Albany, Ky. | WANY | 1390 |
| Albany, Minn. | KASM | 1150 |
| Albany, N.Y. | WABY | 1400 |
| | WOKO | 1460 |
| | WPTR | 1540 |
| | WROW | 590 |
| Albany, Oreg. | KWIL | 790 |
| | KRKT | 990 |
| Albemarle, N.C. | WABZ | 1010 |
| | WZKY | 1580 |
| Albert Lea, Minn. | KATE | 1450 |
| Albertville, Ala. | WAVU | 630 |
| Albion, Mich. | WALM | 1260 |
| Albuquerque, N.M. | KABQ | 1350 |
| | KDEF | 1150 |
| | KGGM | 610 |
| | KHIP | 1520 |
| | KOB | 770 |
| | KQEO | 920 |
| | KARA | 1310 |
| | KVOO | 730 |
| | KLOS | 1580 |
| | KRZY | 1450 |
| Alcoa, Tenn. | WEAG | 1470 |
| Alexander City, Ala. | WRFS | 1050 |
| Alexandria, La. | KALB | 580 |
| | KDBS | 1410 |
| | KSYL | 970 |
| Alexandria, Minn. | KXRA | 1490 |
| Alexandria, Va. | WPIK | 730 |
| Algona, Iowa | KLGA | 1600 |
| Alice, Tex. | KOPY | 1070 |
| Alisal, Cal. | KRSA | 1570 |
| Allendale, S.C. | WDOG | 1300 |
| Allentown, Pa. | WHOL | 1600 |
| | WAEB | 790 |
| | WKAP | 1320 |
| | WSAN | 1470 |
| Alliance, Nebr. | KCOW | 1400 |
| Alliance, Ohio | WFAH | 1310 |
| Alisal, Calif. | KRSA | 1570 |
| Alma, Ga. | WCQS | 1400 |
| Alma, Mich. | WFYC | 1280 |
| Alpena Township, Mich. | WATZ | 1450 |
| Alpine, Tex. | KVLF | 1240 |
| Altavista, Va. | WKDE | 1000 |
| Alton, Ill. | WOKZ | 1570 |
| Altona, Man. | CFAM | 1290 |
| Altoona, Pa. | WFBG | 1290 |
| | WRTA | 1240 |
| | WVAM | 1430 |
| Alturas, Calif. | KCNO | 570 |
| Altus, Okla. | KWHW | 1450 |
| Alva, Okla. | KALV | 1430 |
| Amarillo, Tex. | KVII | 1010 |
| | KPUR | 1440 |
| | KGNC | 710 |
| | KIXZ | 940 |
| | KRAY | 1360 |
| | KZIP | 1310 |
| Ambridge, Pa. | WMBA | 1460 |
| Americus, Ga. | WDEC | 1290 |
| | WISK | 1390 |
| Ames, Iowa | KASI | 1430 |
| | WOI | 640 |
| Amherst, Mass. | WTTT | 1430 |
| Amherst, N.S. | CKOH | 1400 |
| Amherst, N.Y. | WUFO | 1080 |
| Amite, La. | WABL | 1570 |
| Amory, Miss. | WAMY | 1580 |
| Amsterdam, N.Y. | WAFS | 1570 |
| | WCSS | 1490 |
| Anaconda, Mont. | KANA | 580 |
| Anacortes, Wash. | KAGT | 1340 |
| Anaheim, Calif. | KEZY | 1190 |
| Anchorage, Alaska | KBYR | 1270 |
| | KFQD | 750 |
| | KENI | 550 |
| Andalusia, Ala. | WCTA | 920 |
| | WAAO | 1530 |
| Anderson, Cal. | KMRE | 1580 |
| Anderson, Ind. | WHUT | 1470 |
| | WHBU | 1240 |
| Anderson, S.C. | WAIM | 1230 |
| | WANS | 1280 |
| Andrews, Tex. | KACT | 1360 |
| Annapolis, Md. | WANN | 1190 |
| | WYRE | 810 |
| | WNAV | 1430 |
| Ann Arbor, Mich. | WAAM | 1600 |
| | WPAG | 1050 |
| Anna, Ill. | WRAJ | 1440 |
| Anniston, Ala. | WANA | 1490 |
| | WDNG | 1450 |
| | WHMA | 1390 |
| Annville-Cleona, Pa. | WAHT | 1510 |
| Anoka, Minn. | KANO | 1470 |
| Ansonia, Conn. | WADS | 690 |
| Antigo, Wis. | WATK | 900 |
| Apollo, Pa. | WAVL | 910 |
| Apopka, Fla. | WVCF | 1520 |
| Apple Valley, Cal. | KAVR | 960 |
| Appleton, Wis. | WAPL | 1570 |
| | WHBY | 1230 |
| Aquadilla, P. R. | WUNA | 1340 |
| Arab, Ala. | WRAB | 1380 |
| Arcadia, Fla. | WAPG | 1480 |
| Arcata, Calif. | KENL | 1340 |
| | KATA | 1340 |
| Ardmore, Okla. | KVSO | 1240 |
| Ardmore, Tenn. | WSLV | 1520 |
| Arecibo, P.R. | WCMN | 1280 |
| | WMIA | 1070 |
| | WNIK | 1230 |
| Argentia, Nfld. | VOUS | 1480 |
| Arkadelphia, Ark. | KVRC | 1240 |
| Arkan. City, Kans. | KSOK | 1280 |
| Arlington, Fla. | WDCJ | 1220 |
| Arlington, Va. | WAVA | 780 |
| | WEAM | 1390 |
| Arroyo Grande, Calif. | KOAG | 1280 |
| Artesia, N.M. | KSVP | 990 |
| Arvada, Colo. | KQXI | 1550 |
| Ashburn, Ga. | WMES | 1570 |
| Asbury Park, N.J. | WJLK | 1310 |
| Asbury Park-Eatontown, N. J. | WHTG | 1410 |
| Asheboro, N.C. | WGWR | 1260 |
| Asheville, N.C. | WISE | 1310 |
| | WLOS | 1380 |
| | WSKY | 1230 |
| | WWNC | 570 |
| Ashland, Ky. | WCMI | 1340 |
| | WTCR | 1420 |
| Ashland, Ohio | WNCO | 1340 |
| Ashland, Oreg. | KWIN | 1400 |
| | KRVC | 1350 |
| Ashland, Va. | WIVE | 1430 |
| Ashland, Wis. | WATW | 1400 |
| Ashtabula, Ohio | WAQI | 1600 |
| | WREO | 970 |
| Aspen, Colo. | KSNO | 1260 |
| Astoria, Oreg. | KAST | 1370 |
| | KVAS | 1230 |
| Atchison, Kans. | KARE | 1470 |
| Athens, Ga. | WGAU | 1340 |
| | WDOL | 1470 |
| | WKAC | 1080 |
| | WRFC | 960 |
| | KQXI | 790 |
| Athens, Ohio | WATH | 970 |
| | WOUB | 1340 |
| Athens, Tenn. | WLAR | 1450 |
| | WYXI | 1390 |
| Athens, Tex. | KBUD | 1410 |
| Atlanta, Ga. | WPLO | 590 |
| | WIGO | 1340 |
| | WAOK | 1380 |
| | WERD | 860 |
| | WGKA | 1110 |
| | WGST | 920 |
| | WIIN | 970 |
| | WQXI | 790 |
| | WSB | 750 |
| | WYZE | 1480 |
| Atlanta-Decatur, Ga. | WGUN | 1010 |
| Atlanta, Tex. | KALT | 900 |
| Atlantic, Iowa | KJAN | 1220 |
| Atlantic Beach, Fla. | WKTX | 1600 |
| Atlantic City, N.J. | WFPG | 1450 |
| | WLOB | 1490 |
| | WMID | 1340 |
| Atmore, Ala. | WATM | 1590 |
| Atoka, Okla. | KEOR | 1110 |
| Attleboro, Mass. | WARA | 1320 |
| Auburn, Ala. | WAUD | 1230 |
| Auburn, Calif. | KAHI | 950 |
| Auburn, N.Y. | WMBO | 1340 |
| | WAUB | 1590 |
| Auburn, Wash. | KASY | 1220 |
| Auburndale, Fla. | WTWB | 1570 |
| Auburndale, Wis. | WLBL | 930 |
| Augusta, Ga. | WAUG | 1050 |
| | WBBQ | 1340 |
| | WBIA | 1230 |
| | WGAC | 580 |
| | WRDW | 1480 |
| | WTHB | 1550 |
| Augusta, Maine | WRDO | 1400 |
| | WFAU | 1340 |
| Aurora, Colo. | KOSI | 1430 |
| Aurora, Ill. | WMRO | 1280 |
| | WKKD | 1580 |
| Aurora, Mo. | KSWM | 940 |
| Austin, Minn. | KAUS | 1480 |
| | KQAQ | 970 |
| Austin, Tex. | KNOW | 1490 |
| | KHFI | 970 |
| | KTBC | 590 |
| | KOKE | 1370 |
| | KVET | 1300 |
| Avalon, Cal. | KBIG | 740 |
| Avondale Estates, Ga. | WAVO | 1420 |
| Aztec, N. Mex. | KHAP | 1340 |
| Babylon, N.Y. | WBAB | 1440 |
| | WGLI | 1290 |
| Bad Axe, Mich. | WLEW | 1340 |
| Bainbridge, Ga. | WMGR | 930 |
| | WAZA | 1360 |
| Baker, Mont. | KFLN | 960 |
| Baker, Oreg. | KBKR | 1490 |
| Bakersfield, Calif. | KAFY | 550 |
| | KBIS | 970 |
| | KERN | 1410 |
| | KGEE | 1230 |
| | KUZZ | 800 |
| | KLYD | 1350 |
| | KWAC | 1490 |
| | KPMC | 1560 |
| Bellingham, Wash. | KPUG | 1170 |
| Baldwinsville, N.Y. | WSEN | 1050 |
| Ballinger, Tex. | KRUN | 1400 |
| Baltimore, Md. | WBAL | 1090 |
| | WAYE | 860 |
| | WBMD | 750 |
| | WCAO | 600 |
| | WCBM | 680 |
| | WEBB | 1360 |
| | WFBR | 1300 |
| | WITH | 1230 |
| | WSID | 1010 |
| | WWIN | 1400 |
| Bamberg-Denmark, S.C. | WWBD | 790 |
| Bangor, Maine | WABI | 910 |
| | WGUY | 1250 |
| | WLBZ | 620 |
| Banning, Calif. | KPAS | 1490 |
| Baraboo, Wis. | WBOO | 740 |
| Bardstown, Ky. | WBRT | 1320 |
| Barbourville, Ky. | WYWY | 950 |
| Barnesboro, Pa. | WNCC | 950 |
| Barnesville, Ga. | WBAF | 1090 |
| Barnwell, S.C. | WBAW | 740 |
| Barre, Vt. | WSNO | 1450 |
| Barstow, Calif. | KWTC | 1230 |
| | KIOT | 1310 |
| Bartlesville, Okla. | KWON | 1400 |
| Bartow, Fla. | WBAR | 1460 |
| Bassett, Va. | WOOY | 900 |
| Bastrop, La. | KTRY | 730 |
| | KVOB | 1340 |
| Batavia, N.Y. | WBTA | 1490 |
| Batesburg, S.C. | WBLR | 1430 |
| Batesville, Ark. | KBTA | 1340 |
| Batesville, Miss. | WBLE | 1290 |
| Bath, Maine | WJTO | 730 |
| Bath, N.Y. | WFSR | 1580 |
| Baton Rouge, La. | WAIL | 1260 |
| | WLUX | 1550 |
| | WYNK | 1380 |
| | WIBR | 1300 |
| | WJBO | 1150 |
| | WLCS | 910 |
| | WXOK | 1460 |
| Battle Creek, Mich. | WBCK | 930 |
| | WKFR | 1400 |
| | WVOC | 1500 |
| Baxley, Ga. | WHAB | 1260 |
| Bay City, Mich. | WBCM | 1440 |
| | WXOX | 1250 |
| Bay City, Tex. | KIOX | 1270 |
| Bay Minette, Ala. | WBCA | 1110 |
| Bayamon, P.R. | WLUZ | 1600 |
| | 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. | KLVI | 560 |
| | KPYC | 1450 |
| | KTRM | 990 |
| Beaver Dam, Wis. | WBEV | 1430 |
| Beaver Falls, Pa. | WBVP | 1230 |
| Beckley, W. Va. | WJLS | 560 |
| | WCIR | 1060 |
| | WWNR | 620 |
| Bedford, Ind. | WBIW | 1340 |
| Bedford, Pa. | WBFD | 1310 |
| Bedford, Va. | WBLT | 1350 |
| Beeville, Tex. | KIBL | 1490 |
| Bel Air, Md. | WVOB | 1520 |
| Belen, N.Mex. | KARS | 860 |
| Belfast, Me. | WBME | 1230 |
| Belgrade, Mont. | KGVW | 630 |
| Bellaire, Ohio | WOMP | 1290 |
| 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 |
| | KBYU | 1540 |
| Bellingham, Wash. | KPUG | 1170 |
| | KGMI | 790 |
| | KOQT | 1550 |
| Bellingham-Ferndale, Wash. | KENY | 930 |
| Belmont, N.C. | WCGC | 1270 |
| Beloit, Wis. | WGEZ | 1490 |
| | WBEL | 1380 |
| Belton, S.C. | WHPB | 1390 |
| Belton, Tex. | KTON | 940 |
| Belzoni, Miss. | WELZ | 1460 |
| Bemidji, Minn. | KBUN | 1450 |
| Bend, Oreg. | KBND | 1110 |
| | KGRL | 940 |
| Bennetsville, S.C. | WBSC | 1550 |
| Bennington, Vt. | WBTN | 1370 |
| Benson, Minn. | KBMO | 1290 |
| Benson, N.C. | WPYB | 1580 |
| Benton, Ark. | KBBA | 690 |
| | KGKO | 850 |
| Benton, Ky. | WCBL | 1290 |
| Benton Harbor-St. Joseph, Mich. | WHFB | 1060 |
| Berkeley, Calif. | KPAT | 1400 |
| Berkeley Springs, W. Va. | WCST | 1010 |
| Berlin, N.H. | WMOU | 1280 |
| | 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 |
| Big Bear Lake, Cal. | KTOT | 1050 |
| Big Delta, Alaska | WXLL | 980 |
| Big Lake, Tex. | KBLT | 1290 |
| Big Rapids, Mich. | WBRN | 1460 |
| Big Spgs., Tex. | KBST | 1490 |
| | KHEM | 1270 |
| | KBYG | 1400 |
| Big Stone Gap, Va. | WLSD | 1220 |
| Bijou, Cal. | KOWL | 1490 |
| Biloxi, Miss. | WLOX | 1490 |
| | WVMI | 570 |
| Billings, Mont. | KBMY | 1240 |
| | KGHL | 790 |

| Location | C.L. | kHz |
|---|---|---|
| | KOOK | 970 |
| | KOYN | 910 |
| | KURL | 730 |
| Binghamton, N.Y. | WINR | 680 |
| | WKOP | 1360 |
| | WNBF | 1290 |
| Birmingham, Ala. | WAPI | 1070 |
| | WBRC | 960 |
| | WCRT | 1260 |
| | WAQY | 1220 |
| | WENN | 1320 |
| | WATV | 900 |
| | WSGN | 610 |
| | WYDE | 850 |
| | WVOK | 690 |
| Bisbee, Ariz. | KSUN | 1230 |
| Bishop, Calif. | KIBS | 1230 |
| Bishopville, S.C. | WAGS | 1380 |
| Bismarck, N.Dak. | KFYR | 550 |
| | KBMR | 1350 |
| Bismarck-Mandan, N.Dak. | KBOM | 1270 |
| Black Mountain, N.C. | WBMS | 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 |
| Bloomington, Ill. | WJBC | 1230 |
| Bloomington, Ind. | WTTS | 1370 |
| Bloomsburg, Pa. | WCNR | 930 |
| | WHLM | 550 |
| Blountstown, Fla. | WKMK | 1370 |
| Blue Earth, Minn. | KBEW | 1560 |
| Bluefield, W.Va. | WHIS | 1440 |
| | WKOY | 1240 |
| Blythe, Calif. | KYOR | 1450 |
| Blytheville, Ark. | KLCN | 910 |
| Boaz, Ala. | WBSA | 1300 |
| Boca Raton, Fla. | WSBR | 740 |
| Bogalusa, La. | WJKC | 1490 |
| | WBOX | 920 |
| Boise, Ida. | KATN | 950 |
| | KEST | 790 |
| | KGEM | 1140 |
| | KIDO | 630 |
| | KYME | 740 |
| Bolivar, Mo. | KBLR | 1130 |
| Bolivar, Tenn. | WBOL | 1560 |
| 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 |
| Boonville, N.Y. | WBRV | 900 |
| Borger, Tex. | KHUZ | 1490 |
| | KBBB | 1600 |
| Boston, Mass. | WBZ | 1030 |
| | WCOP | 1150 |
| | WILD | 1090 |
| | WEZE | 1260 |
| | WEEI | 590 |
| | WHDH | 850 |
| | WMEX | 1510 |
| | WRKO | 680 |
| | WRYT | 950 |
| Boulder, Colo. | KBOL | 1490 |
| | KDEY | 1360 |
| Bowie, Tex. | KBAN | 1410 |
| Bowling Green, Ky. | WKCT | 930 |
| | WBGN | 1340 |
| | WLBJ | 1410 |
| | KPCR | 1530 |
| Bowl. Green, Ohio | WMGS | 730 |
| Bozeman, Mont. | KXXL | 1450 |
| | KBMN | 1230 |
| Bradbury Hgts., Md. | WPGC | 1580 |
| Braddock, Pa. | WLOA | 1550 |
| Braddock Heights, Md. | WMHI | 1370 |
| Bradenton, Fla. | WTRL | 1490 |
| | WBRD | 1420 |
| Bradford, Pa. | WESB | 1490 |
| Brady, Tex. | KNEL | 1490 |
| Brainerd, Minn. | KLIZ | 1380 |
| | KVBR | 1340 |
| Brandon, Miss. | WRKN | 970 |
| Branson, Mo. | KBHM | 1220 |
| Brantford, Ont. | CKPC | 1380 |
| Brattleboro, Vt. | WTSA | 1450 |
| | WKVT | 1490 |
| Brawley, Calif. | KROP | 1300 |
| Brazil, Ind. | WWCM | 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 |
| Brewster, N.Y. | WBRW | 1510 |
| Brewton, Ala. | WEBJ | 1240 |
| Bridgeport, Ala. | WBTS | 1480 |
| Bridgeport, Conn. | WICC | 600 |
| | WNAB | 1450 |
| Bridgeton, N.J. | WSNJ | 1240 |
| Brigham City, Utah | KBUH | 800 |
| Brighton, Colo. | KBRN | 800 |
| Brinkley, Ark. | KBRI | 1570 |
| Bristol, Conn. | WBIS | 1440 |
| Bristol, Tenn. | WOPI | 1490 |
| | WKYE | 1550 |
| Bristol, Va. | WCYB | 690 |
| | WFHG | 980 |
| Brockton, Mass. | WBET | 1460 |
| | WOKW | 1410 |
| Brockville, Ont. | CFJR | 1450 |
| Broken Bow, Nebr. | KCNI | 1280 |
| Bronson, Mo. | KBHM | 1220 |
| Brookfield, Conn. | WINE | 940 |
| Brookfield, Mo. | KGHM | 1470 |
| Brookhaven, Miss. | WCHJ | 1470 |
| | WJMB | 1340 |
| Brookings, Oreg. | KURY | 910 |
| Brookings, S.Dak. | KBRK | 1490 |
| Brookline, Mass. | WBOS | 1600 |
| Brookneal, Va. | WODI | 1230 |
| Brooksville, Fla. | WWJB | 1450 |
| Brownfield, Tex. | KKUB | 1300 |
| Brownsville, Tenn. | WBHT | 1520 |
| Brownsville, Tex. | KBOR | 1600 |
| Brownwood, Tex. | KBWD | 1380 |
| | KEAN | 1240 |
| Brunswick, Ga. | WGIG | 1440 |
| | WMOG | 1490 |
| | WYNR | 790 |
| Brunswick, Maine | WCME | 900 |
| Brunswick, Md. | WTRI | 1520 |
| Bryan, Ohio | WBNO | 1520 |
| Bryan, Tex. | KORA | 1240 |
| | WTAW | 1150 |
| Bryson City, N.C. | WBHN | 1590 |
| Buckhannon, W.Va. | WBUC | 1460 |
| Bucyrus, Ohio | WBCO | 1540 |
| Buffalo, N.Y. | WBEN | 930 |
| | WYSL | 1400 |
| | WEBR | 970 |
| | WGR | 550 |
| | WKBW | 1520 |
| | WWOL | 1120 |
| Buffalo, Wyo. | KBBS | 1450 |
| Buford, Ga. | WDYZ | 1460 |
| Burbank, Calif. | KBLA | 1500 |
| Burley, Idaho | KBAR | 1230 |
| Burlington, Colo. | KNAB | 1140 |
| Burlington, Iowa | KBUR | 1490 |
| | KYED | 1150 |
| Burlington, N.C. | WBBB | 920 |
| | WBAG | 1150 |
| Burlington, Vt. | WDOT | 1400 |
| | WJOY | 1230 |
| | WVMT | 620 |
| Burnett, Tex. | KTSL | 1340 |
| Burney, Cal. | KAVA | 1450 |
| Burns, Oreg. | KRNS | 1280 |
| Burnsville, N.C. | WKYK | 1540 |
| Butler, Ala. | WPRN | 1220 |
| Butler, Mo. | KMAM | 1530 |
| Butler, Pa. | WBUT | 1050 |
| | WISR | 680 |
| Butte, Mont. | KBOW | 550 |
| | KXLF | 1370 |
| Cabin, John, Potomac, Md. | WXLN | 950 |
| Cadillac, Mich. | WATT | 1240 |
| Cadiz, Ky. | WKOZ | 1110 |
| Caguas, P.R. | WNEL | 1430 |
| | WVJP | 1110 |
| Cairo, Ga. | WGRA | 790 |
| Cairo, Ill. | WKRO | 1490 |
| Calais, Maine | WQDY | 1230 |
| Caldwell, Idaho | KCID | 1490 |
| | KBGN | 910 |
| | WBYE | 1370 |
| Calera, Ala. | WHOT | 1330 |
| Calexico, Calif. | KICO | 1490 |
| Calhoun, Ga. | WCGA | 900 |
| | WEBS | 1110 |
| Camas, Wash. | KVAN | 1480 |
| Cambridge, Md. | WCEM | 1240 |
| Cambridge, Mass. | WCAS | 740 |
| Cambridge, Ohio | WILE | 1270 |
| Camden, Ark. | KAMD | 910 |
| | KJWH | 1450 |
| 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 |
| Canandaigua, N.Y. | WCGR | 1550 |
| Cannon City, Colo. | KRLN | 1400 |
| Canonsburg, Pa. | WARO | 540 |
| Canton, Ga. | WCHK | 1290 |
| Canton, Ill. | WBYS | 1560 |
| Canton, Miss. | WMGO | 1370 |
| Canton, N.C. | WWIT | 970 |
| Canton, Ohio | WHBC | 1460 |
| | WOIO | 1060 |
| | WINW | 1520 |
| | WNYN | 900 |
| Canyon, Tex. | KCAN | 1550 |
| Cape Girardeau, Mo. | KFVS | 960 |
| | KZYM | 1220 |
| | KGMO | 1550 |
| Carbondale, Ill. | WCIL | 1020 |
| Carbondale, Pa. | WCDL | 1440 |
| Caribou, Maine | WFST | 600 |
| Carlisle, Pa. | WHYL | 960 |
| | WIOO | 1000 |
| Carlsbad, N.Mex. | KAVE | 1240 |
| | KCCC | 930 |
| | KPBM | 740 |
| Carmel, Calif. | KRML | 1410 |
| Carmi, Ill. | WROY | 1460 |
| Carnegie, Pa. | WZUM | 1590 |
| Caro, Mich. | WKYO | 1360 |
| Carolina, P.R. | WVOZ | 1400 |
| 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 |
| | WKRW | 1270 |
| Carthage, Ill. | WCAZ | 990 |
| Carthage, Mo. | KDMO | 1490 |
| Carthage, Miss. | WECP | 1480 |
| Carthage, Tenn. | WRKM | 1350 |
| Carthage, Tex. | KGAS | 1590 |
| Caruthersville, Mo. | KCRV | 1370 |
| Casa Grande, Ariz. | KPIN | 1260 |
| Casey, Ill. | WKZI | 800 |
| Casper, Wyo. | KTWO | 1030 |
| | KATI | 1400 |
| Cathedral City, Calif. | KVOC | 1230 |
| | KWXY | 1340 |
| Cayce, S.C. | WCAY | 620 |
| Cayey, P.R. | WLEY | 1080 |
| Cedar City, Utah | KSUB | 590 |
| Cedar Falls, Iowa | KCFI | 1250 |
| Cedar Rapids, Iowa | KCRG | 1600 |
| | KLWW | 1450 |
| | WMT | 600 |
| | KHAK | 1360 |
| Cedartown, Ga. | WGAA | 1340 |
| Celina, Ohio | WCSM | 1350 |
| Center, Ala. | WEIS | 990 |
| | WAGC | 1550 |
| Center, Tex. | KDET | 930 |
| Centerville, Ala. | WBIB | 1590 |
| Centerville, Iowa | KCOG | 1400 |
| Centerville, Ind. | WHON | 930 |
| Centreville, Miss. | WLBS | 1580 |
| 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, Ala. | WBIB | 1110 |
| Ceres, Calif. | KLOC | 920 |
| Chadburn, N.C. | WVOE | 1590 |
| Chadron, Nebr. | KCSR | 610 |
| Chambersburg, Pa. | WCHA | 800 |
| | WCBG | 1590 |
| Champaign, Ill. | WDWS | 1400 |
| Chanute, Kans. | KCRB | 1460 |
| Chapel Hill, N.C. | WCHL | 1360 |
| Charleroi, Pa. | WESA | 940 |
| Charles City, Iowa | KCHA | 1580 |
| Charleston, Ill. | WEIC | 1270 |
| Charleston, Mo. | KCHR | 1350 |
| Charleston, S.C. | WCSC | 1390 |
| | WOKE | 1340 |
| | WPAL | 730 |
| | WQSN | 1450 |
| | WTMA | 1250 |
| Charleston, W.Va. | WCAW | 680 |
| | WCHS | 580 |
| | WGKV | 1490 |
| | WKAZ | 950 |
| | WTIP | 1240 |
| | WXVA | 1550 |
| Charlotte, Mich. | WCER | 1390 |
| Charlotte, N.C. | WBT | 1100 |
| | WAYS | 610 |
| | WGIV | 1600 |
| | WKTC | 1310 |
| | WSOC | 930 |
| | WIST | 1240 |
| | WWOK | 1480 |
| | WRPL | 1540 |
| Charlotte Amalie, V.I. | WBNB | 1000 |
| | WSTA | 1340 |
| | WBNB | 1000 |
| Charlottesville, Va. | WCHV | 1260 |
| | WELK | 1010 |
| | WINA | 1070 |
| Chase City, Va. | WMEK | 980 |
| Chatham, Va. | WKBY | 1080 |
| Chattahoochee, Fla. | WSBP | 1580 |
| Chattanooga, Tenn. | WMOC | 1450 |
| | WAPO | 1150 |
| | WDEF | 1370 |
| | WDOD | 1310 |
| | WDXB | 1490 |
| | WNOO | 1260 |
| Cheboygan, Mich. | WCBY | 1240 |
| Cheektowaga, N.Y. | WNIA | 1230 |
| Chehalis-Centralia, Wash. | KITI | 1420 |
| Chelan, Wash. | KOZI | 1220 |
| Cheraw, S.C. | WCRE | 1420 |
| Cherryville, N. C. | WCSL | 1590 |
| Cherokee, Iowa | KCHE | 1440 |
| Chesapeake, Va. | WSJT | 1600 |
| Chester, Ill. | KSGM | 980 |
| Chester, Pa. | WEEZ | 1590 |
| | WVCH | 740 |
| Chester, S.C. | WGCD | 1490 |
| Chester, Va. | WIKI | 1410 |
| Chestertown, Md. | WCTR | 1530 |
| Cheyenne, Wyo. | KFBC | 1240 |
| | KCHY | 1530 |
| | KRAE | 1480 |
| | KVWO | 1370 |
| | KEND | 980 |
| Chicago, Ill. | WAAF | 950 |
| | WAIT | 820 |
| | WBBM | 780 |
| | WCFL | 1000 |
| | WCRW | 1240 |
| | WEDC | 1240 |
| | WGN | 720 |
| | WIND | 560 |
| | WJJD | 1160 |
| | WLS | 890 |
| | WMAQ | 670 |
| | WMBI | 1110 |
| | WNUS | 1390 |
| | WSBC | 1240 |
| Chicago Hgts., Ill. | WMPP | 1470 |
| | WCGO | 1600 |
| Chickasha, Okla. | KWCO | 1560 |
| Chico, Calif. | KHSL | 1290 |
| | KPAY | 1060 |
| Chicopee, Mass. | WACE | 730 |
| Childress, Tex. | KCTX | 1510 |
| Chillicothe, Mo. | KCHI | 1010 |
| Chillicothe, Ohio | WBEX | 1490 |
| | WCHI | 1350 |
| Chipley, Fla. | WBGC | 1240 |
| Chippewa Falls, Wis. | WAXX | 1150 |
| Christiansburg, Va. | WJJJ | 1260 |
| Christiansted, V.I. | WIVI | 970 |
| Church Hill, Tenn. | WMCH | 1260 |
| Cicero, Ill. | WVON | 1450 |
| Cincinnati, Ohio | WCKY | 1530 |
| | WCIN | 1480 |
| | WKRC | 550 |
| | WLW | 700 |
| | WSAI | 1360 |
| | WUBE | 1230 |
| | WZIP | 1050 |
| Clanton, Ala. | WKLF | 860 |
| Clare, Mich. | WCRM | 990 |
| Claremont, N.H. | WTSV | 1230 |
| Claremore, Okla. | KWPR | 1270 |
| Clarion, Pa. | WWCH | 1300 |
| Clarksburg, W.Va. | WBOY | 1400 |
| | WHAR | 1340 |
| | WPDX | 750 |
| Clarksdale, Miss. | WROX | 1450 |
| | WKDL | 1600 |
| Clarksville, Ark. | KLYR | 1360 |
| Clarksville, Tenn. | WJZM | 1400 |
| | 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 | WKYC | 1100 |
| | WIXY | 1260 |
| | WERE | 1300 |
| | WGAR | 1220 |
| | WHK | 1420 |
| | WABQ | 1540 |
| | WJW | 850 |
| Cleveland, Tenn. | WBAC | 1340 |
| | WCLE | 1570 |
| Cleveland, Tex. | KVLB | 1410 |
| Cleve. Hgts., Ohio | WJMO | 1490 |
| Clifton, Ariz. | KCLF | 1400 |
| Clifton Forge, Va. | WCFV | 1230 |
| Cline, Va. | WDIC | 1430 |
| Clinton, Ill. | WHOW | 1520 |
| Clinton, Iowa | KCLN | 1390 |
| | KROS | 1340 |
| Clinton, Mo. | KDKD | 1280 |
| Clinton, N.C. | WRRZ | 880 |
| 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, Cal. | KOLI | 1470 |
| Coamo, P.R. | WCPR | 1450 |
| Coatesville, Pa. | WCOJ | 1420 |
| Cochran, Ga. | WVMG | 1440 |
| Cocoa, Fla. | WKKO | 860 |
| | WEZY | 1350 |
| | WWBC | 1510 |
| Cocoa Beach, Fla. | WRKT | 1300 |

# WHITE'S RADIO LOG

| Location | C.L. | kHz |
|---|---|---|
| Cody, Wyo. | KODI | 1400 |
| Coeur d'Alene, Ida. | KVNI | 1240 |
| Coffeyville, Kans. | KGGF | 690 |
| Colby, Kans. | KXXX | 790 |
| Coldwater, Mich. | WTVB | 1590 |
| Coleman, Tex. | KSTA | 1000 |
| Colfax, Wash. | KCLX | 1450 |
| College Park, Ga. | WBAD | 1570 |
| Collierville, Tenn. | WPIP | 1590 |
| Colonial Heights, Va. | WPVA | 1290 |
| Colorado City, Tex. | KVMC | 1320 |
| Colo. Sprgs., Colo. | KRDO | 1240 |
| | KPIK | 1580 |
| | KVOR | 1300 |
| | KSSS | 740 |
| | KYSN | 1460 |
| | KRYT | 1530 |
| Columbia, Ky. | WAIN | 1270 |
| Columbia, Miss. | WCJU | 1450 |
| Columbia, Mo. | KFRU | 1400 |
| | KTGR | 1580 |
| Columbia, Pa. | WCOY | 1580 |
| Columbia, S.C. | WCOS | 1400 |
| | WIS | 560 |
| | WOIC | 1320 |
| | WNOK | 1230 |
| | WQXL | 1470 |
| Columbia, Tenn. | WMCP | 1280 |
| | WKRM | 1340 |
| Columbus, Ga. | WDAK | 540 |
| | WRBL | 1420 |
| | WHYD | 1270 |
| | WCLS | 1580 |
| | WDKS | 1340 |
| Columbus, Ind. | WCSI | 1010 |
| Columbus, Miss. | WACR | 1050 |
| | WCBI | 550 |
| Columbus, Nebr. | KJSK | 900 |
| | KTTT | 1510 |
| Columbus, Ohio | WBNS | 1460 |
| | WCOL | 1230 |
| | WMNI | 920 |
| | WOSU | 820 |
| | WTVN | 610 |
| | WVKO | 1580 |
| Colville, Wash. | KCVL | 1270 |
| Comanche, Tex. | KCOM | 1550 |
| Commerce, Ga. | WJJC | 1270 |
| Concord, Calif. | KWUN | 1480 |
| Concord, N.H. | WKXL | 1450 |
| Concord, N.C. | WEGO | 1410 |
| Concordia, Kans. | KNCK | 1390 |
| 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 | 1350 |
| Cookeville, Tenn. | WHUB | 1400 |
| | WPTN | 1550 |
| Coolidge, Ariz. | KCKY | 1150 |
| Coos Bay, Oreg. | KOOS | 1230 |
| | KYNG | 1420 |
| Copper Hill, Tenn. | WLSB | 1400 |
| Coquille, Oreg. | KWRO | 630 |
| Coral Gables, Fla. | WRIZ | 1550 |
| | WVCG | 1080 |
| Corbin, Ky. | WCTT | 680 |
| | WYGO | 1330 |
| Cordele, Ga. | WMJM | 1490 |
| Cordova, Alaska | KLAM | 1450 |
| Corinth, Miss. | WCMA | 1230 |
| | WKCU | 1350 |
| Cornelia, Ga. | WCON | 1450 |
| Corning, Ark. | KCCB | 1260 |
| Corning, N.Y. | WCBA | 1350 |
| | WCLI | 1450 |
| Corona, Cal. | KREL | 1370 |
| Corpus Christi, Tex. | KCTA | 1030 |
| | KCCT | 1150 |
| | KEYS | 1440 |
| | KRYS | 1360 |
| | KSIX | 1230 |
| | KUND | 1400 |
| Corry, Pa. | WOTR | 1370 |
| Corsicana, Tex. | KAND | 1340 |
| Cortez, Colo. | KVFC | 740 |
| Cortland, N.Y. | WKRT | 920 |
| | KFLY | 1240 |
| Corvallis, Ore. | KLOO | 1340 |
| Corydon, Ind. | WPDF | 1550 |
| Coshocton, Ohio | WTNS | 1560 |
| Cottage Grove, Ore. | KNND | 1400 |
| Cottonwood, Ariz. | KVRD | 1240 |
| | KVIO | 1600 |
| Coudersport, Pa. | WFRM | 600 |
| Council Bluffs, Iowa | KFNF | 920 |
| | KRCB | 1360 |
| Courtenay, B.C. | CFCP | 1440 |
| Covington, Ga. | WGFS | 1430 |
| Covington, Ky. | WCLU | 1320 |
| Covington, La. | WARB | 730 |
| Covington, Tenn. | WKBL | 1250 |
| Covington, Va. | WKEY | 1340 |
| Cowan, Tenn. | WZYX | 1440 |
| Cozad, Neb. | KAMI | 1580 |
| Craig, Colo. | KRAI | 550 |
| Crane, Tex. | KCRR | 1380 |
| | KBSN | 970 |
| Crawfordsville, Ind. | WCVL | 1550 |
| 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. | KROX | 1260 |
| Crossett, Ark. | KAGH | 800 |
| Crossville, Tenn. | WAEW | 1330 |
| Crowley, La. | KSIG | 1450 |
| Crystal Lake, Ill. | WCLR | 850 |
| Cuero, Tex. | KCFH | 1600 |
| Cullman, Ala. | WFMH | 1460 |
| | WKUL | 1340 |
| Culpeper, Va. | WCVA | 1490 |
| Cumberland, Ky. | WCPM | 1280 |
| Cumberland, Md. | WCUM | 1230 |
| | WKYR | 1270 |
| | WTBD | 1450 |
| Cummings, Ga. | WSNE | 1410 |
| Cushing, Okla. | KUSH | 1600 |
| Cuyahoga Falls, Ohio | WCUE | 1150 |
| Cypress Gardens, Fla. | WGTO | 540 |
| Cynthiana, Ky. | WCYN | 1400 |
| Dade City, Fla. | WDCF | 1350 |
| Dadeville, Ala. | WDVC | 910 |
| Daingerfield, Tex. | KEGG | 1560 |
| Dalhart, Tex. | KXIT | 1410 |
| Dallas, N.C. | WAAK | 960 |
| Dallas, Oreg. | KROW | 1460 |
| Dallas, Tex. | KRLD | 1080 |
| | KIXL | 1040 |
| | KSKY | 660 |
| | KLIF | 1190 |
| | WFAA | 570 |
| | WFAA | 820 |
| | KBOX | 1480 |
| | WRR | 1310 |
| Dalton, Ga. | WBLJ | 1230 |
| | WRCD | 1430 |
| | WTTI | 1530 |
| Danbury, Conn. | WLAD | 800 |
| Danville, Ill. | WDAN | 1490 |
| | WITY | 980 |
| Danville, Ky. | WHIR | 1230 |
| Danville, Pa. | WPGM | 1570 |
| Danville, Va. | WBTM | 1330 |
| | WYPR | 970 |
| | WDVA | 1250 |
| | WILA | 1580 |
| Dardanelle, Ark. | KCAB | 980 |
| Darlington, S.C. | WDAR | 1350 |
| Davenport, Iowa | WOC | 1420 |
| | KWNT | 1580 |
| | KSTT | 1170 |
| Dawson, Ga. | WDWD | 990 |
| Dayton, Ohio | WHIO | 1290 |
| | WING | 1410 |
| | WONE | 980 |
| | WAVI | 1210 |
| Dayton, Tenn. | WDNT | 1280 |
| Daytona Beach, Fla. | WNDB | 1150 |
| | WMFJ | 1450 |
| | WROD | 1340 |
| Deadwood, S.Dak. | KDSJ | 980 |
| Dearborn, Mich | WKNR | 1310 |
| Decatur, Ala. | WHOS | 800 |
| | WAJF | 1490 |
| | WMSL | 1400 |
| Decatur-Atlanta, Ga. | KGUN | 1010 |
| | WOMN | 1310 |
| Decatur, Ill. | WDZ | 1050 |
| | WSOY | 1340 |
| Decatur, Ind. | WADM | 1540 |
| Decorah, Iowa | KDEC | 1240 |
| | KWLC | 1240 |
| Deer Lodge, Mont. | KDRG | 1400 |
| 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 |
| | WOOD | 1310 |
| Delano, Calif. | KCHJ | 1010 |
| Delaware, Ohio | WDLE | 1550 |
| Delray, Beh., Fla. | WDBF | 1420 |
| Del Rio, Tex. | KDLK | 1230 |
| Delta, Colo. | KDTA | 1400 |
| Deming, N.Mex. | KOTS | 1230 |
| Demopolis, Ala. | WXAL | 1400 |
| Denham Sprgs., La. | WLBI | 1220 |
| Denison, Iowa | KDSN | 1580 |
| Denison-Sherman, Tex. | KDSX | 950 |
| Denmark-Bamberg, S.C. | WWBD | 790 |
| Denton, Tex. | KDNT | 1440 |
| Denver, Colo. | KDEN | 1340 |
| | KFML | 1390 |
| | KHOW | 630 |
| | KIMN | 950 |
| | KLIR | 990 |
| | KLZ | 560 |
| | KBTR | 710 |
| | KOA | 850 |
| | 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 |
| | KIOA | 940 |
| | KRNT | 1350 |
| | KSO | 1460 |
| | KWKY | 1150 |
| | WHO | 1040 |
| Detroit, Mich. | WCAR | 1130 |
| | WJBK | 1500 |
| | WJLB | 1400 |
| | WJR | 760 |
| | WWJ | 950 |
| | WXYZ | 1270 |
| Detroit Lakes, Minn. | KDLM | 1340 |
| Devils Lake, N.Dak. | KDLR | 1240 |
| Dexter, Mo. | KDEX | 1590 |
| Diboll, Tex. | KSPL | 1260 |
| Dickinson, N.Dak. | KDIX | 1230 |
| Dickson, Tenn. | WDKN | 1260 |
| Dillon, Mont. | KDBM | 1490 |
| Dillon, S.C. | WDSC | 800 |
| Dimmitt, Tex. | KDHN | 1470 |
| Dinuba, Calif. | KRDU | 1130 |
| Dixon, Ill. | WIXN | 1460 |
| Dodge City, Kans. | KGND | 1370 |
| | KEDD | 1550 |
| Donaldsonville, Ga. | WSEM | 1500 |
| Doniphan, Mo. | KDFN | 1500 |
| Dothan, Ala. | WAGF | 1320 |
| | WDIG | 1450 |
| | WOOF | 560 |
| Douglas, Ariz. | KAWT | 1450 |
| | KAPR | 930 |
| Douglas, Ga. | WDMG | 860 |
| | WOKA | 1310 |
| Douglas, Wyo. | KWIV | 1050 |
| Douglasville, Ga. | WDGL | 1520 |
| Dover, Del. | WDDV | 1410 |
| | WKEN | 1600 |
| Dover-Foxcraft, Me. | WDME | 1340 |
| Dover, N.J. | WRAN | 1510 |
| Dover, N.H. | WTSN | 1270 |
| Dover, Ohio | WJER | 1450 |
| Dowagiac, Mich. | WDDW | 1440 |
| Doylestown, Pa. | WBUX | 1570 |
| Dublin, Ga. | WMLT | 1330 |
| | WXLI | 1230 |
| Du Bois, Pa. | WCED | 1420 |
| Dubuque, Iowa | KDTH | 1370 |
| | WDBQ | 1490 |
| Duluth, Minn. | KDAL | 610 |
| | WEBC | 560 |
| | KAOH | 1390 |
| Dumas, Ark. | KDDA | 1560 |
| Dumas, Tex. | KDDD | 800 |
| Duncan, Okla. | KRHD | 1350 |
| Dundee, N.Y. | WFLR | 1570 |
| Dunkirk, N.Y. | WDOE | 1410 |
| Dunn, N.C. | WCKB | 780 |
| Du Quoin, Ill. | WDQN | 1580 |
| Durango, Colo. | KIUP | 930 |
| | KDGD | 1240 |
| Durant, Okla. | KSFO | 750 |
| Durham, N.C. | WDNC | 620 |
| | WSRC | 1410 |
| | WSSB | 1490 |
| | WTIK | 1310 |
| 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. | KRAD | 1590 |
| Eastland, Tex. | KERC | 1590 |
| E. Lansing, Mich. | WKAR | 870 |
| | WVIC | 750 |
| E. Liverpool, Ohio | WOHI | 1490 |
| East Longmeadow, Mass. | WTYM | 1600 |
| Eastman, Ga. | WUFF | 710 |
| E. Moline, Ill. | WDLM | 960 |
| E. Point, Ga. | WTJH | 1260 |
| East Prairie, Mo. | KGCL | 1080 |
| E. Syracuse, N.Y. | WPAW | 1540 |
| Easton, Md. | WEMD | 1460 |
| Easton, Pa. | WEEX | 1230 |
| | WEST | 1400 |
| Eatonton, Ga. | WXPQ | 1520 |
| Eatontown, N.J. | WHTG | 1410 |
| Eau Claire, Wis. | WEAQ | 790 |
| | WBIZ | 1400 |
| | WECL | 1050 |
| Eau Gallie, Fla. | WMEG | 920 |
| | WTAI | 1560 |
| Ebensburg, Pa. | WEND | 1580 |
| Edenton, N.C. | WCDJ | 1260 |
| Edinburg, Tex. | KURV | 710 |
| Edmonds, Wash. | KGDN | 630 |
| Effingham, Ill. | WCRA | 1090 |
| Elba, Ala. | WELB | 1350 |
| Elberton, Ga. | WSGC | 1400 |
| El Cajon, Calif. | KDEO | 910 |
| El Campo, Tex. | KULP | 1390 |
| El Centro, Calif. | KXO | 1230 |
| | KAMP | 1430 |
| El Dorado, Ark. | KDMS | 1290 |
| | KELD | 1400 |
| Eldorado, Kans. | KBTD | 1360 |
| Eldorado Springs, Mo. | KESM | 1580 |
| Eleele, Kanai, Hawaii | KUAI | 720 |
| Elgin, Ill. | WRMN | 1410 |
| Elizabeth City, N. C. | WCNC | 1240 |
| | WGAI | 560 |
| Elizabethton, Tenn. | WBEJ | 1240 |
| | WIDD | 1520 |
| Elizabethtown, Ky. | WIEL | 1400 |
| Elizabethtown, N.C. | WBLA | 1440 |
| Elizabethtown, Pa. | WHRY | 1600 |
| Elk City, Okla. | KBEK | 1240 |
| Elkhart, Ind. | WTRC | 1340 |
| | WCMR | 1270 |
| Elkins, N.C. | WIFM | 1540 |
| Elkins, W.Va. | WDNE | 1240 |
| Elko, Nev. | KELK | 1240 |
| Elkton, Md. | WSER | 1550 |
| Ellensburg, Wash. | KXLE | 1240 |
| Ellenville, N.Y. | WELV | 1370 |
| Ellsworth, Me. | WDEA | 1370 |
| Elmira, N.Y. | WELM | 1410 |
| | WENY | 1230 |
| Elmira Heights-Horseheads, N.Y. | WEHH | 1590 |
| El Paso, Tex. | KRDD | 600 |
| | KELP | 920 |
| | KHEY | 690 |
| | KINT | 1590 |
| | KIZZ | 1150 |
| | KSET | 1340 |
| | KTSM | 1380 |
| El Reno, Okla. | KELR | 1460 |
| Ely, Minn. | WELY | 1450 |
| Ely, Nev. | KELY | 1280 |
| Elyria, Ohio | WEOL | 930 |
| Eminence, Ky. | WSTL | 1600 |
| Emporia, Kans. | KVDE | 1400 |
| Emporia, Va. | WEVA | 860 |
| Emporium, Pa. | WLEM | 1250 |
| Endicott, N.Y. | WENE | 1430 |
| Englewood, Colo. | KGMC | 1150 |
| Englewood, Fla. | WENG | 1530 |
| Englewood, Tenn. | WENR | 1090 |
| Enid, Okla. | KCRC | 1390 |
| | KGWA | 960 |
| Enterprise, Ala. | WIRB | 600 |
| Enterprise, Oreg. | KWVR | 1340 |
| Ephrata, Pa. | WGSA | 1310 |
| Ephrata, Wash. | KULF | 730 |
| Erie, Pa. | WWYN | 1260 |
| | WICU | 1330 |
| | WJET | 1400 |
| | WWGO | 1450 |
| Erwin, Tenn. | WEMB | 1420 |
| Escanaba, Mich. | WDBC | 680 |
| | WLST | 600 |
| Escondido, Calif. | KOWN | 1450 |
| Espanola, N. M. | KDCE | 970 |
| Estes Park, Colo. | KKEP | 1470 |
| Etowah, Tenn. | WCPH | 1220 |
| Eufaula, Ala. | WULA | 1240 |
| Eugene, Ore. | KEED | 1450 |
| | KASH | 1600 |
| | KATR | 1320 |
| | KORE | 1050 |
| | KERG | 1280 |
| | KPIR | 1120 |
| | KUGN | 590 |
| | KZEL | 1540 |
| Eunice, La. | KEUN | 1490 |
| Eureka, Calif. | KINS | 980 |
| | KDAN | 790 |
| Eustis, Fla. | WLCO | 1240 |
| Evanston, Ill. | WEAW | 1330 |
| | WNMP | 1590 |
| Evanston, Wyo. | KEVA | 1240 |
| Evansville, Ind. | WROZ | 1400 |
| | WGBF | 1280 |
| | WIKY | 820 |
| | WJPS | 1330 |
| Eveleth, Minn. | WEVE | 1340 |
| Everett, Pa. | WWDS | 1050 |
| Everett, Wash. | KRKD | 1380 |
| | KWYZ | 1230 |
| Evergreen, Ala. | WBLO | 1470 |
| Exeter, N.H. | WKXR | 1540 |
| Fairbanks, Alaska | KFAR | 660 |
| | KFRB | 900 |
| Fairbault, Minn. | KDHL | 920 |

| Location | C.L. | kHz |
|---|---|---|
| Fairbury, Nebr. | KGMT | 1310 |
| Fairfax, Va. | WEEL | 1310 |
| Fairfield, Ill. | WFIW | 1390 |
| Fairfield, Iowa | KMCD | 1570 |
| Fairfield, O. | WCNW | 1560 |
| Fairhope, Ala. | WABF | 1220 |
| Fairmont, Minn. | KSUM | 1370 |
| Fairmont, N.C. | WFMO | 860 |
| Fairmont, W.Va. | WMMN | 920 |
| | WTCS | 1490 |
| Fairway, Kan. | KUDL | 1380 |
| Fajardo, P.R. | WMDD | 1480 |
| Falfurrias, Tex. | KPSO | 1260 |
| Fall River, Mass. | WALE | 1400 |
| | WSAR | 1480 |
| | KVLV | 980 |
| Falls Church, Va. | WFAX | 1220 |
| Falls City, Nebr. | KTNC | 1230 |
| Fargo, N.Dak. | WDAY | 970 |
| | KFGO | 790 |
| | KFNW | 900 |
| | KQWB | 1550 |
| Faribault, Minn. | KDHL | 920 |
| Farmersville, La. | KTOL | 1470 |
| 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 |
| Fayetteville, N.C. | WFAI | 1230 |
| | WFNC | 940 |
| | WFLB | 1490 |
| | WIDU | 1600 |
| Fayetteville, Tenn. | | |
| | WEKR | 1240 |
| Fergus Falls, Minn. | | |
| | KOTE | 1250 |
| Fernandino Beach, Fla. | | |
| | WFBF | 1570 |
| Ferriday, La. | KFNV | 1600 |
| Festus, Mo. | KJCF | 1400 |
| Festus-St. Louis, Mo. | | |
| | KXEN | 1010 |
| Findlay, Ohio | WFIN | 1330 |
| Fisher, W.Va. | WELD | 690 |
| Fitchburg, Mass. | WEIM | 1280 |
| | WFGL | 960 |
| Fitzgerald, Ga. | WBHB | 1240 |
| Flagstaff, Ariz. | KCLS | 600 |
| | KAFF | 930 |
| | KJKJ | 1400 |
| | KEOS | 690 |
| Flat River, Mo. | KFMO | 1250 |
| Flint, Mich. | WFDF | 910 |
| | WTRX | 1330 |
| | WAMM | 1420 |
| | WMRP | 1570 |
| | WKMF | 1470 |
| | WTAC | 600 |
| Flomaton, Ala. | WTCB | 990 |
| Florence, Ala. | WJOI | 1340 |
| | WOWL | 1240 |
| Florence, S.C. | WJMX | 970 |
| | WOLS | 1230 |
| | WYNN | 540 |
| Floydada, Tex. | KFLD | 900 |
| Foley, Ala. | WHEP | 1310 |
| Fond du Lac, Wis. | KFIZ | 1450 |
| Fordyce, Ark. | KBJT | 1570 |
| Forest, Miss. | WMAG | 860 |
| Forest City, N.C. | WBBO | 780 |
| | WAGY | 1320 |
| Forest Grove, Ore. | KWAY | 1570 |
| Forrest City, Ark. | KXJK | 950 |
| Ft. Atkinson, Wis. | WFAW | 940 |
| Ft. Bragg, Calif. | KDAC | 1230 |
| Ft. Campbell, Ky. | WABD | 1370 |
| Ft. Collins, Colo. | KCOL | 1410 |
| | KZIX | 600 |
| Ft. Dodge, Iowa | KVFD | 1400 |
| | KWMT | 540 |
| Ft. Knox, Ky. | WSAC | 1470 |
| Ft. Lauderdale, Fla. | WFTL | 1400 |
| | WSRF | 1580 |
| Ft. Madison, Iowa | KXGI | 1360 |
| Ft. Morgan, Colo. | KFTM | 1400 |
| Ft. Myers, Fla. | WINK | 1240 |
| | WMYR | 1410 |
| | WCAI | 1350 |
| Ft. Payne, Ala. | WFPA | 1400 |
| | WZOB | 1250 |
| Ft. Pierce, Fla. | WARN | 1330 |
| | WIRA | 1400 |
| Ft. Scott, Kans. | KMDO | 1600 |
| Ft. Smith, Ark. | KFPW | 1230 |
| | KFSA | 950 |
| | KTCS | 1410 |
| | KWHN | 1320 |
| Ft. Stockton, Tex. | KFST | 860 |
| Ft. Valley, Ga. | WFPM | 1150 |
| Ft. Walton Beach, Fla. | | |
| | WNUE | 1400 |
| | WFTW | 1260 |
| Ft. Wayne, Ind. | WGL | 1250 |
| | WFWR | 1090 |
| | WOWO | 1190 |

| Location | C.L. | kHz |
|---|---|---|
| | WLYV | 1450 |
| | WKJG | 1380 |
| Ft. Worth, Tex. | KJIM | 870 |
| | KBUY | 1540 |
| | KFJZ | 1270 |
| | KNOK | 970 |
| | WBAP | 570 |
| | WBAP | 820 |
| | KXOL | 1360 |
| Fortuna, Cal. | KIXF | 1280 |
| Fosston, Minn. | KEHG | 1480 |
| Fostoria, Ohio | WFOB | 1430 |
| Fountain City, Tenn. | | |
| | WGYW | 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 |
| Franklin, Ky. | WFKN | 1220 |
| Franklin, La. | KFRA | 1390 |
| | WFCG | 1110 |
| Franklin, N.C. | WFSC | 1050 |
| Franklin, N.H. | WFTN | 1240 |
| Franklin, Pa. | WFRA | 1450 |
| Franklin, Tenn. | WAGG | 950 |
| Franklin, Va. | WYSR | 1250 |
| Franklinton, La. | WFOG | 1110 |
| Frederick, Md. | WFMD | 980 |
| Frederick, Okla. | KTAT | 1570 |
| Fredericksburg, Tex. | | |
| | KNAF | 910 |
| Fredericksburg, Va. | WFVA | 1230 |
| | WFLS | 1350 |
| 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 |
| | KBIF | 900 |
| | KIRV | 1510 |
| | KEAP | 980 |
| | KXEX | 1550 |
| | KFRE | 940 |
| | KGST | 1600 |
| | KMAK | 1340 |
| | KMJ | 580 |
| | KYNO | 1800 |
| Friona, Tex. | KNNN | 1070 |
| Front Royal, Va. | WFTR | 1450 |
| Frostburg, Md. | WFRB | 560 |
| Fulton, Ky. | WFUL | 1270 |
| Fulton, Miss. | WFTO | 1330 |
| Fulton, Mo. | KFAL | 900 |
| Fulton, N.Y. | WOSC | 1300 |
| Fuquay Sprgs., N.C. | | |
| | WFVG | 1460 |
| Gadsden, Ala. | WGAD | 1350 |
| | WETO | 930 |
| | WAAX | 570 |
| | WEAC | 1500 |
| Gaffney, S.C. | WFGN | 1570 |
| Gainesville, Fla. | WDVH | 980 |
| | WGGG | 1230 |
| | WRUF | 850 |
| | WUWU | 1390 |
| Gainesville, Ga. | WGGA | 550 |
| | WDUN | 1240 |
| | WLBA | 1130 |
| Gainesville, Tex. | KGAF | 1580 |
| Gaithersburg, Md. | WHMC | 1150 |
| Galax, Va. | WBOB | 1360 |
| Galesburg, Ill. | WGIL | 1400 |
| | WAIK | 1590 |
| Gallatin, Tenn. | WHIN | 1010 |
| | WAMG | 1130 |
| Gallipolis, Ohio | WJEH | 990 |
| Gallup, N. Mex. | KGAK | 1330 |
| | KYVA | 1230 |
| Galveston, Tex. | KILE | 1400 |
| | KGBC | 1540 |
| Gander, Nfld. | CBG | 1450 |
| Garden City, Kan. | KUIL | 1240 |
| | KUPK | 1050 |
| Garden City, Mich. | | |
| | WTAK | 1090 |
| Gardner, Mass. | WGAW | 1340 |
| Gary, Ind. | WWCA | 1270 |
| | WLTH | 1370 |
| Gastonia, N.C. | WGNC | 1450 |
| | WLTC | 1370 |
| Gate City, Va. | WGAT | 1050 |
| Gaylord, Mich. | WATC | 900 |
| Geneseo, Ill. | WGEN | 1500 |
| Geneva, Ala. | WGEA | 1150 |
| Geneva, Ill. | WGSB | 1480 |
| Geneva, N.Y. | WGVA | 1240 |
| Georgetown, Del. | WJWL | 900 |
| Georgetown, Ky. | WAXU | 1580 |
| Georgetown, S.C. | WGTN | 1400 |
| | WINH | 1470 |
| Georgetown, Tex. | KGTN | 1530 |
| Gettysburg, Pa. | WGET | 1320 |
| Gillette, Wyo. | KIML | 1270 |
| Gilroy, Calif. | KPER | 1290 |
| Gladewater, Tex. | KEES | 1430 |

| Location | C.L. | kHz |
|---|---|---|
| Glasgow, Ky. | WKAY | 1490 |
| | WCDS | 1440 |
| Glasgow, Mont. | KLTZ | 1240 |
| Glen Burnie, Md. | WISZ | 1590 |
| Glendale, Ariz. | KRUX | 1360 |
| Glendale, Calif. | KIEV | 870 |
| Glendive, Mont. | KXGN | 1400 |
| | KGLE | 590 |
| Glennallen, Alaska | KCAM | 790 |
| Glens Falls, N.Y. | WBZA | 1410 |
| | WWSC | 1450 |
| Glenville, Ga. | WKIG | 1580 |
| Glenwood Sprgs., Colo. | | |
| | KGLN | 980 |
| Globe, Ariz. | KZOW | 1240 |
| Gloucester, Va. | WDDY | 1420 |
| Gloversville-Johnston, N.Y. | | |
| | WENT | 1340 |
| Gold Beach, Oreg. | KBLY | 1220 |
| Golden, Colo. | KICM | 1250 |
| Golden Meadow, La. | | |
| | KLEB | 1600 |
| Golden Valley, Minn. | | |
| | KQRS | 1440 |
| | KUXL | 1570 |
| Goldsboro, N.C. | WFMC | 730 |
| | WGBR | 1150 |
| | WGOL | 1300 |
| Gonzales, Tex. | KCTI | 1450 |
| Goodland, Kans. | KLOE | 780 |
| Gordon, Ga. | WCIK | 1560 |
| Goshen, Ind. | WKAM | 1460 |
| Gouverneur, N.Y. | WIGS | 1230 |
| Grafton, N.D. | KGPC | 1340 |
| Grafton, W.Va. | WVVW | 1260 |
| Graham, Tex. | KSWA | 1330 |
| Grand Coulee, Wash. | KFDR | 1360 |
| Grand Forks, N.D. | KFJM | 1370 |
| | KILO | 1440 |
| | KNOX | 1310 |
| Grand Haven, Mich. | | |
| | WGHN | 1370 |
| Grand Island, Nebr. | | |
| | KMMJ | 750 |
| | KRGI | 1430 |
| Grand Junction, Colo. | | |
| | KREX | 920 |
| | KEXO | 1230 |
| | KSTR | 620 |
| | KWSL | 1340 |
| Grand Prairie, Tex. | | |
| | KPCW | 730 |
| Grand Rapids, Mich. | | |
| | WJEF | 1230 |
| | WFUR | 1570 |
| | WGRD | 1410 |
| | WLAV | 1340 |
| | WMAX | 1480 |
| | WOOD | 1300 |
| Grand Rapids, Minn. | | |
| | KOZY | 1490 |
| Grangeville, Idaho | KORT | 1230 |
| Granite City, Ill. | WGNU | 920 |
| Granite Falls, N.C. | | |
| | WKJK | 900 |
| Grants, N.Mex. | KMIN | 980 |
| Grants Pass, Oreg. | KAGI | 930 |
| | KAJO | 1270 |
| Grayson, Ky. | WGOH | 1370 |
| Gt. Barrington, Mass. | | |
| | WSBS | 860 |
| Gt. Bend, Kans. | KVGB | 1590 |
| Gt. Falls, Mont. | KFBB | 1310 |
| | KUDI | 1450 |
| | KMON | 560 |
| | KARR | 1400 |
| Greeley, Colo. | KFKA | 1310 |
| | KYOU | 1450 |
| Green Bay, Wis. | WBAY | 1360 |
| | WJPG | 1440 |
| | WDUZ | 1400 |
| Greeneville, Tenn. | WGRV | 1340 |
| | WSMG | 1450 |
| Greenfield, Mass. | WHAI | 1240 |
| Greensboro, N.C. | WBIG | 1470 |
| | WCOG | 1320 |
| | WEAL | 1510 |
| | WKTB | 1550 |
| | WGBG | 1400 |
| | WPET | 950 |
| Greensburg, Ind. | WTRE | 1330 |
| Greensburg, Pa. | WHJB | 620 |
| Greenville, Ala. | WGYV | 1380 |
| Greenville, Ky. | WKYF | 1600 |
| Greenville, Mich. | WPLB | 1380 |
| Greenville, Miss. | WJPR | 1330 |
| | WDOT | 900 |
| | WGVM | 1260 |
| Greenville, Pa. | WGRP | 940 |
| Greenville, N.C. | WNCT | 1590 |
| | WOOW | 1340 |
| | WPXY | 1550 |
| Greenville, S.C. | WESC | 660 |
| | WFBC | 1330 |
| | WHYZ | 1070 |
| | WMRB | 1490 |
| | WMUU | 1260 |
| | WQOK | 1440 |
| Greenville, Tex. | KGVL | 1400 |
| Greenwich, Conn. | WGCH | 1490 |
| Greenwood, Miss. | WABG | 960 |
| | WGRM | 1240 |
| | WLEF | 1540 |

| Location | C.L. | kHz |
|---|---|---|
| Greenwood, S.C. | WCRS | 1450 |
| | WGSW | 1350 |
| Greer, S.C. | WEAB | 800 |
| | WCKI | 1300 |
| Grenada, Miss. | WNAG | 1400 |
| Gresham, Oreg. | KRDR | 1230 |
| Gretna, Va. | WMNA | 730 |
| Griffin, Ga. | WKEU | 1450 |
| | WHIE | 1320 |
| | WGRI | 1410 |
| Grinnell, Iowa | KGRN | 1410 |
| Groton, Conn. | WSUB | 980 |
| Grove City, Pa. | WSAJ | 1340 |
| Grundy, Va. | WNRG | 940 |
| Guayama, P.R. | WXRF | 1590 |
| Gulfport, Miss. | WROA | 1390 |
| | WGCM | 1240 |
| Gunnison, Colo. | KGUC | 1490 |
| Guntersville, Ala. | WGSV | 1270 |
| Guthrie, Okla. | KWRW | 1490 |
| Guymon, Okla. | KGYN | 1220 |
| Hagerstown, Md. | WARK | 1490 |
| | WJEJ | 1240 |
| Haines City, Fla. | WHAN | 930 |
| Haleyville, Ala. | WJBB | 1230 |
| Halfway, Md. | WHAG | 1410 |
| Hamden, Conn. | WDEE | 1220 |
| Hamilton, Ala. | WERH | 970 |
| Hamilton, Mont. | KYLQ | 980 |
| Hamilton, Ohio | WMOH | 1450 |
| Hamilton, Tex. | KCLW | 900 |
| Hamlet, N.C. | WKDX | 1250 |
| 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 |
| Hardin, Mont. | KHDN | 1230 |
| Harlan, Ky. | WHLN | 1410 |
| Harlingen, Tex. | KGBT | 1530 |
| Harriman, Tenn. | WHBT | 1600 |
| Harrisburg, Ill. | WEBQ | 1240 |
| Harrisburg, Pa. | WFEC | 1400 |
| | WCMB | 1460 |
| | WHP | 580 |
| | WKBO | 1230 |
| Harrison, Ark. | KHOZ | 900 |
| Harrisonburg, Va. | WHBG | 1360 |
| | WKCY | 1300 |
| | WSVA | 550 |
| Harrodsburg, Ky. | WHBN | 1420 |
| Hartford, Conn. | WDRC | 1360 |
| | WCCC | 1290 |
| | WPOP | 1410 |
| | WTIC | 1080 |
| Hartford, Wis. | WTKM | 1540 |
| Hartselle, Ala. | WHRT | 860 |
| Hartsville, S.C. | WHSC | 1450 |
| Hartsville, Tenn. | WJKM | 1090 |
| Hartwell, Ga. | WKLY | 980 |
| Harvard, Ill. | WMCW | 1600 |
| Harvey, Ill. | WBEE | 1570 |
| Hastings, Mich. | WBCH | 1220 |
| Hastings, Minn. | KDWA | 1460 |
| Hastings, Nebr. | KHAS | 1230 |
| | KHCS | 1550 |
| Hattiesburg, Miss. | WBKH | 950 |
| | WFDR | 1400 |
| | WHSY | 1230 |
| | WXXX | 1310 |
| Havelock, N.C. | WUSM | 1330 |
| Haverhill, Mass. | WHAV | 1490 |
| Havre, Mont. | KOJM | 610 |
| 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 |
| Hazelhurst, Ga. | WVOH | 920 |
| Hazlehurst, Miss. | WMDC | 1220 |
| Hazleton, Pa. | WAZL | 1490 |
| Heber Springs, Ark. | | |
| | KAWW | 1370 |
| Helena, Ark. | KFFA | 1360 |
| Helena, Mont. | KCAP | 1340 |
| | KBLL | 1240 |
| Hemet, Calif. | KHSJ | 1320 |
| Hemingway, S.C. | WKYB | 1000 |
| Hempstead, N.Y. | WHLI | 1100 |
| Henderson, Ky. | WSON | 860 |
| Henderson, Nev. | KBMI | 1400 |
| | KTOO | 1280 |
| Henderson, N.C. | WHNC | 890 |
| | WIZS | 1450 |
| Henderson, Tex. | KGRI | 1000 |
| | KWRD | 1470 |
| Hendersonville, N.C. | | |
| | WHKP | 1450 |
| | WHVL | 1600 |
| Henryetta, Okla. | KHEN | 1590 |
| Hereford, Tex. | KPAN | 860 |
| Herkimer, N.Y. | WALY | 1420 |
| Hermiston, Oreg. | KOHU | 1570 |
| Herendon, Va. | WHRN | 1440 |

# WHITE'S RADIO LOG

| Location | C.L. | kHz |
|---|---|---|
| Herrin, Ill. | WJPF | 1340 |
| Hettinger, N.Dak. | KNDC | 1490 |
| Hibbing, Minn. | WMFG | 1240 |
| Hickory, N.C. | WHKY | 1290 |
| | WIRC | 630 |
| | WSPF | 1000 |
| Highland, Ill. | WINU | 1510 |
| Highland Park, Ill. | WEEF | 1430 |
| Highland Park, Tex. | KVIL | 1150 |
| Highland Springs, Va. | WENZ | 1450 |
| High Point, N.C. | WMFR | 1230 |
| | 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 | KPUA | 970 |
| | KIPA | 1110 |
| | KIMO | 850 |
| Hinesville, Ga. | KGML | 990 |
| Hinton, W. Va. | WMTD | 1380 |
| Hobbs, N.Mex. | KWEW | 1480 |
| | KHOB | 1390 |
| Holbrook, Ariz. | KDJI | 1270 |
| Holdenville, Okla. | KVYL | 1370 |
| Holdredge, Nebr. | KUVR | 1380 |
| Holland, Mich. | WHTC | 1450 |
| | WJBL | 1260 |
| Hollister, Cal. | KMPG | 1520 |
| Hollywood, Fla. | WGMA | 1320 |
| Holly Springs, Miss. | WKRA | 1110 |
| Holyoke, Mass. | WREB | 930 |
| Homer, La. | KHAL | 1320 |
| Homestead, Fla. | WIII | 1430 |
| Homewood, Ala. | WJLD | 1400 |
| Honolulu, Hawaii | KAIM | 870 |
| Honolulu, Hawaii | KCCN | 1420 |
| | KGMB | 590 |
| | KZOO | 1210 |
| | KHAI | 1090 |
| | KPOI | 1380 |
| | KIKI | 830 |
| | KGU | 760 |
| | KHVH | 1040 |
| | KKUA | 690 |
| | KNDI | 1270 |
| | KOHO | 1170 |
| | KORL | 650 |
| | KTRG | 990 |
| Hood River, Oreg. | KIHR | 1340 |
| Hope, Ark. | KXAR | 1490 |
| Hopewell, Va. | WHAP | 1340 |
| Hopkinsville, Ky. | WHOP | 1230 |
| | WKOA | 1480 |
| Hoquiam, Wash. | KGHO | 1560 |
| Hornell, N.Y. | WWHG | 1320 |
| | WLEA | 1480 |
| Horseheads, N.Y. | WIQT | 1000 |
| Hot Springs, Ark. | KBHS | 590 |
| | KXOW | 1420 |
| | KZNG | 1340 |
| Hot Springs, S.Dak. | KOBH | 580 |
| Houghton, Mich. | WHDF | 1400 |
| Houghton Lake, Mich. | WHGR | 1290 |
| Houlton, Maine | WHOU | 1340 |
| Houma, La. | KCIL | 1490 |
| Houston, Miss. | WCPC | 940 |
| Houston, Mo. | KBTC | 1250 |
| Houston, Tex. | KCOH | 1430 |
| | KENR | 1070 |
| | KILT | 610 |
| | KNUZ | 1230 |
| | KODA | 1010 |
| | KPRC | 950 |
| | KTHT | 790 |
| | KTRH | 740 |
| | KXYZ | 1320 |
| | KYOK | 1590 |
| Howell, Mich. | WHMI | 1350 |
| Hudson, N.Y. | WHUC | 1230 |
| Hugo, Okla. | KIHN | 1340 |
| 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 |
| | WSAZ | 930 |
| | WWHY | 1470 |
| Huntsville, Ala. | WBHP | 1230 |
| | WEUP | 1600 |
| | WFIX | 1450 |
| | WAAY | 1550 |
| Huntsville, Tex. | KSAM | 1490 |
| Huron, S.Dak. | KIJV | 1340 |
| Hutchinson, Kans. | KWBW | 1450 |
| | KWHK | 1260 |
| Hutchinson, Minn. | KDUZ | 1260 |
| Hyde Park, N.Y. | WHVW | 950 |
| Idabel, Okla. | KBEL | 1240 |
| Idaho Falls, Idaho | KID | 590 |
| | KTEE | 1260 |
| Immokalee, Fla. | WCOF | 1490 |
| Independence, Ia. | KUPI | 980 |
| | KOUR | 1220 |
| Independence, Kans. | KIND | 1010 |
| Independence, Mo. | KCCX | 1510 |
| Indiana, Pa. | WDAD | 1450 |
| Indianapolis, Ind. | WATI | 810 |
| | WBRI | 1500 |
| | WFBM | 1260 |
| | WGEE | 1590 |
| | WIBC | 1070 |
| | WIFE | 1310 |
| | WIRE | 1430 |
| | WXLW | 950 |
| Indianola, Iowa | KBAB | 1490 |
| Indianola, Miss. | WNLA | 1380 |
| Indian Rocks Beach, Fla. | WGNP | 1520 |
| Indio, Calif. | KREO | 1400 |
| Inglewood, Calif. | KTYM | 1460 |
| Inkster, Mich. | WCHB | 1440 |
| International Falls, Minn. | KGHS | 1230 |
| Inverness, Fla. | WYSE | 1560 |
| 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 |
| Ironton, Ohio | WIRO | 1230 |
| Ironwood, Mich. | WJMS | 630 |
| Irvine, Ky. | WIRV | 1550 |
| Isabella, P.R. | WISA | 1390 |
| Ishpeming, Mich. | WJPD | 1240 |
| | WCKD | 970 |
| Islip, N.Y. | WLIX | 540 |
| Ithaca, N.Y. | WHCU | 870 |
| | WTKO | 1470 |
| Iuka, Miss. | WVOM | 1270 |
| Jackson, Ala. | WHOD | 1290 |
| Jackson, Ga. | WJGA | 1540 |
| Jackson, Mich. | WIBM | 1450 |
| | WKHM | 970 |
| | WJCO | 1510 |
| Jackson, Miss. | WJDX | 620 |
| | WJQS | 1400 |
| | WJXN | 1450 |
| | WOKJ | 1550 |
| | WWUN | 1590 |
| | WRBC | 1300 |
| | WSLI | 930 |
| Jackson, Ohio | WLMJ | 1280 |
| Jackson, Tenn. | WDXI | 1310 |
| | WJAK | 1460 |
| | WTJS | 1390 |
| Jackson, Wis. | WYLO | 540 |
| Jackson, Wyo. | KSGT | 1340 |
| Jacksonville, Ark. | KGMR | 1500 |
| Jacksonville, Fla. | WJAX | 930 |
| | WAPE | 690 |
| | WBOM | 970 |
| | WZOK | 1320 |
| | WIVY | 1050 |
| | WMBR | 1460 |
| | WOBS | 1360 |
| | WPDQ | 600 |
| | WQIK | 1090 |
| | WRHC | 1400 |
| Jacksonville, Ill. | WJIL | 1550 |
| | WLDS | 1180 |
| Jacksonville, Miss. | WJQS | 1400 |
| Jacksonville, N.C. | WJNC | 1240 |
| | WLAS | 910 |
| Jacksonville, Tex. | KEBE | 1400 |
| Jacksonville Beh., Fla. | WBIX | 1010 |
| Jamestown, N.Dak. | KEYJ | 1400 |
| | KSJB | 600 |
| Jamestown, N.Y. | WJTN | 1240 |
| | WKSN | 1340 |
| Jamestown, Tenn. | WCLC | 1260 |
| Janesville, Wis. | WCLO | 1230 |
| Jasper, Ala. | WWWB | 1360 |
| | WARF | 1240 |
| Jasper, Ind. | WITZ | 990 |
| Jasper, Tex. | KTXJ | 1350 |
| Jefferson City, Mo. | KLIK | 950 |
| | KWOS | 1240 |
| Jefferson City, Tenn. | WJFC | 1480 |
| Jeffersonville, Ind. | WXVW | 1450 |
| Jena, La. | KCKW | 1480 |
| Jennings, La. | KJEF | 1290 |
| Jerome, Idaho | KART | 1400 |
| Jerseyville, Ill. | WJBM | 1480 |
| Jesup, Ga. | WLOP | 1370 |
| John Day, Ore. | KJDY | 1400 |
| Johnson City, Tenn. | WJCW | 910 |
| | WETB | 790 |
| Johnston, S.C. | WJES | 1570 |
| Johnstown, N.Y. | WIZR | 930 |
| Johnstown, Pa. | WJAC | 850 |
| | WARD | 1490 |
| | WCRO | 1230 |
| Joliet, Ill. | WJOL | 1340 |
| | WJRC | 1510 |
| Joliette, Que. | CJLM | 1350 |
| Jonesboro, Ark. | KBTM | 1230 |
| | KNEA | 970 |
| Jonesboro, La. | KTOC | 920 |
| Jonesboro, Tenn. | WJSO | 1590 |
| Jonesville, La. | KANV | 1480 |
| Joplin, Mo. | WMBH | 1450 |
| | KQYX | 1560 |
| | KFSB | 1310 |
| | KODE | 1230 |
| Joshua Tree, Cal. | KJST | 1420 |
| Junction, Tex. | KMBL | 1450 |
| June. City, Kans. | KJCK | 1420 |
| Juneau, Alaska | KINY | 800 |
| | KJNO | 630 |
| Jupiter, Fla. | WJTS | 1000 |
| Kailua, Hawaii | KLEI | 1130 |
| Kalamazoo, Mich. | WKPR | 1420 |
| | WKZO | 590 |
| | WKLZ | 1470 |
| | WKMI | 1360 |
| Kalispell, Mont. | KGEZ | 600 |
| | KOFI | 930 |
| Kane, Pa. | WKZA | 960 |
| Kankakee, Ill. | WKAN | 1320 |
| Kannapolis, N.C. | WGTL | 870 |
| | WRKB | 1460 |
| Kans. City, Kans. | KCKN | 1340 |
| Kansas City, Mo. | KCMD | 810 |
| | KMBZ | 980 |
| | KPRS | 1590 |
| | WDAF | 610 |
| | WHB | 710 |
| Kaukauna, Wis. | WKAU | 1050 |
| Kenedy-Karnes City, Texas | KAML | 990 |
| Kealakekua, Hawaii | KONA | 790 |
| Kearney, Nebr. | KGFW | 1340 |
| | KRNY | 1460 |
| Keene, N.H. | WKNE | 1290 |
| | WKBK | 1220 |
| Kelso, Wash. | KLOG | 1490 |
| Kemmerer, Wyo. | KMER | 950 |
| Kendallville, Ind. | WAWK | 1140 |
| Kenedy, Tex. | KAML | 990 |
| Kennett, Mo. | KBOA | 830 |
| | KBXN | 1340 |
| Kennewick, Wash. | KSMK | 1340 |
| Kennewick-Pasco-Richland, Wash. | KEPR | 610 |
| Kenosha, Wis. | WLIP | 1050 |
| Kent, O. | WKNT | 1520 |
| Keokuk, Iowa | KOKX | 1310 |
| Kermit, Tex. | KERB | 600 |
| Kerrville, Tex. | KERV | 1230 |
| Kershew, S.C. | WKSC | 1300 |
| Ketchikan, Alaska | KTKN | 930 |
| Kewanee, Ill. | WKEI | 1450 |
| Keyser, W.Va. | WKLP | 1390 |
| Key West, Fla. | WKWF | 1600 |
| | WKIZ | 1500 |
| Kilgore, Tex. | KOCA | 1240 |
| Killeen, Tex. | KLEN | 1050 |
| Kimball, Nebr. | KIMB | 1260 |
| King, N.C. | WKTE | 1090 |
| King City, Calif. | KRKC | 1490 |
| Kingman, Ariz. | KAAA | 1230 |
| Kings Mountain, N.C. | WKMT | 1220 |
| Kingsport, Tenn. | WKIN | 1320 |
| | WKPT | 1550 |
| Kingston, N.Y. | WBAZ | 1550 |
| | WGHQ | 920 |
| | WKNY | 1490 |
| Kingstree, S.C. | WDKD | 1310 |
| | WKSP | 1090 |
| Kingsville, Tex. | KINE | 1330 |
| Kingwood, W.Va. | WFSP | 1560 |
| Kinston, N.C. | WELS | 1010 |
| | WFTC | 960 |
| | WISP | 1230 |
| Kirkland, Wash. | KYAC | 1460 |
| | KBLE | 1050 |
| Kirksville, Mo. | KIRX | 1450 |
| Kissimmee, Fla. | WFIV | 1080 |
| | WJPB | 1220 |
| Kittanning, Pa. | WACB | 1380 |
| Klamath Falls, Oreg. | KAGD | 1150 |
| | KFLW | 1450 |
| | KLAD | 960 |
| Knoxville, Iowa | KNIA | 1320 |
| Knoxville, Tenn. | WBIR | 1240 |
| | WIVK | 850 |
| | WATE | 620 |
| | WKXV | 900 |
| | WNOX | 990 |
| | WROL | 1490 |
| Kokomo, Ind. | WIOU | 1350 |
| Kosciusko, Miss. | WKOZ | 1350 |
| Laconia, N.H. | WLNH | 1350 |
| | WEMJ | 1490 |
| LaCrosse, Wis. | WKBH | 1410 |
| | WLCX | 1490 |
| | WKTY | 580 |
| Ladysmith, Wis. | WLDY | 1340 |
| Lafayette, Ga. | WLFA | 1590 |
| Lafayette, Ind. | WASK | 1450 |
| | WAZY | 1410 |
| | WBAA | 920 |
| Lafayette, La. | KPEL | 1420 |
| | KVOL | 1330 |
| | KXKW | 1520 |
| Lafayette, Tenn. | WEEN | 1460 |
| LaFollette, Tenn. | WLAF | 1450 |
| LaGrande, Oreg. | KLBM | 1450 |
| LaGrange, Ga. | WLAG | 1240 |
| | WTRP | 620 |
| LaGrange, Ill. | WTAQ | 1300 |
| LaGrange, Tex. | KVLG | 1570 |
| LaJunta, Colo. | KBZZ | 1400 |
| Lake Charles, La. | KLOU | 1580 |
| | KPLC | 1470 |
| | KAOK | 1400 |
| Lake City, Fla. | WDSR | 1340 |
| | WGRO | 960 |
| Lake City, S.C. | WJOT | 1260 |
| Lake Geneva, Wis. | WMIR | 1550 |
| Lakeland, Fla. | WLAK | 1430 |
| | WONN | 1230 |
| | WWAB | 1330 |
| Lake Placid, N.Y. | WIRD | 920 |
| Lakeport, Cal. | KBLC | 1270 |
| Lake Providence, La. | KLPL | 1050 |
| Lake Tahoe, Calif. | KOWL | 1490 |
| Lakeview, Oreg. | KQIK | 1230 |
| Lake Wales, Fla. | WIPC | 1280 |
| Lakewood, Colo. | KLAK | 1600 |
| Lakewood Center, Wash. | KFHA | 1480 |
| Lake Worth, Fla. | WLIZ | 1380 |
| Lamar, Colo. | KLMR | 920 |
| Lamesa, Tex. | KPET | 690 |
| Lampasas, Tex. | KCYL | 1450 |
| Lancaster, Calif. | KAVL | 610 |
| | KBVM | 1380 |
| Lancaster, Ky. | WIXI | 1280 |
| Lancaster, N.Y. | WMMJ | 1300 |
| Lancaster, Ohio | WHOK | 1320 |
| Lancaster, Pa. | WGAL | 1490 |
| | WLAN | 1390 |
| Lancaster, S.C. | WLCM | 1360 |
| | WAGL | 1560 |
| Lander, Wyo. | KOVE | 1330 |
| Lanett, Ala. | WRLD | 1490 |
| Langdon, N.D. | KNDK | 1080 |
| Lansdale, Pa. | WNPV | 1440 |
| Lansford, Pa. | WLSH | 1410 |
| Lansing, Mich. | WILS | 1320 |
| | WJIM | 1240 |
| | WITL | 1010 |
| Lapeer, Mich. | WMPC | 1230 |
| | WTHM | 1530 |
| LaPlata, Md. | WSMD | 1560 |
| LaPorte, Ind. | WLOI | 1540 |
| Laramie, Wyo. | KLME | 1490 |
| | KOWB | 1290 |
| Laredo, Tex. | KGNS | 1300 |
| | KVOZ | 1490 |
| Larned, Kans. | KANS | 1510 |
| LaSalle, Ill. | WLPO | 1220 |
| LasCruces, N.Mex. | KOBE | 1450 |
| | KGRT | 570 |
| Las Vegas, Nev. | KENO | 1460 |
| | KLAV | 1230 |
| | KORK | 1340 |
| | KRAM | 920 |
| | KLUC | 1050 |
| | KVEG | 970 |
| Las Vegas, N.Mex. | KFUN | 1230 |
| Latrobe, Pa. | WPKV | 1570 |
| | WQTW | 1570 |
| | WTRA | 1480 |
| Laurel, Md. | WLMD | 900 |
| Laurel, Miss. | WAML | 1340 |
| | WLAU | 1600 |
| | WNSL | 1260 |
| Laurens, S.C. | WLBG | 860 |
| Laurinburg, N.C. | WEWO | 1080 |
| | WLNC | 1300 |
| Lawrence, Kans. | KFKU | 1250 |
| | KLWN | 1320 |
| Lawrence, Mass. | WCCM | 800 |
| Lawrenceburg, Tenn. | WDXE | 1370 |
| Lawrenceville, Ga. | WLAW | 1360 |
| Lawrenceville, Ill. | WAKO | 910 |
| Lawrenceville, Va. | WLES | 580 |
| Lawton, Okla. | KSWO | 1380 |
| | KCCO | 1050 |
| Leadville, Colo. | KBRR | 1230 |
| Leaksville, N.C. | WLDE | 1490 |
| 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 |
| | WZST | 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 |
| Lemmon, S.D. | KBJM | 1400 |
| Lemoore, Calif. | KLAN | 1320 |

| Location | C.L. | kHz |
|---|---|---|
| | KDAD | 1240 |
| Lenoir, N.C. | WJRI | 1348 |
| Lenoir, Tenn. | WLIL | 730 |
| Lenoir City, Tenn. | WBLC | 1360 |
| Leonardtown, Md. | WKIK | 1370 |
| Levelland, Tex. | KLVT | 1230 |
| Levittown, Pa. | WBCB | 1490 |
| Lewisburg, Pa. | WUNS | 1010 |
| Lewisburg, Tenn. | WJJM | 1490 |
| Lewiston, Idaho | KRLC | 1350 |
| | KOZE | 1300 |
| Lewiston, Maine | WCOU | 1240 |
| | WLAM | 1470 |
| Lewistown, Mont. | KXLD | 1230 |
| Lewistown, Pa. | WKVA | 920 |
| | WMRF | 1490 |
| Lexington, Ky. | WLAP | 630 |
| | WBLG | 1300 |
| | WVLK | 590 |
| Lexington, Miss. | WXTN | 1000 |
| Lexington, Mo. | KLEX | 1570 |
| Lexington, Nebr. | KRVN | 1010 |
| Lexington, N.C. | WBUY | 1440 |
| Lexington, Tenn. | WDXL | 1490 |
| Lexington, Va. | WREL | 1450 |
| Lexington Pk., Md. | WPTX | 920 |
| Libby, Mont. | KLCB | 1230 |
| Liberal, Kans. | KSCB | 1270 |
| | KLIB | 1470 |
| Liberty, Ky. | WPHN | 1560 |
| Liberty, Mo. | KBIL | 1140 |
| Liberty, N.Y. | WVOS | 1240 |
| Liberty, Tex. | KPXE | 1050 |
| Lihue, Hawaii | KTOH | 1490 |
| Lima, Ohio | WIMA | 1150 |
| | WCIT | 940 |
| Lincoln, Ill. | WPRC | 1370 |
| Lincoln, Me. | WLKN | 1450 |
| Lincoln, Nebr. | KFOR | 1240 |
| | KLIN | 1400 |
| | KLMS | 1480 |
| | KLOL | 1530 |
| Lincolnton, N.C. | WLON | 1050 |
| 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 |
| | KALO | 1250 |
| | KLRA | 1010 |
| | KOKY | 1440 |
| | KAAY | 1090 |
| | KVLC | 1050 |
| Littleton, Colo. | KDKO | 1510 |
| Littleton, N. H. | WLTN | 1400 |
| Live Oak, Fla. | WNER | 1250 |
| Livingston, Mont. | KPRK | 1340 |
| Livingston, Tenn. | WLIV | 920 |
| Livingston, Tex. | KETX | 1440 |
| Lockhart, Tex. | KHRB | 1060 |
| Lock Haven, Pa. | WBPZ | 1230 |
| Lockport, N.Y. | WUSJ | 1340 |
| Lodi, Calif. | KCVR | 1570 |
| Logan, Utah | KVNU | 610 |
| | KSTU | 1300 |
| | KLGN | 1390 |
| Logan, W.Va. | WLDG | 1230 |
| | WVOW | 1290 |
| Logansport, Ind. | WSAL | 1230 |
| Lompoc, Calif. | KKOK | 1410 |
| | KLOM | 1330 |
| | KNEZ | 960 |
| London, Ky. | WFTG | 1400 |
| Long Beach, Calif. | KFOX | 1280 |
| | KGER | 1390 |
| Longmont, Colo. | KLMO | 1060 |
| Long Prairie, Minn. | KEYL | 1400 |
| Longview, Tex. | KFRO | 1370 |
| | KLUE | 1280 |
| Longview, Wash. | KEDO | 1400 |
| | KBAM | 1270 |
| Lookout Mtn., Tenn. | WFLI | 1070 |
| Lorain, Ohio | WWIZ | 1380 |
| Loretto, Pa. | WWSF | 1400 |
| Loris, S.C. | WLSC | 1570 |
| Los Alamos, N.Mex. | KRSN | 1490 |
| Los Angeles, Calif. | KABC | 790 |
| | KFI | 640 |
| | KHJ | 930 |
| | KFWB | 980 |
| | KGFJ | 1230 |
| | KFAC | 1330 |
| | KLAC | 570 |
| | KMPC | 710 |
| | KNX | 1070 |
| | KPOL | 1540 |
| | KGBS | 1020 |
| | KRKD | 1150 |
| Los Banos, Calif. | KLBS | 1330 |
| Louisburg, N.C. | WYRN | 1480 |
| Louisville, Ga. | WPEH | 1420 |
| Louisville, Ky. | WAVE | 970 |
| | WAKY | 790 |
| | WHAS | 840 |
| | WKLO | 1080 |
| | WINN | 1240 |
| | WFIA | 900 |
| | WLDU | 1350 |
| | WTMT | 620 |
| Louisville, Miss. | WLSM | 1270 |

| Location | C.L. | kHz |
|---|---|---|
| Loveland, Colo. | KLDV | 1570 |
| Loves Park, Ill. | WLUV | 1520 |
| Lovington, N.Mex. | KLEA | 630 |
| Lowell, Mass. | WCAP | 980 |
| | WLLH | 1400 |
| Lubbock, Tex. | KCBD | 1590 |
| | KDAV | 580 |
| | KLBK | 1340 |
| | KFYO | 790 |
| | KLLL | 1460 |
| | KSEL | 950 |
| Lucedale, Miss. | WHHT | 1440 |
| Ludington, Mich. | WKLA | 1450 |
| Lufkin, Tex. | KRBA | 1340 |
| | KTRE | 1420 |
| Lumberton, N.C. | WAGR | 580 |
| | WTSB | 1340 |
| Luray, Va. | WRAA | 1330 |
| Lynchburg, Va. | WLVA | 590 |
| | WLLL | 930 |
| | WDMS | 1320 |
| | WWOD | 1390 |
| | WBRG | 1050 |
| Lynn, Mass. | WLYN | 1360 |
| Lyons, Ga. | WBBT | 1340 |
| Macomb, Ill. | WKAI | 1510 |
| Macon, Ga. | WBML | 1240 |
| | WCRY | 900 |
| | WIBB | 1280 |
| | WMAZ | 940 |
| | WNEX | 1400 |
| Macon, Miss. | WMBC | 1400 |
| Macon, Mo. | KLTI | 1560 |
| Madawaska, Me. | WSJR | 1230 |
| 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 | 750 |
| | WIBA | 1310 |
| | WISM | 1480 |
| | WKOW | 1070 |
| | WMAO | 1550 |
| Madisonville, Ky. | WFMW | 730 |
| | WTTL | 1310 |
| Magee, Miss. | WSJC | 810 |
| Magnolia, Ark. | KVMA | 630 |
| Makawao, Hawaii | KNUI | 1310 |
| Malden, Mo. | KTCB | 1470 |
| Malone, N.Y. | WICY | 1490 |
| Malvern, Ark. | KBOK | 1310 |
| Manassas, Va. | WPRW | 1460 |
| Manati, P.R. | WMNT | 1500 |
| Manchester, Ga. | WINF | 1230 |
| Manchester, Ga. | WFDR | 1370 |
| Manchester, Ky. | WWXL | 1450 |
| Manchester, N.H. | WFEA | 1370 |
| | WGIR | 610 |
| | WKBR | 1250 |
| Manchester, Tenn. | WMSR | 1320 |
| Manhattan, Kans. | KSAC | 580 |
| | KMAN | 1350 |
| Manistee, Mich. | WMTE | 1340 |
| Manistique, Mich. | WTIQ | 1490 |
| Manitou Springs, Colo. | KCMS | 1490 |
| Manitowoc, Wis. | WCUB | 980 |
| | WOMT | 1240 |
| Mankato, Minn. | KYSM | 1230 |
| | KTOE | 1420 |
| Manning, S.C. | WYMB | 1410 |
| Mansfield, La. | KDXI | 1360 |
| Mansfield, Ohio | WMAN | 1400 |
| | WCLW | 1140 |
| Maplewood, Minn. | WRCR | 1010 |
| Maquoketa, Iowa | KMAQ | 1320 |
| Marathon, Fla. | WFFG | 1300 |
| Marianna, Ark. | KZOT | 1460 |
| Marianna, Fla. | WTYS | 1340 |
| | WTOT | 980 |
| Marietta, Ga. | WFOM | 1230 |
| | WBIE | 1080 |
| Marietta, Ohio | WMOA | 1490 |
| | WBRJ | 910 |
| Marino City, Mich. | WSMA | 1590 |
| | WMAM | 570 |
| Marion, Ala. | WJAM | 1310 |
| Marion, Ill. | WGGH | 1150 |
| Marion, Ind. | WBAT | 1400 |
| | WMRI | 860 |
| Marion, N.C. | WBRM | 1250 |
| Marion, Ohio | WMRN | 1490 |
| Marion, S.C. | WATP | 1480 |
| Marion, Va. | WMEV | 1010 |
| | WOLD | 133 |
| Marked Tree, Ark. | KPCA | 1580 |
| Marksville, La. | KAPB | 1370 |
| Marlborough, Mass. | WSRO | 1470 |
| Marquette, Mich. | WONJ | 1320 |
| Marshall, Mich. | WMRR | 1540 |
| Marshall, Minn. | KMHL | 1400 |
| Marshall, Mo. | KMMO | 1300 |
| Marshall, N.C. | WMMH | 1460 |
| Marshall, Tex. | KMHT | 1450 |
| | KDOX | 1410 |
| Marshalltown, Iowa | KFJB | 1230 |
| Marshfield, Wis. | WDLB | 1450 |
| Martin, Tenn. | WCMT | 1410 |
| Martinsville, Ind. | WCBK | 1540 |

| Location | C.L. | kHz |
|---|---|---|
| Martinsburg, W.Va. | WEPM | 1340 |
| Martinsville, Va. | WHEE | 1370 |
| | WMVA | 1450 |
| Maryville, Mo. | KNIM | 1580 |
| Marysville, Calif. | KMYC | 1410 |
| Marysville, Kans. | KNDY | 1570 |
| Maryville, Tenn. | WGAP | 1400 |
| Mason, Mich. | WUNN | 1110 |
| Mason City, Iowa | KGLO | 1300 |
| | KRIB | 1490 |
| | KSMN | 1010 |
| Massena, N.Y. | WMSA | 1340 |
| | WYBG | 1050 |
| Massillon, Ohio | WTIG | 990 |
| 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. | WNGD | 1320 |
| Mayodan, N.C. | WMYN | 1420 |
| Mayville, N.D. | KMAV | 1520 |
| Maysville, Ky. | WFTM | 1240 |
| McAlester, Okla. | KTMC | 1400 |
| | KNED | 1150 |
| McAllen, Tex. | KRIO | 910 |
| McCall, Ida. | KMCL | 1240 |
| McCamey, Tex. | KAMY | 1450 |
| McComb, Miss. | WHNY | 1250 |
| | WAPF | 980 |
| McCook, Nebr. | KBRL | 1300 |
| | KICX | 1360 |
| McGehee, Ark. | KVSA | 1220 |
| McKeesport, Pa. | WEDO | 810 |
| | WMCK | 1360 |
| McKenzie, Tenn. | WHDM | 1440 |
| McKinney, Tex. | KYAL | 1600 |
| McLeansboro, Ill. | WMCL | 1060 |
| McMinnville, Oreg. | KMCM | 1260 |
| McMinnville, Tenn. | WBMC | 960 |
| | WAKI | 1230 |
| McPherson, Kans. | KNEX | 1540 |
| McRae, Ga. | WDAX | 1410 |
| Meadville, Pa. | WMGW | 1490 |
| Medford, Mass. | WHIL | 1430 |
| Medford, Oreg. | KMED | 1440 |
| | KSHA | 860 |
| | KDOV | 1300 |
| | KBOY | 730 |
| | KYJC | 1230 |
| Medford, Wis. | WIGM | 1490 |
| Media, Pa. | WXUR | 690 |
| Melbourne, Fla. | WMMB | 1240 |
| Memphis, Tenn. | WHBQ | 560 |
| | KBGH | 1130 |
| | WHER | 1430 |
| | WMC | 790 |
| | WDIA | 1070 |
| | WMPS | 680 |
| | WLOK | 1340 |
| | WMQM | 1480 |
| | WREC | 600 |
| | KWAM | 990 |
| Memphis, Tex. | KBGH | 1130 |
| Mena, Ark. | KENA | 1450 |
| Mendota, Ill. | WGLC | 1090 |
| Mendocino, Cal. | KMFB | 1520 |
| Menominee, Mich. | WAGN | 1340 |
| Menomonie, Wis. | WMNE | 1360 |
| Merced, Calif. | KYOS | 1480 |
| | KWIP | 1580 |
| Meriden, Conn. | WMMW | 1470 |
| Meridian, Miss. | WCOC | 910 |
| | WDAL | 1330 |
| | WMOX | 1010 |
| | WOKK | 1450 |
| | WQIC | 1390 |
| Merkle, Tex. | KWFA | 1500 |
| Merrill, Wis. | WXMT | 730 |
| Mesa, Ariz. | KBUZ | 1310 |
| | KALF | 1510 |
| Metropolis, Ill. | WMOK | 920 |
| Metter, Ga. | WMAC | 1360 |
| Mexia, Tex. | KBUS | 1590 |
| Mexico, Mo. | KXEO | 1340 |
| Mexico, Pa. | WJUN | 1220 |
| Miami, Ariz. | KIKO | 1340 |
| Miami, Fla. | WGBS | 710 |
| | WIOD | 610 |
| | WFAB | 990 |
| | WAME | 1260 |
| | WMIE | 1140 |
| | WQAM | 560 |
| | WQCN | 1450 |
| | WINZ | 940 |
| Miami, Okla. | KGLC | 910 |
| Miami Beach, Fla. | WMBM | 1490 |
| | WKAT | 1360 |
| Michigan City, Ind. | WIMS | 1420 |
| Middlebury, Vt. | WFAD | 1490 |
| Middleport-Pomeroy, 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, Tex. | KCRS | 550 |

| Location | C.L. | kHz |
|---|---|---|
| | KJBC | 1150 |
| | KWEL | 1440 |
| | KABH | 1510 |
| Milan, Tenn. | WKBJ | 1600 |
| Miles City, Mont. | KATL | 1340 |
| Milford, Conn. | WFIF | 1500 |
| Milford, Del. | WKSB | 930 |
| Milford, Mass. | WMRC | 1490 |
| Milledgeville, Ga. | WMVG | 1450 |
| Millen, Ga. | WGSR | 1570 |
| Millington, Tenn. | WGMM | 1380 |
| Millinocket, Me. | WMKR | 1240 |
| Millville, N.J. | WMVB | 1440 |
| Milton, Fla. | WEBY | 1330 |
| | WSRA | 1490 |
| Milton, Pa. | WMLP | 1380 |
| | WARC | 1380 |
| Milwaukee, Wis. | WEMP | 1250 |
| | WFDX | 860 |
| | WRIT | 1340 |
| | WISN | 1150 |
| | WMIL | 1290 |
| | WOKY | 920 |
| | WTMJ | 620 |
| Minden, La. | KASO | 1240 |
| Mineola, N.Y. | WTHE | 1520 |
| Mineola, Tex. | KMOO | 1510 |
| Mineral Wells, Tex. | KORC | 1140 |
| Minneapolis, Minn. | WCCO | 830 |
| | WLOL | 1330 |
| | WMIN | 1400 |
| | WDGY | 1130 |
| | WWTC | 1280 |
| | KTCR | 690 |
| | KTIS | 900 |
| | KUOM | 770 |
| | KSTP | 1500 |
| Minot, N. Dak. | KLPM | 1390 |
| | KHRT | 1320 |
| | KCJB | 910 |
| Mission, Kans. | KBEA | 1480 |
| Mission, Tex. | KIRT | 1580 |
| Missoula, Mont. | KGVO | 1290 |
| | KGMY | 1450 |
| | KYLT | 1340 |
| | KYSS | 910 |
| Mitchell, S.Dak. | KORN | 1490 |
| Moab, Utah | KURA | 1450 |
| Moberly, Mo. | KNCM | 1230 |
| Mobile, Ala. | WUNI | 1410 |
| | WABB | 1480 |
| | WGDK | 900 |
| | WMOO | 1550 |
| | WTUF | 840 |
| | WKRG | 710 |
| | WLIQ | 1360 |
| | WMOZ | 960 |
| Mobridge, S.Dak. | KOLY | 1300 |
| Mocksville, N.C. | WDSL | 1520 |
| Modesto, Calif. | KTRB | 860 |
| | KBEE | 970 |
| | KFIV | 1360 |
| Mojave, Calif. | KOOL | 1340 |
| Moline, Ill. | WQUA | 1230 |
| Monahans, Tex. | KVKM | 1330 |
| Moncks Corner, S. C. | WBER | 950 |
| Monett, Mo. | KRMO | 990 |
| Monette, Ark. | KBIB | 1560 |
| Monmouth, Ill. | WRAM | 1330 |
| Monroe, Ga. | WMRE | 1490 |
| Monroe, La. | KMLB | 1440 |
| | KLIC | 1230 |
| | KNOE | 540 |
| Monroe, Mich. | WQTE | 560 |
| Monroe, N.C. | WMAP | 1060 |
| Monroe, Wis. | WEKZ | 1260 |
| Monroeville, Ala. | WMFC | 1360 |
| Monterey, Calif. | KIDD | 630 |
| | KMBY | 1240 |
| Montevideo, Minn. | KDMA | 1460 |
| Monte Vista, Colo. | KSLV | 1240 |
| Montezuma, Ga. | WMNZ | 1050 |
| Montgomery, Ala. | WBAM | 740 |
| | WAPX | 1600 |
| | WCOV | 1170 |
| | WFMI | 1500 |
| | WHHY | 1440 |
| | WMGY | 800 |
| | WRMA | 950 |
| Montgomery, W.Va. | WMON | 1340 |
| Monticello, Ark. | KHBM | 1430 |
| Monticello, Fla. | WWSD | 1090 |
| Monticello, Ky. | WFLW | 1360 |
| Montpelier, Ida. | KVSI | 1450 |
| Montpelier-Barre, Vt. | WSKI | 1240 |
| Montrose, Colo. | KUBC | 580 |
| Montrose, Pa. | WPEL | 1250 |
| Mooresville, N.C. | WHIP | 1350 |
| Moorhead, Minn. | KVOX | 1280 |
| Morehead, Ky. | WMOR | 1330 |
| Morehead City, N.C. | WMBL | 740 |
| Morgan City, La. | KMRC | 1430 |
| Morganfield, Ky. | WMSK | 1550 |
| Morgantown, N.C. | WMNC | 1430 |
| Morgantown, W.Va. | WAJR | 1440 |
| | WCLG | 1300 |
| Morrilton, Ark. | KVOM | 800 |
| Morris, Ill. | WCSJ | 1550 |
| Morris, Minn. | KMRS | 1230 |

# WHITE'S RADIO LOG

| Location | C.L. | kHz |
|---|---|---|
| Morristown, N.J. | WMTR | 1250 |
| Morristown, Tenn. | WCRK | 1150 |
| | WMTN | 1300 |
| Morton, Tex. | KRAN | 1280 |
| Moscow, Idaho | KRPL | 1400 |
| Moses Lake, Wash. | KSEM | 1470 |
| | KWIQ | 1260 |
| Moss Point, Miss. | WACY | 1460 |
| Moulton, Ala. | WLCB | 1530 |
| Moultrie, Ga. | WMGA | 1400 |
| | WMTM | 1300 |
| Moundsville, W.Va. | WEIF | 1370 |
| Mountain Grove, Mo. | KLRS | 1360 |
| Mountain Home, Ark. | KTLO | 1240 |
| Mountain Home, Ida. | KFLI | 1240 |
| Mt. Airy, N.C. | WPAQ | 740 |
| | WSYD | 1300 |
| Mt. Carmel, Ill. | WVMC | 1360 |
| Mt. Clemens, Mich. | WBRB | 1430 |
| Mt. Dora, Fla. | WVGT | 1580 |
| Mt. Holly, N.J. | WJJZ | 1460 |
| 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 |
| | WERK | 990 |
| Munfordville, Ky. | WLOC | 1150 |
| Munising, Mich. | WGON | 1400 |
| Murfreesboro, N. C. | WWDR | 1080 |
| Murfreesboro, Tenn. | WGNS | 1450 |
| | WMTS | 810 |
| Murphy, N.C. | WCVP | 600 |
| | WKRK | 1320 |
| Murphysboro, Ill. | WINI | 1420 |
| Murray, Ky. | WNBS | 1340 |
| Murray, Utah | KMOR | 1230 |
| Muscatine, Iowa | KWPC | 860 |
| Muscle Shoals City, Ala. | WLAY | 1450 |
| Muskegon, Mich. | WKBZ | 850 |
| | WKJR | 1520 |
| | WTRU | 1600 |
| | WMUS | 1090 |
| Muskogee, Okla. | KBIX | 1490 |
| | KMUS | 1380 |
| Myrtle Beach, S.C. | WMYB | 1450 |
| | WTGR | 1520 |
| Nacogdoches, Tex. | KEEE | 1230 |
| | KSFA | 860 |
| Nampa, Idaho | KFXD | 580 |
| | KAIN | 1340 |
| 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 |
| | WMAK | 1300 |
| | WNAH | 1360 |
| | WSIX | 980 |
| | WSM | 650 |
| | WWGM | 1560 |
| Nassau, Bahamas | ZNS-2 | 1240 |
| Natchez, Miss. | WMIS | 1240 |
| | WNAT | 1450 |
| Natchitoches, La. | KNOC | 1450 |
| Naugatuck, Conn. | WOWW | 1380 |
| Navasota, Tex. | KWBC | 1550 |
| Nebraska City, Nebr. | KNCY | 1600 |
| Needles, Calif. | KSFE | 1340 |
| Neenah, Wis. | WNAM | 1280 |
| Nellisville, Wis. | WCCN | 1370 |
| Neon, Ky. | WNKY | 1480 |
| Neosho, Mo. | KBTN | 1420 |
| Nevada, Mo. | KNEM | 1240 |
| New Albany, Ind. | WHEL | 1570 |
| | WREY | 1290 |
| New Albany, Miss. | WNAU | 1470 |
| Newark, Del. | WNRK | 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 |
| New Bern, N.C. | WHIT | 1450 |
| | WRNB | 1490 |
| Newberry, Mich. | WNBY | 1450 |
| Newberry, S.C. | WKDK | 1240 |
| New Boston, Ohio | WIOI | 1010 |
| New Braunfels, Tex. | KGNB | 1420 |
| New Britain, Conn. | WRCH | 910 |
| | WRYM | 840 |
| New Brunswick, N.J. | WCTC | 1450 |
| Newburgh, N.Y. | WGNY | 1220 |
| Newburyport, Mass. | WNBP | 1470 |
| New Castle, Ind. | WCTW | 1550 |
| New Castle, Pa. | WKST | 1280 |
| Newcastle, Wyo. | KASL | 1240 |
| New City, N. Y. | WRKL | 910 |
| New Haven, Conn. | WAVZ | 1300 |
| | WELI | 960 |
| | WNHC | 1340 |
| New Iberia, La. | KANE | 1240 |
| | KNIR | 1360 |
| New Kensington, Pa. | WKPA | 1150 |
| New London, Conn. | WNLC | 1510 |
| New Martinsville, W. Va. | WETZ | 1330 |
| Newnan, Ga. | WCOH | 1400 |
| | WNEA | 1300 |
| New Orleans, La. | WDSU | 1280 |
| | WNNR | 990 |
| | WBOK | 800 |
| | WNOE | 1060 |
| | WSMB | 1350 |
| | WNPS | 1450 |
| | WSHO | 1230 |
| | WTIX | 690 |
| | WWL | 870 |
| | WWOM | 600 |
| | WYLD | 940 |
| Newport, Ark. | KNBY | 1280 |
| 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 |
| | WTID | 1270 |
| Newport Richey, Fla. | WGUL | 1500 |
| New Richmond, Wis. | WIXK | 1590 |
| New Roads, La. | KWRG | 1500 |
| New Rochelle, N.Y. | WVOX | 1460 |
| New Smyrna Beach, Fla. | WSBB | 1230 |
| | WOGO | 1550 |
| Newton, Iowa | KCOB | 1280 |
| Newton, Kans. | KJRG | 950 |
| Newton, Mass. | WNTN | 1550 |
| Newton, Miss. | WBKN | 1410 |
| Newton, N.J. | WNNJ | 1360 |
| Newton, N.C. | WNNC | 1280 |
| New Ulm, Minn. | KNUJ | 860 |
| New York, N.Y. | WABC | 770 |
| | WAOO | 1280 |
| | WBNX | 1380 |
| | WCBS | 880 |
| | WEVD | 1330 |
| | WHN | 1050 |
| | WHOM | 1480 |
| | WINS | 1010 |
| | WLIB | 1190 |
| | WMCA | 570 |
| | WNBC | 660 |
| | WNEW | 1130 |
| | WNYC | 830 |
| | WOR | 710 |
| | WPOW | 1330 |
| | WWRL | 1600 |
| Niagara Falls, N.Y. | WHLD | 1270 |
| | WJJL | 1440 |
| Nicholasville, Ky. | WNVL | 1250 |
| Niles, Mich. | WNIL | 1290 |
| Niles, Ohio | WNIO | 1540 |
| Nogales, Ariz. | KFBR | 1340 |
| Nome, Alaska | KICY | 850 |
| Norfolk, Nebr. | WJAG | 780 |
| Norfolk, Va. | WTAR | 790 |
| | WCMS | 1050 |
| | WNOR | 1230 |
| | WRAP | 850 |
| Normal, Ill. | WIOK | 1440 |
| Norman, Okla. | WNAD | 640 |
| | KNOR | 1400 |
| Norristown, Pa. | WNAR | 1110 |
| N. Adams, Mass. | WMNB | 1230 |
| N. Atlanta, Ga. | WRNG | 680 |
| N. Augusta, S.C. | WGUS | 1380 |
| | WFNL | 1600 |
| N. Bend, Ore. | KBBR | 1340 |
| North Charleston, S.C. | WNCG | 910 |
| Northampton, Mass. | WHMP | 1400 |
| North East, Pa. | WHYP | 1530 |
| Northfield, Minn. | WCAL | 770 |
| N. Little Rock, Ark. | KOXE | 1380 |
| | KXLR | 1150 |
| North Platte, Nebr. | KJLT | 970 |
| | KNOP | 1410 |
| | KODY | 1240 |
| No. Syracuse, N.Y. | WSOQ | 1220 |
| N. Vernon, Ind. | WOCH | 1460 |
| No. Wilkesboro, N.C. | WKBC | 810 |
| Norton, Kans. | KNBI | 1530 |
| Norton, Va. | WNVA | 1350 |
| Norwalk, Conn. | WNLK | 1350 |
| Norwalk, O. | WLKR | 1510 |
| 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, Cal. | KNEW | 910 |
| | KABL | 960 |
| | KDIA | 1310 |
| Oakland, Md. | WMSG | 1050 |
| Oakland Park, Fla. | WIXX | 1520 |
| Oak Park, Ill. | WOPA | 1490 |
| Oak Ridge, Tenn. | WATO | 1290 |
| Ocala, Fla. | WMOP | 900 |
| | WTMC | 1290 |
| | WWKE | 1370 |
| Ocean City, Md. | WETT | 1590 |
| Ocean City, Somers Pt., N.J. | WSLT | 1520 |
| Oceanlake, Oreg. | KBCH | 1380 |
| Oceanside, Calif. | KUDE | 1320 |
| Ocilla, Ga. | WSIZ | 1380 |
| Oconto, Wis. | WOCO | 1260 |
| Odessa, Tex. | WBZB | 920 |
| | KOSA | 1230 |
| | KOYL | 1310 |
| | KRIG | 1410 |
| Oelwein, Iowa | KOEL | 950 |
| Ogallala, Nebr. | KOGA | 930 |
| Ogden, Utah | KLO | 1430 |
| | KANN | 1090 |
| | KSVN | 730 |
| | KVOG | 1490 |
| Ogdensburg, N.Y. | WSLB | 1400 |
| Oil City, Pa. | WKRZ | 1340 |
| Okeechobee, Fla. | WOKC | 1570 |
| Okla. City, Okla. | KBYE | 890 |
| | KLPR | 1140 |
| | KOCY | 1340 |
| | KOMA | 1520 |
| | KTOK | 1000 |
| | KJEM | 800 |
| | WKY | 930 |
| Okmulgee, Okla. | KOKL | 1240 |
| Old Saybrook, Conn. | WLIS | 1420 |
| Olean, N.Y. | WMNS | 1360 |
| | WHDL | 1450 |
| Olney, Ill. | WVLN | 740 |
| Olympia, Wash. | KGY | 1240 |
| | KITN | 920 |
| Omaha, Nebr. | KBON | 1490 |
| | KFAB | 1110 |
| | KOIL | 1290 |
| | KOOO | 1420 |
| | KOWH | 660 |
| | WOW | 590 |
| 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 |
| Opelousas, La. | KSLO | 1230 |
| 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 |
| | WORG | 1580 |
| | WTND | 920 |
| Orange Park, Fla. | WAYR | 550 |
| Ord, Neb. | KNLV | 1060 |
| Oregon City, Ore. | KYMN | 1520 |
| Orlando, Fla. | WDBO | 580 |
| | WHOO | 990 |
| | WHIY | 1270 |
| | WLOF | 950 |
| | WKIS | 740 |
| 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 |
| Oshkosh, Wis. | WOSH | 1490 |
| Oskaloosa, Iowa | KBOE | 740 |
| Oswego, N.Y. | WSGO | 1440 |
| Othello, Wash. | KRSC | 1400 |
| Otsego, Mich. | WAOP | 980 |
| Ottawa, Ill. | WCMY | 1430 |
| Ottawa, Kans. | KOFO | 1220 |
| Ottumwa, Iowa | KBIZ | 1240 |
| | KLEE | 1480 |
| Owatonna, Minn. | KRFO | 1390 |
| Owego, N.Y. | WEBO | 1330 |
| Owensboro, Ky. | WOMI | 1490 |
| | WVJS | 1420 |
| Owosso, Mich. | WOAP | 1080 |
| Oxford, Miss. | WSUH | 1420 |
| Oxford, N.C. | WDXF | 1340 |
| Oxnard, Calif. | KOXR | 910 |
| Ozark, Ala. | WOZK | 900 |
| Paducah, Ky. | WDXR | 1560 |
| | WKYX | 570 |
| | WPAD | 1450 |
| Page, Ariz. | KPGE | 1340 |
| Painesville, Ohio | WPVL | 1460 |
| Paintsville, Ky. | WSIP | 1490 |
| Palatka, Fla. | WWPF | 1260 |
| | WSUZ | 800 |
| Palestine, Tex. | KNET | 1450 |
| Palm Bch., Fla. | WQXT | 1340 |
| Palm Sprgs., Calif. | KCMJ | 1010 |
| | KDES | 920 |
| | KPAL | 1450 |
| Palmdale, Calif. | KUTY | 1470 |
| Palm Desert, Cal. | KGOL | 1270 |
| Palo Alto, Calif. | KIBE | 1220 |
| Pampa, Tex. | KPDN | 1340 |
| | KGRO | 1230 |
| Panama Beach, Fla. | WGNE | 1480 |
| | WSCM | 1290 |
| Panama City, Fla. | WDLP | 590 |
| | WPCF | 1430 |
| Paoli, Ind. | WVAK | 1560 |
| Paradise, Cal. | KEWQ | 930 |
| Paragould, Ark. | KDRS | 1490 |
| Paris, Ark. | KCCL | 1460 |
| Paris, Ill. | WPRS | 1440 |
| Paris, Ky. | WPDE | 1440 |
| Paris, Tenn. | WTPR | 710 |
| Paris, Tex. | KPLT | 1490 |
| | KFTV | 1250 |
| Parkersburg, W.Va. | WCEF | 1050 |
| | WPAR | 1450 |
| | WTAP | 1230 |
| Park Falls, Wis. | WPFP | 1450 |
| Park Rapids, Minn. | KPRM | 1240 |
| Parsons, Kans. | KLKC | 1540 |
| Pasadena, Cal. | KPPC | 1240 |
| | KRLA | 1110 |
| | KWKW | 1300 |
| Pasadena, Tex. | KLVL | 1420 |
| | KIKK | 650 |
| Pascagoula-Moss Point, Miss. | WPMP | 1580 |
| Pasco, Wash. | KORD | 910 |
| Paso Robles, Calif. | KPRL | 1230 |
| Pastillo, P.R. | WCGB | 1050 |
| Patchogue, L.I., N.Y. | WALK | 1370 |
| | WPAC | 1580 |
| Paterson, N.J. | WPAT | 930 |
| Pauls Valley, Okla. | KVLH | 1470 |
| Pawhuska, Okla. | KOSG | 1500 |
| Pawtucket, R.I. | WXTR | 550 |
| Payette, Ida. | KYET | 1450 |
| Pearsall, Tex. | KVWG | 1280 |
| Pecos, Tex. | KIUN | 1400 |
| Peekskill, N.Y. | WLNA | 1420 |
| Pekin, Ill. | WSIV | 1140 |
| Pell City, Ala. | WFHK | 1430 |
| Pendleton, Oreg. | KTIX | 1240 |
| Pennington Gap, Va. | KUMA | 1290 |
| Pensacola, Fla. | WSWV | 1570 |
| | WBOP | 980 |
| | WBSR | 1540 |
| | WMEL | 610 |
| | WNVY | 1230 |
| | WCOA | 1370 |
| Peoria, Ill. | WXCL | 1350 |
| | WMBD | 1470 |
| | WIRL | 1290 |
| | WPEO | 1020 |
| Perry, Fla. | WPRY | 1400 |
| | WGKR | 1310 |
| Perry, Ga. | WPGA | 980 |
| Perry, Iowa | KDLS | 1310 |
| Perryton, Tex. | KEYE | 1400 |
| Peru, Ind. | WARU | 1600 |
| Petaluma, Calif. | KTOB | 1490 |
| Petersburg, Va. | WSSV | 1240 |
| Petoskey, Mich. | WMBN | 1340 |
| | WJML | 1110 |
| Phenix City, Ala. | WPNX | 1460 |
| Philadelphia, Miss. | WHOC | 1490 |
| Philadelphia, Pa. | KYW | 1060 |
| | WCAU | 1210 |
| | WDAS | 1480 |
| | WFIL | 560 |
| | WFLN | 900 |
| | WHAT | 1340 |
| | WHOC | 1490 |
| | WIBG | 990 |
| | WIP | 610 |
| | WPEN | 950 |
| | WRCP | 1540 |
| | WTEL | 860 |
| Phillipsburg, Pa. | WPHB | 1260 |
| Phillipsburg, Kans. | KKAN | 1490 |
| Phoenix, Ariz. | KIFN | 860 |
| | KASA | 1540 |
| | KCAC | 1010 |

| Location | C.L. | kHz |
|---|---|---|
| | KHAT | 1480 |
| | KHEP | 1280 |
| | KMEO | 740 |
| | KOY | 550 |
| | KOOL | 960 |
| | KPHD | 910 |
| | KRIZ | 1230 |
| | KTAR | 620 |
| | KXIV | 1400 |
| Phoenix City, Ala. | | |
| | WPNX | 1460 |
| Pickens, S.C. | WKKR | 1540 |
| Piedmont, Ala. | WPID | 1280 |
| Piedmont, Mo. | KPWB | 1140 |
| Pierre, S.D. | KGFX | 1080 |
| | KCCR | 1240 |
| Pikeville, Ky. | WLSI | 900 |
| | WPKE | 1240 |
| Pine Bluff, Ark. | KCLA | 1400 |
| | KADL | 1270 |
| | KOTN | 1490 |
| | KCAT | 1530 |
| | KPBA | 1590 |
| Pine City, Minn. | WCMP | 1350 |
| Pineville, Ky. | WANO | 1230 |
| 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 |
| | KSEK | 1340 |
| Pittsburgh, Pa. | KDKA | 1020 |
| | KQV | 1410 |
| | WAMO | 860 |
| | WJAS | 1320 |
| | WPIT | 730 |
| | WTAE | 1250 |
| | WEEP | 1080 |
| | WWSW | 970 |
| Pittsfield, Ill. | WBBA | 1580 |
| Pittsfield, Mass. | WBEC | 1420 |
| | WBRK | 1340 |
| Pittston, Pa. | WPTS | 1540 |
| Plainfield, N.J. | WERA | 1590 |
| Plainview, Tex. | KVOP | 1400 |
| Plant City, Fla. | WPLA | 910 |
| Platteville, Wis. | WSWW | 1590 |
| Plattsburg, N.Y. | WEAV | 980 |
| | WIRY | 1340 |
| Pleasanton, Tex. | KBOP | 1380 |
| Pleasantville, N.J. | WOND | 1400 |
| Plymouth, Ind. | WTCA | 1050 |
| Plymouth, Mass. | WPLM | 1390 |
| Plymouth, N.C. | WPNC | 1470 |
| Plymouth, N.H. | WPNH | 1300 |
| Plymouth, Wis. | WPLY | 1420 |
| Pocahontas, Ark. | KPOC | 1420 |
| Pocatello, Idaho | KSEI | 930 |
| | KWIK | 1240 |
| | KSNN | 1290 |
| Pocomoke City, Md. | WDMV | 540 |
| Pomona, Calif. | KWOW | 1600 |
| | KKAR | 1220 |
| Pompton Lakes, N. J. | WKER | 1500 |
| Pompano Beach, Fla. | | |
| | WLOD | 980 |
| | WRBD | 1470 |
| Ponca City, Okla. | WBBZ | 1230 |
| Ponce, P.R. | WPRP | 910 |
| | WEUC | 1420 |
| | WPAB | 550 |
| | WLEO | 1170 |
| | WISO | 1260 |
| Pontiac, Ill. | WPOK | 1080 |
| Pontiac, Mich. | WPON | 1460 |
| Pontotoc, Miss. | WSEL | 1440 |
| Pooli, Ind. | WVAK | 1560 |
| Poplar Bluff, Mo. | KWOC | 930 |
| | KLID | 1340 |
| Poplarville, Miss. | WRPM | 1530 |
| Portage, Mich. | WTPS | 1560 |
| Portage, Pa. | WWML | 1470 |
| Portage, Wis. | WPDR | 1350 |
| Portageville, Mo. | KMIS | 1050 |
| Portales, N.Mex. | KENM | 1450 |
| Port Angeles, Wash. | KAPY | 1000 |
| | KONP | 1450 |
| Port Arthur, Tex. | KOLE | 1340 |
| | KPAC | 1250 |
| Porterville, Calif. | KTIP | 1450 |
| Port Hueneme, Calif. | KACY | 1520 |
| Port Huron, Mich. | WHLS | 1450 |
| | WTTH | 1380 |
| Port Jervis, N.Y. | WDLC | 1490 |
| Port Lavaca, Tex. | KGUL | 1560 |
| Portland, Ind. | WPGW | 1440 |
| Portland, Maine | WCSH | 970 |
| | WGAN | 560 |
| | WLOB | 1310 |
| | WPOR | 1490 |
| Portland, Oreg. | KBPS | 1450 |
| | KBEV | 1010 |
| | KLIQ | 1290 |
| | KEX | 1190 |
| | KGW | 620 |
| | KOIN | 970 |
| | KPAM | 1410 |
| | KPDQ | 800 |
| | KPOJ | 1330 |
| | KWJJ | 1080 |
| | KXL | 750 |
| Port Neches, Tex. | KPNG | 1150 |
| Portsmouth, N.H. | WBBX | 1380 |
| | WHEB | 750 |
| Portsmouth, Ohio | WPAY | 1400 |
| | WNXT | 1260 |
| Portsmouth, Va. | WHIH | 1400 |
| | WPMH | 1010 |
| | WAVY | 1350 |
| Port Sulphur, La. | KPBC | 1510 |
| Port Washington, Wis. | | |
| | WGLB | 1560 |
| Post, Tex. | KPOS | 1370 |
| Poteau, Okla. | KLCO | 1280 |
| Potomac-Cabin John, Md. | | |
| | WXLN | 950 |
| Potosi, Mo. | KYRO | 1280 |
| Potsdam, N.Y. | WPDM | 1470 |
| Pottstown, Pa. | WPAZ | 1370 |
| Pottsville, Pa. | WPAM | 1450 |
| | WPPA | 1360 |
| Poughkeepsie, N.Y. | WEOK | 1390 |
| | WKIP | 1450 |
| Powell, Wyo. | KPOW | 1260 |
| Poynette, Wis. | WIBU | 1240 |
| Prairie du Chien, Wis. | | |
| | WPRE | 980 |
| Pratt, Kan. | KWNS | 1290 |
| Prentiss, Miss. | WKPO | 1510 |
| Prescott, Ariz. | KYCA | 1490 |
| | KENT | 1340 |
| | KNOT | 1450 |
| Prescott, Ark. | KTPA | 1370 |
| Presque Isle, Me. | WAGM | 950 |
| | WEGP | 1390 |
| Preston, Idaho | KPST | 1340 |
| Preston, Minn. | KFIL | 1060 |
| Prestonsburg, Ky. | WPRT | 960 |
| | WDOC | 1310 |
| Price, Utah | KOAL | 1230 |
| Prichard, Ala. | WZAM | 1270 |
| Prince Albert, Sask. | CKBI | 900 |
| Princeton, Ill. | WZOE | 1490 |
| Princeton, Ind. | WRAY | 1250 |
| Princeton, Ky. | WPKY | 1580 |
| Princeton, Minn. | WKPM | 1300 |
| Princeton, N.J. | WHWH | 1350 |
| Princeton, W.Va. | WLOH | 1490 |
| Prineville, Oreg. | KRCO | 690 |
| Prosser, Wash. | KARY | 1310 |
| Providence, R.I. | WEAN | 790 |
| | WHIM | 1110 |
| | WICE | 1290 |
| | WJAR | 920 |
| | WLKW | 990 |
| | WPRO | 630 |
| | WRIB | 1220 |
| Provo, Utah | KIXX | 1400 |
| | KEYY | 1450 |
| | KOVO | 960 |
| Pryor, Okla. | KOLS | 1570 |
| Pueblo, Colo. | KDZA | 1230 |
| | KAPI | 690 |
| | KCSJ | 590 |
| | KFEL | 970 |
| Pueblo, Colo. | KKAM | 1350 |
| | KPUB | 1480 |
| Pulaski, Tenn. | WKSR | 1420 |
| Pulaski, Va. | WPUV | 1580 |
| Pullman, Wash. | KWSC | 1250 |
| | KPUL | 1150 |
| Punta Gorda, Fla. | WCCF | 1580 |
| Punxsutawney, Pa. | WPME | 1540 |
| Putnam, Conn. | WINY | 1350 |
| Puyallup, Wash. | KAYE | 1450 |
| Quanah, Tex. | KQLJ | 1150 |
| Quantico, Va. | WQVA | 1530 |
| Quincy, Calif. | KQCY | 500 |
| Quincy, Fla. | WCNH | 1280 |
| Quincy, Ill. | WGEM | 1440 |
| | WTAD | 930 |
| Quincy, Mass. | WJDA | 1300 |
| Quincy, Wash. | KPOR | 1370 |
| Quitman, Ga. | WSFB | 1490 |
| Racine, Wis. | WRAC | 1460 |
| | WRJN | 1400 |
| Radford, Va. | WRAD | 1460 |
| Raeford, N.C. | WSHB | 1400 |
| Rainsville, Ala. | WVSM | 1500 |
| Raleigh, N.C. | WKIX | 850 |
| | WYNA | 1550 |
| | WPTF | 680 |
| | WLLE | 570 |
| | WRNC | 1240 |
| Ralls, Tex. | KCLR | 1530 |
| Rantoul, Ill. | WRTL | 1460 |
| Rapid City, S.Dak. | KOTA | 1380 |
| | KIMM | 1150 |
| | KRSD | 1340 |
| | KEZU | 920 |
| Raton, N.Mex. | KRTN | 1490 |
| Ravenswood, W.Va. | WMOV | 1360 |
| Rawlins, Wyo. | KRAL | 1240 |
| Raymond, Wash. | KAPA | 1340 |
| Raymondville, Tex. | KSOX | 1240 |
| Rayville, La. | KRIH | 990 |
| Reading, Pa. | WEEU | 850 |
| | WHUM | 1240 |
| | WRAW | 1340 |
| Redding, Calif. | KRDG | 1230 |
| | KAHR | 1350 |
| | KQMS | 1400 |
| | KVCV | 600 |
| | KVIP | 540 |
| Red Bluff, Calif. | KBLF | 1490 |
| Redfield, S.Dak. | KFCB | 1380 |
| Redlands, Calif. | KCAL | 1410 |
| Red Lion, Pa. | WGCB | 1440 |
| Red Lodge, Mont. | KRBN | 1450 |
| Redmond, Oreg. | KPRB | 1240 |
| Red Oak, Ia. | KOAK | 1080 |
| Red Wing, Minn. | KCUE | 1250 |
| Redwood Falls, Minn. | | |
| | KLGR | 1490 |
| Reedsburg, Wis. | WRDB | 1400 |
| Reedsport, Oreg. | KRAF | 1470 |
| Reidsville, N.C. | WFRC | 1600 |
| | WREV | 1220 |
| Remsen, N.Y. | WADR | 1480 |
| Reno, Nev. | KOH | 630 |
| | KBET | 1340 |
| | KOLO | 920 |
| | KONE | 1450 |
| | KCBN | 1230 |
| Rensselaer, Ind. | WRIN | 1560 |
| Rensselaer, N.Y. | WEEE | 1300 |
| Renton, Wash. | KREN | 1420 |
| Rexburg, Idaho | KRXK | 1230 |
| Rhinelander, Wis. | WOBT | 1240 |
| Rice Lake, Wis. | WJMC | 1240 |
| Richfield, Minn. | WPBC | 980 |
| Richfield, Utah | KSVC | 980 |
| Richland, Wash. | KALE | 960 |
| Richland, Wis. | WRCO | 1450 |
| Richlands, Va. | WRIC | 540 |
| Richmond, Ind. | WKBV | 1490 |
| Richmond, Ky. | WEKY | 1340 |
| Richmond, Va. | WANT | 990 |
| | WBBL | 1480 |
| | WRGM | 1540 |
| | WLEE | 1480 |
| | WEET | 1320 |
| | WGOE | 1590 |
| | WTVR | 1380 |
| | WRNL | 910 |
| | WRVA | 1140 |
| | WXGI | 950 |
| | WRGM | 1540 |
| Richwood, W.Va. | WVAR | 600 |
| Ridgecrest, Calif. | KRCK | 1360 |
| | KLOA | 1240 |
| Ridgeland, S.C. | WBUG | 1430 |
| Rifle, Colo. | KWSR | 810 |
| Rio Piedras, P.R. | WUNO | 1320 |
| | WRAI | 1190 |
| Ripley, Miss. | WSCA | 1260 |
| 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 |
| Riviera Beach, Fla. | WHEW | 1600 |
| Roanoke, Ala. | WELR | 1360 |
| Roanoke, Va. | WDBJ | 960 |
| | WRIS | 1410 |
| | WPXI | 910 |
| | WROV | 1240 |
| | WSLS | 610 |
| Roanoke Rapids, N.C. | | |
| | WCBT | 1230 |
| Roaring Sprgs., Pa. | | |
| | WKMC | 1370 |
| Roberval, Que. | CHRL | 910 |
| Robinson, Ill. | WTAY | 1570 |
| Robstown, Tex. | KROB | 500 |
| Rochelle, Ill. | WRHL | 1060 |
| Rochester, Minn. | KROC | 1340 |
| | KWEB | 1270 |
| | KOLM | 1520 |
| Rochester, N.H. | WWNH | 930 |
| Rochester, N.Y. | WBBF | 950 |
| | WHAM | 1180 |
| | WHEC | 1460 |
| | WNYR | 680 |
| | WSAY | 1370 |
| | WROC | 1280 |
| Rockford, Ill. | WROK | 1440 |
| | WYFE | 1150 |
| | WRRR | 1330 |
| Rockford, Mich. | WJPW | 810 |
| Rock Hill, S.C. | WRHI | 1340 |
| | WTYC | 1150 |
| Rockingham, N.C. | WAYN | 900 |
| Rock Island, Ill. | WHBF | 1270 |
| Rockland, Maine | WRKD | 1450 |
| Rockmart, Ga. | WPLK | 1220 |
| Rock Springs, Wyo. | KVRS | 1360 |
| Rockville, Conn. | WRKV | 800 |
| Rockville, Md. | WINX | 1600 |
| Rockwood, Tenn. | WRKH | 580 |
| Rocky Ford, Colo. | KAVI | 1320 |
| Rocky Mount, N.C. | WCEC | 810 |
| | WEED | 1390 |
| | 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 |
| | WIYN | 1360 |
| | WRGA | 1470 |
| | WROM | 710 |
| Rome, N.Y. | WKAL | 1450 |
| | WRNY | 1350 |
| Ronceverte, W.Va. | WRON | 1400 |
| Roseau, Minn. | KRWB | 1410 |
| Roseburg, Oreg. | KRNR | 1490 |
| | KQEN | 1240 |
| | KRXL | 1250 |
| | KYES | 950 |
| Rosenberg, Tex. | KFRD | 980 |
| Roswell, N.M. | KRDD | 1320 |
| Rossville, Ga. | WRIP | 980 |
| Roswell, N.Mex. | KRSY | 1230 |
| | KGFL | 1430 |
| | KBIM | 910 |
| | KRDD | 1320 |
| | KRIK | 960 |
| | KSWS | 1020 |
| 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 | 810 |
| Rutland, Vt. | WHWB | 1000 |
| | WSYB | 1380 |
| Rutherfordton, N.C. | | |
| | WCAB | 1520 |
| Sacramento, Calif. | KCRA | 1320 |
| | KFBK | 1530 |
| | KGMS | 1380 |
| | KJAY | 1430 |
| | KRAK | 1140 |
| | KROY | 1240 |
| | KXOA | 1470 |
| Safford, Ariz. | KGLU | 1480 |
| | KATO | 1230 |
| Sag Harbor, N.Y. | WLNG | 1600 |
| Saginaw, Mich. | WKNX | 1210 |
| | WSAM | 1400 |
| | WSGW | 790 |
| St. Albans, Vt. | WWSR | 1420 |
| St. Albans, W.Va. | WKLC | 1300 |
| St. Anthony, Ida. | KIGO | 1400 |
| St. Augustine, Fla. | WFOY | 1240 |
| | WETH | 1420 |
| St. Charles, Mo. | KADY | 1460 |
| St. Cloud, Minn. | KFAM | 1450 |
| | WJON | 1240 |
| Ste. Genevieve, Mo. | KSGM | 1340 |
| St. George, S.C. | WQIZ | 810 |
| St. George, Utah | KDXU | 1450 |
| St. Helen, Mich. | WMIC | 1590 |
| St. Helens, Oreg. | KOHI | 1600 |
| St. Ignace, Mich. | WIDG | 940 |
| St. Johns, Mich. | WRBJ | 1580 |
| St. Johnsbury, Vt. | WTWN | 1340 |
| St. Joseph, Mich. | WSJM | 1400 |
| St. Joseph-Benton Harbor, Mich. | WHFB | 1060 |
| St. Joseph, Mo. | KFEQ | 680 |
| | KKJO | 1550 |
| | KUSN | 1270 |
| St. Louis, Mo. | KATZ | 1600 |
| | KMOX | 1120 |
| | KSD | 550 |
| | KSTL | 690 |
| | KWK | 1380 |
| | KXOK | 630 |
| | WEW | 770 |
| | WIL | 1430 |
| | KXEN | 1010 |
| St. Louis Park, Minn. | | |
| | KRSI | 950 |
| St. Mary's, Pa. | WKBI | 1400 |
| St. Paul, Minn. | KSTP | 1500 |
| | KDWB | 630 |
| | WMIN | 1400 |
| | WMKT | 1370 |
| | WCCO | 830 |
| St. Pauls, N.C. | WBYB | 1060 |
| St. Peter, Minn. | KRBI | 1310 |
| St. Petersburg, Fla. | WPIN | 680 |
| | WSUN | 620 |
| | WLCY | 1380 |
| St. Petersburg Beach, Fla. | | |
| | WILZ | 1590 |
| Salamanca, N.Y. | WGGO | 1590 |
| Salem, Ill. | WJBD | 1350 |
| Salem, Ind. | WSLM | 1220 |
| Salem, Mass. | WESX | 1230 |
| Salem, Mo. | KSMO | 1340 |
| Salem, N. J. | WJIC | 1510 |
| Salem, O. | WSOM | 600 |
| Salem, Oreg. | KSLM | 1390 |
| | KAPT | 1220 |
| | KBZY | 1490 |
| | KGAY | 1430 |
| Salem, Va. | WBLU | 1480 |
| Salida, Colo. | KVRH | 1340 |
| Salina, Kans. | KSAL | 1150 |
| | KFRM | 550 |
| | KISI | 910 |
| Salinas, Calif. | KDON | 1460 |
| | KSBW | 1380 |
| Salinas, Calif. | KCTY | 980-1000 |
| Salinas, P.R. | WHOY | 1210 |
| Saline, Mich. | WOIB | 1290 |
| Salisbury, Md. | WBOC | 960 |

# WHITE'S RADIO LOG

| Location | C.L. | kHz |
|---|---|---|
| | WICO | 1320 |
| | WJDY | 1470 |
| Salisbury, N.C. | WSTP | 1490 |
| | WSAT | 1280 |
| Salmon, Idaho | KSRA | 960 |
| Salt Lake City, Utah | | |
| | KALL | 910 |
| | KCPX | 1320 |
| | KLUB | 570 |
| | KNAK | 1280 |
| | KRSP | 1060 |
| | KSL | 1160 |
| | KSOP | 1370 |
| | KSXX | 630 |
| | KWHO | 860 |
| | KWIC | 1550 |
| San Angelo, Tex. | KTEO | 1340 |
| | KGKL | 960 |
| | KPEP | 1420 |
| | KWFR | 1260 |
| San Antonio, Tex. | KAPE | 1480 |
| | KBAT | 680 |
| | KBER | 1150 |
| | KBUC | 1310 |
| | KCOR | 1350 |
| | KEDA | 1540 |
| | KITE | 930 |
| | KUKA | 1250 |
| | KMAC | 630 |
| | KONO | 860 |
| | KTSA | 550 |
| | WOAI | 1200 |
| San Bernardino, Calif. | | |
| | KCKC | 1350 |
| | KFXM | 590 |
| | KRNO | 1240 |
| | KMEN | 1290 |
| Sandersville, Ga. | WSNT | 1490 |
| San Diego, Calif. | KCBQ | 1170 |
| | KFMB | 760 |
| | KOGO | 600 |
| | KGB | 1360 |
| | KSON | 1240 |
| | KSDO | 1130 |
| Sandpoint, Idaho | KSPT | 1400 |
| Sand Spring, Okla. | KTOW | 1340 |
| Sandusky, Mich. | WMIC | 1560 |
| Sandusky, Ohio | WLEC | 1450 |
| San Fernando, Calif. | KGIL | 1260 |
| Sanford, Fla. | WTRR | 1400 |
| Sanford, Me. | WSME | 1220 |
| Sanford, N.C. | WEYE | 1290 |
| | WWGP | 1050 |
| San Francisco, Calif. | | |
| | KFRC | 610 |
| | KCBS | 740 |
| | KFAX | 1100 |
| | KGO | 810 |
| | KNBR | 680 |
| | KKHI | 1550 |
| | KSAY | 1010 |
| | KSFO | 560 |
| | KSOL | 1450 |
| | KYA | 1260 |
| San Gabriel, Cal. | KAIL | 1430 |
| San German, P. R. | WRJS | 1060 |
| Sanitobia, Miss. | WSAO | 1550 |
| San Jose, Calif. | KLOK | 1170 |
| | KLIV | 1590 |
| | KEEN | 1370 |
| | KXRX | 1500 |
| San Juan, P.R. | WAPA | 680 |
| | WBMJ | 1190 |
| | WHOA | 870 |
| | WIAC | 740 |
| | WIPR | 940 |
| | WKAQ | 580 |
| | WKVM | 810 |
| | WKYN | 630 |
| | WITA | 1140 |
| San Luis Obispo, Calif. | | |
| | KATY | 1340 |
| | KSLY | 1400 |
| | KVEC | 920 |
| San Marcos, Tex. | KCNY | 1470 |
| San Mateo, Calif. | KOFY | 1050 |
| San Rafael, Calif. | KTIM | 1510 |
| San Saba, Tex. | KBAL | 1410 |
| San Sebastion, P.R. | | |
| | WFBA | 1460 |
| Santa Ana, Calif. | KWIZ | 1480 |
| Santa Barbara, Cal. | KDB | 1490 |
| | KGUD | 990 |
| | KIST | 1340 |
| | KTMS | 1250 |
| | KACL | 1290 |
| Santa Clara, Calif. | KGNU | 1430 |
| Santa Cruz, Calif. | KSCO | 1080 |
| Santa Fe, N.Mex. | KTRC | 1400 |
| | KAFE | 810 |
| | KVSF | 1260 |
| Santa Maria, Cal. | KCOY | 1400 |
| | KSMA | 1240 |
| | KSEE | 1480 |
| | KZON | 1600 |
| 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 |
| Sarasota, Fla. | WKXY | 930 |
| | WSAF | 1220 |
| | WSPB | 1450 |
| | WYND | 1280 |
| Saratoga, N.Y. | WSPN | 900 |
| Saratoga Springs, N.Y. | | |
| | WKAJ | 900 |
| Sauk Rapids, Minn. | | |
| | WVAL | 800 |
| Sault Ste. Marie, Mich. | | |
| | WSOO | 1230 |
| Savannah, Ga. | WBYG | 1450 |
| | WEAS | 900 |
| | WSAV | 630 |
| | WSGA | 1400 |
| | WTOC | 1290 |
| | WSOK | 1230 |
| Savannah, Tenn. | WORM | 1010 |
| Sayre, Pa. | WATS | 960 |
| Scheffield, Ala. | WSHF | 1290 |
| Schenectady, N.Y. | WGY | 810 |
| | WSNY | 1240 |
| Scotland Neck, N.C. | WYAL | 1280 |
| Scott City, Kans. | KFLA | 1310 |
| Scottsbluff, Nebr. | KNEB | 960 |
| | KOLT | 1320 |
| Scottsboro, Ala. | WCRI | 1050 |
| | WROS | 1330 |
| Scottsdale, Ariz. | KDOT | 1440 |
| Scottsville, Ky. | WLCK | 1250 |
| Scranton, Pa. | WARM | 590 |
| | WEJL | 630 |
| | WGBI | 910 |
| | WICK | 1400 |
| | WSCR | 1320 |
| Seaford, Del. | WSUX | 1280 |
| Searcy, Ark. | KWCB | 1300 |
| Seattle, Wash. | KAYO | 1150 |
| | KIXI | 910 |
| | KING | 1090 |
| | KIRO | 710 |
| | KJR | 950 |
| | KOL | 1300 |
| | KOMO | 1000 |
| | KETO | 1590 |
| | KTW | 1250 |
| | KVI | 570 |
| | KXA | 770 |
| | KBLE | 1050 |
| Sebring, Fla. | WJCM | 960 |
| | WSEB | 1340 |
| Sedalia, Mo. | KDRO | 1340 |
| | KSIS | 1050 |
| Seguin, Tex. | KWED | 1580 |
| Selinsgrove, Pa. | WSEW | 1240 |
| Selma, Ala. | WGWC | 1340 |
| | WHBB | 1490 |
| | WTQX | 1570 |
| Selma, N.C. | WBZB | 1090 |
| Selmer, Tenn. | WDTM | 1130 |
| Seminole, Tex. | KTFO | 1250 |
| Senatobia, Miss. | WSAO | 1550 |
| Seneca Township, S.C. | | |
| | WSNW | 1150 |
| Sevierville, Tenn. | WSEV | 930 |
| Seward, Alaska | KIBH | 950 |
| Seymour, Ind. | WJCD | 1390 |
| Seymour, Tex. | KSEY | 1230 |
| Shakopee, Minn. | KSMM | 1530 |
| Shallotte, N.C. | WVCB | 1410 |
| Shamokin, Pa. | WISL | 1480 |
| Shamrock, Tex. | KBYP | 1580 |
| Sharon, Pa. | WPIC | 790 |
| Shawano, Wis. | WTCH | 960 |
| Shawnee, Okla. | KGFF | 1450 |
| Sheboygan, Wis. | WHBL | 1330 |
| | WKTS | 950 |
| Sheffield, Ala. | WSHF | 1290 |
| Shelby, Mont. | KSEN | 1150 |
| Shelby, N.C. | WOHS | 730 |
| | WADA | 1390 |
| Shelbyville, Ind. | WSVL | 1520 |
| Shelbyville, Ky. | WCND | 940 |
| Shelbyville, Tenn. | WHAL | 1400 |
| | WLIJ | 1580 |
| Sheldon, Iowa | KIWA | 1550 |
| Shelton, Wash. | KMAS | 1280 |
| Shenandoah, Iowa | KMA | 960 |
| Shenandoah, Pa. | WMBT | 1530 |
| Sheridan, Wyo. | KWYO | 1410 |
| | KROE | 930 |
| Sherman, Tex. | KRRV | 910 |
| | KTXO | 1500 |
| Shippensburg, Pa. | WSHP | 1480 |
| Show Low, Ariz. | KVWM | 970 |
| Shreveport, La. | KANB | 1300 |
| | KBCL | 1220 |
| | KEEL | 710 |
| | KOKA | 1550 |
| | KJOE | 1480 |
| | KCIJ | 980 |
| | KRMD | 1340 |
| | KWKH | 1130 |
| Sidney, Mont. | KGCX | 1480 |
| Sidney, Nebr. | KSID | 1340 |
| Sidney, O. | WMVR | 1080 |
| Sierra Vista, Ariz. | KHFH | 1420 |
| Sikeston, Mo. | KSIM | 1400 |
| | KMPL | 1520 |
| Siler City, N.C. | WNCA | 1570 |
| Siloam Sprgs., Ark. | KUOA | 1290 |
| Silsbee, Tex. | KKAS | 1300 |
| Silver City, N.Mex. | KSIL | 1340 |
| Silver Sprgs., Md. | WQMR | 1050 |
| Simcoe, Ont. | CFRS | 1560 |
| Sinton, Tex. | KTOD | 1590 |
| Sioux City, Iowa | KSCJ | 1360 |
| | KMNS | 620 |
| | KTRI | 1470 |
| Sioux Falls, S.Dak. | KISD | 1230 |
| | KELO | 1320 |
| | KNWC | 1270 |
| | KSOO | 1140 |
| Sitka, Alaska | KIFW | 1230 |
| | KSEW | 1400 |
| Skowhegan, Maine | WGHM | 1150 |
| Slaton, Tex. | KCAS | 1050 |
| Slidell, La. | WBGS | 1560 |
| Smithfield, N.C. | WMPM | 1270 |
| Smithville, Tenn. | WJLE | 1480 |
| Smyrna, Ga. | WYNX | 1550 |
| Snyder, Tex. | KSNY | 1450 |
| Socorro, N.Mex. | KSRC | 1290 |
| Soda Springs, Ida. | KBRV | 790 |
| Soldatna, Alaska | KSRM | 920 |
| Somerset, Ky. | WSFC | 1240 |
| | WTLO | 1480 |
| Somerset, Pa. | WVSC | 990 |
| Sonora, Calif. | KVML | 1450 |
| Sonora, Tex. | KCKG | 1240 |
| So. Bend, Ind. | WNDU | 1490 |
| | WJVA | 1580 |
| | WSBT | 960 |
| Southbridge, Mass. | WESO | 970 |
| So. Boston, Va. | WHLF | 1400 |
| Southern Pines, N.C. | WEEB | 990 |
| South Charleston, W. Va. | | |
| | WRDS | 1410 |
| South Daytona Beach, Fla. | | |
| | WELE | 1590 |
| So. Gastonia, N.C. | WGAS | 1420 |
| So. Haven, Mich. | WJOR | 940 |
| So. Knoxville, Tenn. | WSKT | 1580 |
| S. Miami, Fla. | WFUN | 790 |
| So. Paris, Me. | WKTQ | 1450 |
| So. Pittsburg, Tenn. | WEPG | 910 |
| So. St. Paul, Minn. | | |
| | KDWB | 630 |
| | WMKT | 1370 |
| So. Williamsport, Pa. | | |
| | WMPT | 1450 |
| Spanish Fork, Utah | KONI | 1480 |
| Sparks, Nev. | KBUB | 1270 |
| Sparta, Ill. | WHCO | 1230 |
| Sparta, N.C. | WCOK | 1060 |
| Sparta, Tenn. | WSMT | 1050 |
| Sparta, Wis. | WKLJ | 990 |
| | WCOW | 1290 |
| Spartanburg, S.C. | WHCQ | 1400 |
| | WORD | 910 |
| | WSPA | 950 |
| | WASC | 1530 |
| Spencer, Iowa | KICD | 1240 |
| Spencer, W.Va. | WVRC | 1400 |
| Spokane, Wash. | KGA | 1510 |
| | KDNC | 1440 |
| | KSPO | 1230 |
| | KPEG | 1380 |
| | KHQ | 590 |
| | KJRB | 790 |
| | KREM | 970 |
| | KXLY | 920 |
| | KCFA | 1330 |
| | KUDY | 1280 |
| Springdale, Ark. | KBRS | 1340 |
| | KSPR | 1590 |
| Springfield, Ill. | WCVS | 1450 |
| | WMAY | 970 |
| | WTAX | 1240 |
| Springfield, Mass. | WHYN | 560 |
| | WMAS | 1450 |
| | WSPR | 1270 |
| Springfield, Mo. | KGBX | 1260 |
| | KICK | 1340 |
| | KTTS | 1400 |
| | KWTO | 560 |
| Springfield, Ohio | WIZE | 1340 |
| | WBLY | 1600 |
| Springfield-Eugene, Ore. | | |
| | KEED | 1450 |
| | KORE | 1050 |
| Springfield, Tenn. | WDBL | 1590 |
| Springfield, Vt. | WCFR | 1480 |
| Springhill, La. | KBSF | 1460 |
| Spring Lake, N. C. | | |
| | WFBS | 1450 |
| Spring Valley, N.Y. | | |
| | WRRC | 1300 |
| Spruce Pine, N.C. | WTOE | 1470 |
| Stamford, Conn. | WSTC | 1400 |
| Stamford, Tex. | KDWT | 1400 |
| Stanford, Ky. | WRSL | 1520 |
| Starke, Fla. | WPXE | 1490 |
| Starkville, Miss. | WSSO | 1230 |
| State College, Pa. | WMAJ | 1450 |
| | WRSC | 1390 |
| Statesboro, Ga. | WWNS | 1240 |
| Statesville, N.C. | WSIC | 1400 |
| | WDBM | 550 |
| Staunton, Va. | WTON | 1240 |
| | WAFC | 900 |
| Stephenville, Tex. | KSTV | 1510 |
| Sterling, Colo. | KGEK | 1230 |
| | KOLR | 1490 |
| Sterling, Ill. | WSDR | 1240 |
| Steubenville, Ohio | WSTV | 1340 |
| Stevens Point, Wis. | WSPT | 1010 |
| Stillwater, Minn. | WAVN | 1220 |
| Stillwater, Okla. | KSPI | 780 |
| Stockton, Calif. | KJOY | 1280 |
| | KSTN | 1420 |
| | KWG | 1230 |
| Storm Lake, Iowa | KAYL | 990 |
| Streator, Ill. | WIZZ | 1250 |
| Stroudsburg, Pa. | WVPO | 840 |
| Stuart, Fla. | WSTU | 1450 |
| Stuart, Va. | WHEO | 1270 |
| Sturgeon Bay, Wis. | WDOR | 910 |
| Sturgis, Mich. | WSTR | 1230 |
| Sturgis, S.D. | KBHB | 810 |
| Stuttgart, Ark. | KWAK | 1240 |
| Suffolk, Va. | WLPM | 1450 |
| Sullivan, Ind. | WKQV | 1550 |
| Sullivan, Mo. | KTUI | 1560 |
| Sulphur, La. | KIKS | 1310 |
| Sulphur Sprgs., Tex. | KSST | 1230 |
| Summerville, Ga. | WGTA | 950 |
| Summerville, S.C. | WAZS | 980 |
| Sumner, Wash. | KDFL | 1560 |
| Sumter, S.C. | WFIG | 1290 |
| | WDXY | 1240 |
| | WSSC | 1340 |
| Sunbury, Pa. | WKOK | 1070 |
| Sunnyside, Wash. | KREW | 1230 |
| Sun Valley, Ida. | KSKI | 1340 |
| Superior, Nebr. | KRFS | 1600 |
| Superior, Wis. | WDSM | 710 |
| | WIGL | 970 |
| | WWJC | 1270 |
| | WAXK | 1320 |
| Susanville, Calif. | KSUE | 1240 |
| Sutton, W. Va. | WSGB | 1490 |
| Swainsboro, Ga. | WJAT | 800 |
| Sweetwater, Tenn. | WDEH | 800 |
| Sweetwater, Tex. | KXOX | 1240 |
| Sylacauga, Ala. | WFEB | 1340 |
| | WMLS | 1290 |
| Sylva, N.C. | WMSJ | 1480 |
| Sylvania, Ga. | WSYL | 1490 |
| Sylvester, Ga. | WOGA | 1540 |
| Syracuse, N.Y. | WHEN | 620 |
| | WFBL | 1390 |
| | WNDR | 1260 |
| | WOLF | 1490 |
| | WSYR | 570 |
| Tabor City, N.C. | WTAB | 1370 |
| Tacoma, Wash. | KMO | 1360 |
| | KTAC | 850 |
| | KTNT | 1400 |
| | KVI | 570 |
| Taft, Calif. | KTKR | 1310 |
| Tahlequah, Okla. | KTLQ | 1350 |
| Tahoe Valley, Calif. | | |
| | KTHO | 590 |
| Talladega, Ala. | WEYY | 1580 |
| | WNUZ | 1230 |
| Tallahassee, Fla. | WMEN | 1330 |
| | WONS | 1410 |
| | WTAL | 1450 |
| | WTNT | 1270 |
| Tallassee, Ala. | WTLS | 1300 |
| Tallulah, La. | KTLD | 1360 |
| Tampa, Fla. | WALT | 1110 |
| | WDAE | 1250 |
| | WYOU | 1550 |
| | WFLA | 970 |
| | WHBO | 1050 |
| | WINQ | 1010 |
| | WTMP | 1150 |
| | WSOL | 1300 |
| Taos, N. Mex. | KKIT | 1340 |
| Tarboro, N.C. | WCPS | 760 |
| Tarpon Springs, Fla. | | |
| | WCWR | 1470 |
| Tasley, Va. | WESR | 1330 |
| Taunton, Mass. | WPEP | 1570 |
| Tawas City, Mich. | WIOS | 1480 |
| Taylor, Tex. | KTAE | 1260 |
| Taylorsville, N. C. | WSTH | 860 |
| | WTLK | 1570 |
| Taylorville, Ill. | WTIM | 1410 |
| Tazewell, Tenn. | WNTT | 1250 |
| Tazewell, Va. | WTZE | 1470 |
| Tell City, Ind. | WTCJ | 1230 |
| Tempe, Ariz. | KUPD | 1060 |
| | KYND | 1580 |
| Temple, Tex. | KTEM | 1400 |
| Terre Haute, Ind. | WBOW | 1230 |
| | WAAC | 1300 |
| | WTHI | 1480 |
| Terrell, Tex. | KTER | 1570 |
| Terrytown, Nebr. | KEYR | 690 |
| Texarkana, Ark. | KOSY | 790 |
| Texarkana, Tex. | KCMC | 740 |
| | KATQ | 940 |
| | KTFS | 1400 |

| Location | C.L. | kHz |
|---|---|---|
| Texas City, Tex. | KTLW | 920 |
| Thayer, Mo. | KALM | 1290 |
| The Dalles, Oreg. | KODL | 1440 |
| | KACI | 1300 |
| Thermopolis, Wyo. | KRTR | 1490 |
| | KTHE | 1240 |
| Thief River Falls, Minn. | KTRF | 1230 |
| Thibodaux, La. | KTIB | 630 |
| Thomaston, Ga. | WSFT | 1220 |
| | WTGA | 1590 |
| | WTHN | 1500 |
| Thomasville, Ala. | WJDB | 630 |
| Thomasville, Ga. | WPAX | 1240 |
| | WLDR | 730 |
| Thomasville, N.C. | WTNC | 790 |
| Thomson, Ga. | WTWA | 1240 |
| Three Rivers, Mich. | WLKM | 1510 |
| Thurmont, Md. | WTHU | 1450 |
| Ticonderoga, N.Y. | WIPS | 1250 |
| Tiffin, Ohio | WTTF | 1600 |
| Tifton, Ga. | WTIF | 1340 |
| | WWGS | 1430 |
| Tillamook, Oreg. | KTIL | 1590 |
| Tioga, N.D. | KTGO | 1090 |
| Titusville, Fla. | WRMF | 1050 |
| Titusville, Pa. | WTIV | 1230 |
| Toccoa, Ga. | WLET | 1420 |
| | WNES | 630 |
| Toledo, Ohio | WOHO | 1470 |
| | WSPO | 1370 |
| | WTOD | 1560 |
| | WCWA | 1230 |
| | WTTO | 1520 |
| Toledo, Oreg. | KTDD | 1230 |
| Tolleson, Ariz. | KRDS | 1190 |
| Tomah, Wis. | WTMB | 1460 |
| Tompkinsville, Ky. | WTKY | 1370 |
| Tooele, Utah | KDYL | 990 |
| Topeka, Kans. | WIBW | 580 |
| | KEWI | 1440 |
| | WREN | 1250 |
| | KTOP | 1490 |
| Toppenish, Wash. | KENE | 1490 |
| Torrington, Conn. | WTOR | 610 |
| Torrington, Wyo. | KGOS | 1490 |
| Towanda, Pa. | WTTC | 1550 |
| Towson, Md. | WTOW | 1570 |
| Trail, B.C. | CJAT | 610 |
| Travelers Rest, S.C. | WBBR | 1580 |
| Traverse City, Mich. | WTCM | 1400 |
| | WCCW | 1310 |
| Trenton, Mo. | KTTN | 1600 |
| Trenton, N.J. | WAAT | 1300 |
| | WBUD | 1260 |
| | WTTM | 920 |
| Trenton, Tenn. | WTNE | 1500 |
| Trinidad, Colo. | KCRT | 1240 |
| Troy, Ala. | WTBF | 970 |
| Troy, N.Y. | WHAZ | 1330 |
| | WTRY | 980 |
| | WXKW | 1600 |
| Troy, N. C. | WJRM | 1390 |
| Truckee, Calif. | KHOE | 1400 |
| Trumann, Ark. | KTMN | 1530 |
| Truth or Consequences, New Mexico | KCHS | 1400 |
| Tryon, N.C. | WTYN | 1550 |
| Tucson, Ariz. | KTUC | 1400 |
| | KXEW | 1600 |
| | KAIR | 1490 |
| | KCEE | 790 |
| | KTAN | 580 |
| | KCUB | 1290 |
| | KEVT | 690 |
| | KHOS | 940 |
| | KMOP | 1330 |
| | KFIF | 1550 |
| | KTKT | 990 |
| | KOLD | 1450 |
| Tucumcari, N.Mex. | KTNM | 1400 |
| Tulare, Calif. | KCOK | 1270 |
| | KGEN | 1370 |
| Tulia, Tex. | KTUE | 1260 |
| Tullahoma, Tenn. | WJIG | 740 |
| Tulsa, Okla. | KAKC | 970 |
| | KOME | 1300 |
| | KRMG | 740 |
| | KELI | 1430 |
| | KVOO | 1170 |
| | KFMJ | 1050 |
| Tupelo, Miss. | WELO | 580 |
| | WTUP | 1490 |
| Turlock, Calif. | KCEY | 1390 |
| Tuscaloosa, Ala. | WJRD | 1150 |
| | WACT | 1420 |
| | WNPT | 1280 |
| | WTUG | 790 |
| | WTBC | 1230 |
| Tuscumbia, Ala. | WVNA | 1590 |
| | WRCK | 1410 |
| Tuskegee, Ala. | WABT | 580 |
| Twenty-Nine Palms, Calif. | KDHI | 1250 |
| Twin Falls, Idaho | KTFI | 1270 |
| | KLIX | 1310 |
| | KEEP | 1450 |
| Two Rivers, Wis. | WTRW | 1590 |
| Tyler, Tex. | KZAK | 1330 |
| | KOOK | 1490 |
| | KTBB | 600 |
| | KZEY | 690 |
| Tyrone, Pa. | WTRN | 1340 |
| Uhrichsville, Ohio | WUND | 1540 |
| | WBTC | 1540 |
| Ukiah, Calif. | KUKI | 1400 |
| | KMSL | 1250 |
| Ulysses, Kan. | KULY | 1420 |
| Union, S.C. | WBCU | 1460 |
| Union City, Tenn. | WENK | 1240 |
| Uniontown, Pa. | WMBS | 590 |
| Urbana, Ill. | WILL | 580 |
| | WKID | 1580 |
| Utica, N.Y. | WIBX | 950 |
| | WBVM | 1550 |
| | WRUN | 1150 |
| | WTLB | 1310 |
| Utuado, P.R. | WUPR | 1530 |
| Uvalde, Tex. | KVOU | 1400 |
| Valdese, N.C. | WSVM | 1490 |
| Valdosta, Ga. | WGOV | 950 |
| | WGAF | 910 |
| | WJEM | 1150 |
| | WVLD | 1450 |
| Valentine, Nebr. | KVSH | 940 |
| Vallejo, Calif. | KNBA | 1190 |
| Valley City, N.Dak. | KOVC | 1490 |
| Valparaiso, Fla. | WFSH | 1340 |
| Valparaiso, Ind. | WAKE | 1500 |
| | WNWI | 1080 |
| Van Buren, Ark. | KFOF | 1580 |
| Van Cleve, Ky. | WMTC | 730 |
| Vanceburg, Ky. | WKKS | 1570 |
| Vancouver, Wash. | KISN | 910 |
| | KKEY | 1150 |
| | KGAR | 1550 |
| Vandalia, Ill. | WPMB | 1500 |
| Van Wert, Ohio | WERT | 1220 |
| Venice, Fla. | WAMR | 1320 |
| Ventura, Calif. | KVEN | 1450 |
| | KUDU | 1590 |
| Vermillion, S.Dak. | KUSD | 690 |
| Vernal, Utah | KVEL | 1250 |
| Vernon, Ala. | WVSA | 1380 |
| Vernon, Tex. | KVWC | 1490 |
| Vero Beach, Fla. | WAXE | 1370 |
| | WTTB | 1490 |
| Vicksburg, Miss. | WQBC | 1420 |
| | WVIM | 1490 |
| Victoria, Tex. | KNAL | 1410 |
| | KVIC | 1340 |
| Victorville, Calif. | KCIN | 1590 |
| Vidalia, Ga. | WVOP | 970 |
| Vieques, P.R. | WIVV | 1370 |
| Ville Platte, La. | KVPI | 1050 |
| Vincennes, Ind. | WAOV | 1450 |
| Vineland, N.J. | WWBZ | 1360 |
| | WDVL | 1270 |
| Vinita, Okla. | KVIN | 1470 |
| Vinton, Va. | WKBA | 1550 |
| Virginia, Minn. | WHLB | 1400 |
| Virginia Beach, Va. | WVAB | 1550 |
| Viroqua, Wis. | WISV | 1360 |
| Visalia, Calif. | KONG | 1400 |
| Vivian, La. | KNCB | 1600 |
| Waco, Tex. | WACO | 1580 |
| | KAWA | 1010 |
| | KBGO | 1580 |
| | KWTX | 1230 |
| Wadena, Minn. | KWAD | 920 |
| Wadesboro, N.C. | WADE | 1210 |
| Wagoner, Okla. | KWLG | 1530 |
| Wahpeton, N.D.-Breckenridge, Minn. | KBMW | 1450 |
| Wailuku, Hawaii | KMVI | 550 |
| Waipahu, Hawaii | KAHU | 940 |
| Walhalla, S.C. | WGOG | 1000 |
| Wallace, Idaho | KWAL | 620 |
| Wallace, N.C. | WLSE | 1400 |
| Walla Walla, Wash. | KHIT | 1320 |
| | KUJ | 1420 |
| | KTEL | 1490 |
| Walnut Ridge, Ark. | KRLW | 1320 |
| Walsenburg, Colo. | KFLJ | 1380 |
| Walterboro, S.C. | WALD | 1220 |
| Waltham, Mass. | WCRB | 1330 |
| Walton, N.Y. | WOLA | 1270 |
| Ward Ridge, Fla. | WJOE | 1570 |
| Ware, Mass. | WARE | 1250 |
| Warner Robbins, Ga. | WRBN | 1600 |
| | WAVC | 1350 |
| 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 |
| | WOL | 1450 |
| | WOOK | 1340 |
| | WWDC | 1260 |
| | WRC | 980 |
| | WTOP | 1500 |
| Washington, Ga. | WLOV | 1370 |
| Washington, Ind. | WAMW | 1580 |
| Washington, Iowa | KCII | 1380 |
| Washington, N.J. | WCRV | 1580 |
| Washington, N.C. | WEEW | 1320 |
| | WITN | 930 |
| Washington, Pa. | WJPA | 1450 |
| Washington Court House, Ohio | WCHO | 1250 |
| Walterboro, S.C. | WALD | 1060 |
| Waterbury, Conn. | WATR | 1320 |
| | WBRY | 1590 |
| | WWCO | 1240 |
| Waterbury, Vt. | WDEV | 550 |
| Waterloo, Iowa | KXEL | 1540 |
| | KNWS | 1090 |
| | KWWL | 1330 |
| Watertown, N.Y. | WATN | 1240 |
| | WOTT | 1410 |
| | WWNY | 790 |
| Watertown, S.Dak. | KSDR | 1480 |
| | KWAT | 950 |
| Watertown, Wis. | WTTN | 1580 |
| Waterville, Me. | WTVL | 1490 |
| Watseka, Ill. | WGFA | 1360 |
| Watsonville, Calif. | KOMY | 1340 |
| Wauchula, Fla. | WAUC | 1310 |
| | WPRV | 1600 |
| Waukegan, Ill. | WKRS | 1220 |
| Waukesha, Wis. | WAUK | 1510 |
| Waukon, Ia. | KNEI | 1140 |
| Waupaca, Wis. | WOUX | 800 |
| Waupun, Wis. | WLKE | 1170 |
| Wausau, Wis. | WRIG | 1400 |
| | WSAU | 550 |
| | WXCO | 1230 |
| Waverly, Iowa | KWVY | 1470 |
| Waverly, Ohio | WPKO | 1380 |
| Waverly, Tenn. | WPHC | 1060 |
| Waxahachie, Tex. | KBEC | 1390 |
| Waycross, Ga. | WACL | 570 |
| | WAYX | 1230 |
| Waynesboro, Ga. | WBRO | 1310 |
| Waynesboro, Miss. | WABO | 990 |
| Waynesboro, Pa. | WAYZ | 1380 |
| Waynesboro, Va. | WAYB | 1490 |
| | WANV | 970 |
| Waynesburg, Pa. | WANB | 1580 |
| Waynesville, Mo. | KJPW | 1890 |
| Waynesville, N.C. | WHCC | 1400 |
| Weatherford, Tex. | KZEE | 1220 |
| Webster City, Iowa | KJFJ | 1570 |
| Weed, Calif. | KDAD | 800 |
| Weirton, W.Va. | WEIR | 1430 |
| Weiser, Idaho | KWEI | 1260 |
| Welch, W.Va. | WELC | 1150 |
| | WOVE | 1340 |
| Weldon, N.C. | WSMY | 1400 |
| Wellington, Kan. | KLEY | 1130 |
| Wellsboro, Pa. | WNBT | 1490 |
| Wellston, Ohio | WKOV | 1330 |
| Wellsville, N.Y. | WLSV | 790 |
| Wenatchee, Wash. | KPQ | 560 |
| | KUEN | 900 |
| | KMEL | 1340 |
| Wendell-Zebulon, N.C. | WETC | 540 |
| Weslaco, Tex. | KRGV | 1290 |
| West Allis, Wis. | WAWA | 1590 |
| W. Bend, Wis. | WBKV | 1470 |
| Westbrook, Me. | WJAB | 1440 |
| West Chester, Pa. | WCHE | 1520 |
| West Covina, Cal. | KGRB | 900 |
| W. Frankfort, Ill. | WFRX | 1300 |
| W. Hartford, Conn. | WEXT | 1550 |
| West Jefferson, N.C. | WKSK | 1600 |
| W. Liberty, Ky. | WLKS | 1450 |
| West Looma, Cal. | KGRB | 900 |
| W. Memphis, Ark. | KSUD | 730 |
| W. Monroe, La. | KUZN | 1310 |
| W. Palm Beach, Fla. | WEAT | 850 |
| | WJNO | 1230 |
| | WIRK | 1290 |
| West Plains, Mo. | KWPM | 1450 |
| West Point, Ga. | WBMK | 1310 |
| West Point, Miss. | WROB | 1450 |
| Westport, Conn. | WMMM | 1260 |
| W. Springfield, Mass. | WTXL | 1490 |
| W. Yarmouth, Mass. | WOCB | 1240 |
| Westerly, R.I. | WERI | 1230 |
| Westfield, Mass. | WDEW | 1570 |
| Westminster, Md. | WTTR | 1470 |
| Weston, W.Va. | WHAW | 980 |
| W. Warwick, R.I. | WWRI | 1450 |
| Wetumpka, Ala. | WETU | 1250 |
| Wewoka-Seminole, Okla. | KWSH | 1260 |
| Wharton, Tex. | KANI | 1500 |
| Wheatland, Wyo. | KYCN | 1340 |
| Wheaton, Md. | WDON | 1540 |
| Wheeling, W.Va. | WHLL | 1600 |
| | WBZE | 1470 |
| | WKWK | 1400 |
| | WWVA | 1170 |
| White Castle, La. | KEVL | 1590 |
| Whitehall, Mich. | WLRC | 1490 |
| White Plains, N.Y. | WFAS | 1230 |
| White River Junc., Vt. | WNHV | 910 |
| Whitesburg, Ky. | WTCW | 920 |
| Whiteville, N.C. | WENC | 1220 |
| Wichita, Kans. | KAKE | 1240 |
| | KEYN | 900 |
| | KLEO | 1480 |
| | KFDI | 1070 |
| | KFH | 1330 |
| | KWBB | 1410 |
| Wichita Falls, Tex. | KNIN | 990 |
| | KTRN | 1290 |
| | KWFT | 620 |
| Wickenburg, Ariz. | KAKA | 1250 |
| Wickford, R.I. | WKFD | 1370 |
| Wildwood, N.J. | WCMC | 1230 |
| Wilkes-Barre, Pa. | WBAX | 1240 |
| | WBRE | 1340 |
| | WILK | 980 |
| Willcox, Ariz. | KHIL | 1250 |
| Williamsburg, Ky. | WEZJ | 1440 |
| Williamsburg, Va. | WBCI | 740 |
| Williamson, W.Va. | WBTH | 1400 |
| Williamsport, Pa. | WLYC | 1050 |
| | WRAK | 1400 |
| | WWPA | 1340 |
| Williamston, N.C. | WIAM | 900 |
| Willimantic, Conn. | WILI | 1400 |
| Williston, N.D. | KEYZ | 1360 |
| Willmar, Minn. | KWLM | 1340 |
| Willoughby, Ohio | WELW | 1330 |
| Willow Springs, Mo. | KUKU | 1330 |
| Willows, Calif. | KIQS | 1560 |
| Wilmington, Del. | WAMS | 1380 |
| | WDEL | 1150 |
| | WILM | 1450 |
| | WTUX | 1290 |
| Wilmington, N.C. | WMFD | 630 |
| | WHSL | 1490 |
| | WKLM | 980 |
| | WGNI | 1340 |
| Wilmington, O. | WMWM | 1090 |
| Wilson, N.C. | WGTM | 590 |
| | WLLY | 1350 |
| | WVOT | 1420 |
| Winchester, Ky. | WWKY | 1380 |
| Winchester, Tenn. | WCDT | 1340 |
| Winchester, Va. | WINC | 1400 |
| | WHPL | 610 |
| Windber, Pa. | WWBR | 1350 |
| Winder, Ga. | WIMO | 1300 |
| Windom, Minn. | KDOM | 1580 |
| Window Rock, Ariz. | KHAC | 1300 |
| Windsor, Conn. | WSOR | 1480 |
| Winfield, Ala. | WEZQ | 1300 |
| Winfield, Kan. | KNIC | 1550 |
| Winnemucca, Nev. | KWNA | 1400 |
| Winnfield, La. | KVCL | 1270 |
| Winner, S.Dak. | KWYR | 1260 |
| Winnsboro, La. | KMAR | 1570 |
| Winnsboro, S.C. | WCKM | 1250 |
| Winona, Minn. | KWNO | 1230 |
| | KAGE | 1380 |
| Winona, Miss. | WONA | 1570 |
| Winslow, Ariz. | KVNC | 1010 |
| | KINO | 1230 |
| Winston-Salem, N.C. | WAAA | 980 |
| | WAIR | 1340 |
| | WFCM | 1550 |
| | WSJS | 600 |
| | WTOB | 1380 |
| | WKBX | 1500 |
| Winter Garden, Fla. | WOKB | 1600 |
| Winter Haven, Fla. | WSIR | 1490 |
| | WINT | 1360 |
| Winter Park, Fla. | WABR | 1440 |
| Wisconsin Rapids, Wis. | WFHR | 1320 |
| | WRNE | 1220 |
| Wolf Pt., Mont. | KVCK | 1450 |
| Woodburn, Ore. | KWRC | 940 |
| Woodbury, Tenn. | WBFJ | 1540 |
| Wood River, Ill. | WRTH | 590 |
| Woodside, N.Y. | WWRL | 1600 |
| Woodville, Tex. | KVLL | 1220 |
| Woodward, Okla. | KSIW | 1450 |
| Woonsocket, R.I. | WNRI | 1380 |
| | WWON | 1240 |
| Wooster, Ohio | WWST | 980 |
| Worcester, Mass. | WAAB | 1440 |
| | WNEB | 1230 |
| | WORC | 1310 |
| | WTAG | 580 |
| Worland, Wyo. | KWOR | 1340 |
| Worthington, Minn. | KWOA | 730 |
| Worthington, Ohio | WRFD | 880 |
| Wynne, Ark. | KWYN | 1400 |
| Wyoming, Mich. | WERX | 1530 |
| Wytheville, Va. | WYVE | 1280 |
| Yakima, Wash. | KIT | 1280 |
| | KIMA | 1460 |
| | KBBO | 1390 |
| | KQOT | 930 |
| | KUTI | 980 |
| | KYAK | 1390 |
| Yankton, S.D. | KYNT | 1450 |
| | WNAX | 570 |
| Yauco, P.R. | WKFE | 1550 |
| Yazoo City, Miss. | WAZF | 1230 |
| York, Nebr. | KAWL | 1370 |
| York, Pa. | WNOW | 1250 |
| | WORK | 1350 |
| | WSBA | 910 |

WHITE'S RADIO LOG

| Location | C.L. | kHz |
|---|---|---|
| York, S.C. | WYCL | 980 |
| Youngstown, Ohio. | WBBW | 1240 |
| | WFMJ | 1390 |
| | WKBN | 570 |
| Ypsilanti, Mich. | WYSI | 1480 |
| | WYNZ | 1520 |
| Yreka, Calif. | KSYC | 1490 |
| Yuba City, Calif. | KUBA | 1600 |
| | KZIN | 1450 |
| Yuma, Ariz. | KBLU | 1320 |
| | KVOY | 1400 |
| | KYUM | 560 |
| Zanesville, Ohio | WHIZ | 1240 |
| Zarephath, N.J. | WAWZ | 1380 |
| Zebulon-Wendell, N. C. | WETC | 540 |
| Zephyr Hills, Fla. | WZRH | 1400 |
| Zion, Ill. | WZBN | 1500 |

# U. S. FM Stations by States

| Location | C.L. | MHz |
|---|---|---|
| **ALABAMA** | | |
| Albertville | WQSB | 105.1 |
| Alexander City | WRFS-FM | 106.1 |
| Andalusia | WNBX | 98.1 |
| Anniston | WHMA-FM | 100.5 |
| Athens | WJOF | 104.3 |
| | WATM-FM | 104.1 |
| Bay Minette | WWSM | 105.5 |
| Birmingham | WAPI-FM | 99.5 |
| | WBRC-FM | 106.9 |
| | WCRT | 96.5 |
| | WSFM | 93.7 |
| | WYSU-FM | 91.1 |
| Carrollton | WRAG-FM | 94.1 |
| Clanton | WKLF-FM | 97.7 |
| Cullman | WFMH-FM | 101.1 |
| Decatur | WDRM | 102.1 |
| | WRSA | 96.9 |
| Dothan | WOOF-FM | 99.7 |
| Fairhope | WABF-FM | 92.1 |
| Florence | WQLT | 107.3 |
| Gadsden | WLJM | 103.7 |
| Hamilton | WERH-FM | 92.1 |
| Homewood | WJLN | 104.7 |
| Huntsville | WAHR | 99.1 |
| | WNDA | 92.9 |
| Jackson | WHOD-FM | 104.9 |
| Mobile | WKRG-FM | 99.9 |
| | WMFC-FM | 98.5 |
| | WLPR | 96.1 |
| Montgomery | WFMI | 98.9 |
| | WAJM | 103.3 |
| | WHHY-FM | 101.9 |
| Muscle Shoals | WLAY-FM | 105.5 |
| Ozark | WOAB | 104.9 |
| Scottsboro | WCNA-FM | 98.3 |
| Selma | WHBB-FM | 100.1 |
| | WHPD | 100.1 |
| Sylacauga | WMLS-FM | 98.3 |
| Tuscumbia | WVNA | 100.3 |
| Tuscaloosa | WTBO-FM | 95.7 |
| | WUOA | 91.7 |
| | WACT-FM | 105.5 |
| **ALASKA** | | |
| Anchorage | KNIK | 105.5 |
| | KBYR-FM | 102.1 |
| | KHAR | 103.9 |
| College | KUAC | 104.9 |
| **ARIZONA** | | |
| Bisbee | KSUN-FM | 92.1 |
| Flagstaff | KAFF-FM | 92.9 |
| Globe | KWJB-FM | 100.3 |
| Mesa | KBUZ-FM | 104.7 |
| | KMND-FM | 93.3 |
| Phoenix | KRFM | 95.5 |
| | KFCA | 91.5 |
| | KITH | 101.3 |
| | KOOL-FM | 94.5 |
| | KNIX-FM | 102.5 |
| | KOY-FM | 92.5 |
| | KMEO | 96.9 |
| | KTAR-FM | 98.7 |
| | KYEW | 98.3 |
| | KHEP-FM | 101.5 |
| Scottsdale | KDOT-FM | 100.7 |
| Show Low | KVWM | 93.5 |
| Tempe | KUPD-FM | 97.9 |
| Tucson | KFMM | 99.5 |
| | KCEE-FM | 96.1 |
| | KSOM | 92.9 |
| | KVOA-FM | 93.7 |
| **ARKANSAS** | | |
| Blytheville | KLCN-FM | 96.1 |
| Conway | KASC | 91.5 |
| | KVEE-FM | 105.1 |
| Crossett | KAGH-FM | 104.9 |
| Dardanelle | KCAB-FM | 102.3 |
| El Dorado | KRIL | 99.3 |
| | KELD-FM | 103.1 |
| Fayetteville | KFAV | 92.1 |
| | KNWA | 103.9 |
| Ft. Smith | KFPW-FM | 94.9 |
| | KMAG | 99.1 |
| | KTCS-FM | 99.9 |
| Harrison | KHOZ-FM | 102.9 |
| Hot Springs | KBHS-FM | 96.7 |
| | KGUS | 97.5 |
| Jacksonville | KGMR-FM | 100.3 |
| Jonesboro | KBTM-FM | 101.9 |
| | KASU | 91.9 |
| Little Rock | KARK | 103.7 |
| | KMYO-FM | 95.7 |
| Mammoth Springs | KAMS | 103.9 |
| Newport | KNBY-FM | 105.5 |
| Osceola | KDSE-FM | 98.1 |
| Pine Bluff | KOTN-FM | 92.3 |
| Siloam Springs | KUOA-FM | 105.7 |
| **CALIFORNIA** | | |
| Akiah | KLIL | 94.3 |
| Alameda | KJAZ | 92.7 |
| Anaheim | KEZR-FM | 95.9 |
| Angwin | KANG | 89.9 |
| Apple Valley | KAVR-FM | 102.3 |
| Arcata | KTOO | 90.5 |
| Atherton | KPEN | 101.3 |
| Auburn | KAFI | 101.1 |
| Avalon | KBIG | 104.3 |
| Bakersfield | KERN-FM | 94.1 |
| | KGEE-FM | 97.5 |
| | KIFM | 96.5 |
| Berkeley | KPFA | 94.1 |
| | KALX | 90.7 |
| | KPFB | 89.3 |
| | KPAT-FM | 102.9 |
| Bijou | KHUR | 99.9 |
| Bishop | KIBS-FM | 100.7 |
| Carlsbad | KARL-FM | 95.9 |
| Carmel | KRML-FM | 101.7 |
| Claremont | KSPC | 88.7 |
| Coachella | KCHV-FM | 93.7 |
| El Cajon | KECR | 93.3 |
| Escondido | KOWN-FM | 92.1 |
| Fremont | KFMR | 104.9 |
| Fresno | KARM-FM | 101.9 |
| | KCIB-FM | 94.5 |
| | KFRE-FM | 93.7 |
| | KMJ-FM | 97.9 |
| | KXQR | 102.7 |
| Garden Grove | KTBT | 94.3 |
| Gilroy | KPER-FM | 94.3 |
| Glendale | KFMU | 97.1 |
| | KUTE | 101.9 |
| Hayward | KTUX | 101.7 |
| Hemet | KHSJ-FM | 105.5 |
| Inglewood | KTYM-FM | 103.9 |
| La Canada | KUNF | 88.9 |
| LaSierra | KSDA | 89.7 |
| Lodi | KCVR-FM | 97.7 |
| Lompoc | KLOM-FM | 92.7 |
| Long Beach | KJLH | 102.3 |
| | KLON | 88.1 |
| | KNOB | 97.9 |
| Los Altos | KPGM | 97.7 |
| | KFJC | 88.7 |
| Los Angeles | KABC-FM | 95.5 |
| | KADS | 103.5 |
| | KBBI | 107.5 |
| | KBCA | 105.1 |
| | KBMS | 105.9 |
| | KCBH | 98.7 |
| | KFAC-FM | 92.3 |
| | KFOX-FM | 100.3 |
| | KGBS-FM | 97.1 |
| | KHJ | 101.1 |
| | KMET | 94.7 |
| | KMLA | 100.3 |
| | KNX-FM | 93.1 |
| | KPFK | 90.7 |
| | KPOL-FM | 93.9 |
| | KRHM | 102.7 |
| | KRKD-FM | 96.3 |
| | KUSC | 91.5 |
| | KXLU | 89.1 |
| | KHOF | 99.5 |
| Los Angeles-Avalon | KBIG-FM | 104.3 |
| Los Banos | KLBS-FM | 95.9 |
| Los Gatos | KLGS | 95.3 |
| Marysville | KRFO | 99.9 |
| Merced | KAMB | 101.5 |
| Modesto | KBEE-FM | 103.3 |
| | KTRB-FM | 104.1 |
| Monterey | KMBY-FM | 96.9 |
| Newport Beach | KOQM | 103.1 |
| Northridge | KEOC-FM | 88.5 |
| Oakland | KAFE | 98.1 |
| Oceanside | KUDE | 102.1 |
| Ontario | KOYA | 93.5 |
| Oxnard | KPMJ | 104.7 |
| Pasadena | KPCS | 89.3 |
| | KPPC-FM | 106.7 |
| Palm Springs | KGEC | 104.7 |
| Quincy | KFRW | 95.9 |
| Redondo Beach | KKDP | 93.5 |
| Redlands | KCAL-FM | 96.7 |
| | KUOR-FM | 89.1 |
| Ridgecrest | KLOA-FM | 105.5 |
| Riverside | KBBL | 99.1 |
| | KACE-FM | 82.7 |
| | KDUO | 97.5 |
| Riverside | KUCR | 88.1 |
| Sacramento | KCRA-FM | 96.1 |
| | KERS | 88.9 |
| | KFBK-FM | 96.9 |
| | KJML | 106.5 |
| | 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 |
| | KRSA-FM | 100.7 |
| San Bernardino | KERR | 103.9 |
| | KVCR | 91.9 |
| | KFMW | 99.9 |
| | KEBS | 89.5 |
| | KRCS | 95.1 |
| San Diego | KOGO-FM | 94.1 |
| | KFMB-FM | 100.7 |
| | KFMX | 96.5 |
| | KGB-FM | 101.5 |
| | KITT | 105.3 |
| | KDIG | 98.1 |
| | KLRO | 94.9 |
| | KPRI | 106.5 |
| | KSDS | 88.3 |
| | KBBW | 102.9 |
| | KSDO-FM | 103.7 |
| | KSEA | 97.3 |
| San Fernando | KVFM | 94.3 |
| San Francisco | KALW | 91.7 |
| | KBRG | 105.3 |
| | KCBS-FM | 98.9 |
| | KDFC | 102.1 |
| | KEAR | 97.3 |
| | KFOG | 104.5 |
| | KFRC-FM | 106.1 |
| | KGO-FM | 103.7 |
| | KNBR-FM | 99.7 |
| | KMPX | 106.9 |
| | KOIT | 93.3 |
| | KPEN | 101.3 |
| | KRON-FM | 96.5 |
| | KSFR | 94.9 |
| | KXKX | 88.5 |
| | KCMA | 90.3 |
| | KBRG | 105.3 |
| | KABL-FM | 98.1 |
| | KKHI-FM | 95.7 |
| San Jose | KSJO-FM | 92.3 |
| | KBAY | 100.3 |
| | KRPM | 98.5 |
| | KSJS | 90.7 |
| | KPLX | 106.5 |
| San Luis Obispo | KATY-FM | 96.1 |
| | KSBY-FM | 93.3 |
| San Mateo | KCSM | 90.9 |
| | KUFY | 107.7 |
| San Rafael | KTIM | 100.9 |
| Santa Ana | KWIZ-FM | 96.7 |
| | KYMS | 106.3 |
| Santa Barbara | KCSB-FM | 91.1 |
| | KDB-FM | 93.7 |
| | KMUZ | 103.3 |
| | KTMS | 97.5 |
| Santa Clara | KSCU | 90.1 |
| | KREP | 105.7 |
| Santa Cruz | KSCO-FM | 99.1 |
| Santa Maria | KXFM | 99.1 |
| | KSMA-FM | 102.5 |
| Santa Monica | KCRW | 89.9 |
| | KSRF | 103.1 |
| Santa Rosa | KEFM | 100.1 |
| Sierra Madre | KMAX | 107.1 |
| Stanford | KZSU | 90.1 |
| Stockton | KUOP | 91.3 |
| | KJOY-FM | 99.3 |
| | KWG-FM | 105.7 |
| Tahoe Valley | KTHO-FM | 103.1 |
| Thousand Oaks | KNJO | 92.7 |
| Torrance | KNHS | 89.7 |
| Tracy | KSRT | 100.9 |
| Tulare | KOFR | 106.7 |
| | KGEN-FM | 94.9 |
| Turlock | KOSO | 93.1 |
| Twenty-Nine Palms | KDHI-FM | 95.7 |
| Ukiah | KUKI-FM | 93.5 |
| Ventura-Oxnard | KVEN-FM | 100.7 |
| Visalia | KONG-FM | 92.9 |
| Walnut Creek | KOFM | 92.1 |
| West Covina | KBDB | 98.3 |
| Woodland | KATT | 95.3 |
| **COLORADO** | | |
| Boulder | KRNW | 97.3 |
| Colorado Springs | KRCC | 91.5 |
| | KKFM | 96.5 |
| | KSHS | 90.5 |
| | KVOR-FM | 92.9 |
| | KPIK-FM | 94.3 |
| | KRDO-FM | 95.1 |
| | KRYT-FM | 101.9 |
| Cortez | KZFM | 94.1 |
| Denver | KFML-FM | 98.5 |
| | KLIR-FM | 100.3 |
| | KLZ-FM | 106.7 |
| | KDEN-FM | 99.5 |
| | KOA-FM | 103.5 |
| | KOSI-FM | 101.1 |
| | KTGM | 105.1 |
| | KMYR | 95.5 |
| | KBPI | 105.9 |
| Ft. Collins | KCSU-FM | 90.9 |
| | KFMF | 93.9 |
| Ft. Morgan | KFTM-FM | 94.3 |
| Grand Junction | KREX-FM | 92.3 |
| Greeley | KCBL-FM | 91.3 |
| | KGRE | 92.3 |
| Lakewood | KLAK-FM | 107.5 |
| Longmount | KLMO-FM | 104.3 |
| Loveland | KLOV-FM | 102.3 |
| Manitou Springs | KCMS-FM | 102.7 |
| Pueblo | KVMN | 98.9 |
| Rocky Ford | KAVI-FM | 95.9 |
| **CONNECTICUT** | | |
| Bridgeport | WJZZ | 99.9 |
| | WPKN | 89.5 |
| Brookfield | WGHF | 95.1 |
| Danbury | WLAD-FM | 98.3 |
| Fairfield | WSHU | 91.1 |
| Hamden | WDEE | 101.3 |
| Hartford | WHCN | 105.9 |
| | WDRC-FM | 102.9 |
| | WCCC-FM | 104.9 |
| | WLAE | 93.7 |
| | WRTC-FM | 89.3 |
| | WTIC-FM | 96.5 |
| Meriden | WBMI | 95.7 |
| Middletown | WESU | 88.1 |
| | WIHS | 104.9 |
| New Haven | WNHC-FM | 99.1 |
| | WYBG-FM | 94.3 |
| Norwalk | WDRN | 95.9 |
| Norwich | WICH-FM | 97.7 |
| Stamford | WSTC-FM | 96.7 |
| Storrs | WHUS | 90.5 |
| Waterbury | WATR-FM | 92.5 |
| | WWCO-FM | 104.1 |
| Westport | WMMM | 107.9 |
| **DELAWARE** | | |
| Dover | WDOV-FM | 94.7 |
| Wilmington | WDEL-FM | 93.7 |
| | WJBR | 99.5 |
| **D. C.** | | |
| Washington | WASH | 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** | | |
| Atlantic Beach | WKTZ-FM | 96.1 |
| | WAQB-FM | 104.9 |
| Belle Glade | WSWN-FM | 93.5 |
| Boca Ratan | WWOG | 99.9 |
| Bradenton | WBRD-FM | 103.3 |
| Clear Water | WTAN-FM | 95.7 |
| Cocoa | WEZY-FM | 99.3 |
| Cocoa Beach | WCKS | 101.1 |
| | WRKT-FM | 104.3 |
| Coral Gables | WVCG-FM | 105.1 |
| Crestview | WAAZ-FM | 104.9 |
| Daytona Beach | WNDB-FM | 94.5 |
| | WMFJ-FM | 101.9 |
| De Funiak Springs | WZEP-FM | 103.1 |

| Location | C.L. | MHz |
|---|---|---|
| DeLand | WOOO-FM | 105.9 |
| Ft. Lauderdale | WFLM | 105.9 |
| | WFTL-FM | 106.7 |
| | WMJR | 100.7 |
| | WSRF-FM | 103.5 |
| Ft. Meyers | WINK-FM | 96.9 |
| | WMYR-FM | 101.9 |
| Ft. Pierce | WARN-FM | 98.7 |
| Ft. Walton Beach | WFTW-FM | 99.3 |
| Gainesville | WRUF-FM | 103.7 |
| Hialeah | WHMS | 92.1 |
| Immokalee | WCOF-FM | 95.9 |
| Jacksonville | WJAX-FM | 95.1 |
| | WQIK-FM | 99.1 |
| | WRLJ | 96.9 |
| | WIVY-FM | 92.5 |
| | WKTZ-FM | 96.1 |
| Jacksonville-Atlantic Bch | WKAT-FM | 93.1 |
| Key West | WFYN-FM | 92.5 |
| Lakeland | WVFM | 94.1 |
| Maitland | WTLN-FM | 95.3 |
| Marianna | WTOT-FM | 100.9 |
| Melbourne | WYRL | 102.3 |
| Miami | WKAT-FM | 93.3 |
| | WGBS | 96.3 |
| | WGOS-FM | 93.9 |
| | WIOD-FM | 97.3 |
| | WTHS | 91.7 |
| | WEDR | 99.1 |
| | WWPB | 101.5 |
| Miami Beach | WAEZ-FM | 94.9 |
| Milton | WXBM-FM | 102.3 |
| Mt. Dora | WHIY-FM | 107.7 |
| Naples | WNFM | 94.5 |
| Ocala | WMOP-FM | 93.7 |
| Okeechobee | WLMC | 103.1 |
| Orlando | WDBO-FM | 92.3 |
| | WHOO-FM | 96.5 |
| | WKIS-FM | 100.3 |
| | WWQS | 105.1 |
| Palm Beach | WWOS-FM | 97.9 |
| | WPBA-FM | 107.1 |
| Panama City | WMAI-FM | 107.9 |
| | WDLP-FM | 92.5 |
| Pensacola | WPEX-FM | 94.1 |
| | WCOA-FM | 102.7 |
| | WONF | 101.5 |
| Plantation Key | WPLC | 100.3 |
| Quincy | WCNH-FM | 101.7 |
| St. Augustine | WFOY-FM | 97.7 |
| St. Petersburg | WGNB | 101.5 |
| | WTCX | 99.5 |
| | WPIN-FM | 107.3 |
| Sarasota | WYAK | 102.5 |
| | WSPB-FM | 106.3 |
| Sebring | WSEB | 105.5 |
| Stuart | WMCF | 92.7 |
| Tallahassee | WFSU-FM | 91.5 |
| | WBGM-FM | 98.9 |
| | WMEN-FM | 104.1 |
| | WTNT-FM | 94.9 |
| Tampa | WATL-FM | 100.7 |
| | WFLA-FM | 93.3 |
| | WPKM | 104.7 |
| | WUSF | 89.7 |
| Titusville | WRMF-FM | 98.3 |
| West Palm Beach | WPBF | 107.9 |
| Winter Haven | WXKL | 97.5 |
| Winter Park | WPRK | 91.5 |
| | WLOQ | 103.1 |

## GEORGIA

| | | |
|---|---|---|
| Albany | WGPC-FM | 104.5 |
| | WJIZ | 96.3 |
| Americus | WDEC-FM | 94.3 |
| Athens | WGAU-FM | 102.5 |
| | WDOL-FM | 104.7 |
| Atlanta | WABE | 90.1 |
| | WPLO-FM | 103.3 |
| | WGKA-FM | 92.9 |
| | WSB-FM | 98.5 |
| | WLTA-FM | 99.7 |
| Augusta | WAUG-FM | 105.7 |
| | WBBQ-FM | 104.3 |
| Brunswick | WGIG-FM | 100.7 |
| | WYNR-FM | 101.5 |
| Canton | WCHK-FM | 105.5 |
| Carrollton | WLBB-FM | 102.3 |
| Columbus | WRBL-FM | 102.9 |
| | WGBA-FM | 107.3 |
| Cornelia | WCON-FM | 99.3 |
| Decatur | WAVO-FM | 94.9 |
| Dublin | WXLI-FM | 92.7 |
| Gainesville | WDUN-FM | 103.9 |
| | WWQT | 97.1 |
| Griffin | WKEU-FM | 97.7 |
| Jackson | WJGA-FM | 92.1 |
| Lagrange | WLAG-FM | 104.1 |
| Macon | WMAZ-FM | 99.1 |
| Manchester | WFDR-FM | 98.3 |
| Marietta | WBIE-FM | 101.5 |
| | WKLS | 96.1 |
| Milledgeville | WMVG-FM | 102.3 |
| Moultrie | WMTM-FM | 93.9 |
| Newnan | WCOH-FM | 96.7 |
| Perry | WPGA-FM | 100.9 |
| Rome | WRGA-FM | 102.3 |
| | WROM-FM | 97.7 |
| Rossville | WRIP-FM | 105.5 |
| Savannah | WTOC-FM | 94.1 |
| | WEAS-FM | 93.1 |
| Smyrna | WKXI | 94.1 |
| Statesboro | WMCD | 100.1 |
| Swainsboro | WJAT-FM | 98.3 |
| Toccoa | WLET-FM | 106.1 |
| Valdosta | WGOV-FM | 92.9 |
| W. Point | WCJM | 100.9 |

## HAWAII

| | | |
|---|---|---|
| Honolulu | KAIM-FM | 95.5 |
| | KFOA | 94.7 |
| | KGMB-FM | 93.1 |
| | KHVH-FM | 93.9 |
| | KPOI-FM | 97.5 |
| | KVOK | 88.1 |
| | KUOH | 90.5 |

## IDAHO

| | | |
|---|---|---|
| Boise | KBOI-FM | 97.9 |
| Idaho Falls | KIO-FM | 96.1 |
| | KGVM-FM | 99.1 |
| Lewiston | KOZE-FM | 96.7 |
| Moscow | KUIO | 91.7 |
| Nampa | KCRH | 91.5 |
| Pocatello | KBGL | 88.7 |

## ILLINOIS

| | | |
|---|---|---|
| Alton | WOKZ-FM | 100.3 |
| Anna | WRAJ-FM | 92.7 |
| Arlington Heights | WNWC | 92.7 |
| Aurora | WKKD-FM | 95.9 |
| | WMRO-FM | 107.9 |
| Bloomington | WJBC-FM | 101.5 |
| Carbondale | WSIU | 91.9 |
| Carmi | WROY-FM | 97.3 |
| Centralia | WCNT-FM | 95.3 |
| Champaign | WDWS-FM | 97.5 |
| | WLRW-FM | 94.5 |
| Charleston | WEIC-FM | 92.1 |
| Chicago | WBBM-FM | 96.3 |
| | WBEZ | 91.5 |
| | WCLM | 101.9 |
| | WLS-FM | 94.7 |
| | WDHF | 95.5 |
| | WEBH | 93.9 |
| | WEFM | 99.5 |
| | WSDM | 97.9 |
| | WFMF | 100.3 |
| | WNUS-FM | 107.5 |
| | WFMT | 98.7 |
| | WKFM | 103.5 |
| | WMAQ-FM | 101.1 |
| | WMBI-FM | 90.1 |
| | WNIB | 97.1 |
| | WXRT | 93.1 |
| | WJJD-FM | 104.3 |
| Columbia | WCBW | 104.9 |
| Crete | WTAS | 102.3 |
| Danville | WDAN-FM | 102.1 |
| Decatur | WSOY-FM | 102.9 |
| DeKalb | WNIC | 89.7 |
| | WLBK-FM | 92.5 |
| Dixon | WIXN-FM | 101.7 |
| Dundee | WVFV | 103.9 |
| E. St. Louis | WMRY | 101.1 |
| Effingham | WCRA-FM | 95.7 |
| | WELG | 103.9 |
| | WRMN-FM | 94.3 |
| Elgin | WEPS | 88.1 |
| | WELG | 103.9 |
| | WRMN-FM | 94.3 |
| Elmhurst | WRSE-FM | 88.7 |
| Elmwood Park | WXFM | 105.9 |
| Evanston | WEAW | 105.1 |
| | WNUR | 88.7 |
| Fairfield | WFIW-FM | 104.9 |
| Flossmoor | WHFH | 88.5 |
| Freeport | WELL-FM | 98.5 |
| Galesburg | WYKC-FM | 88.1 |
| | WGIL-FM | 94.9 |
| Glen Ellyn | WELF | 107.1 |
| Greenville | WGRN | 89.3 |
| Harrisburg | WEBQ-FM | 99.9 |
| Highland Park | WEEF-FM | 103.1 |
| Jacksonville | WLDS-FM | 100.5 |
| | WAJP | 93.5 |
| Joliet | WJOL-FM | 96.7 |
| Kankakee | WKAK-FM | 99.9 |
| | WKOC | 88.3 |
| Kewanee | WKEI-FM | 92.1 |
| Lansing | WLNR-FM | 106.3 |
| LaSalle | WLPO-FM | 99.3 |
| Lawrenceville | WAKO-FM | 103.1 |
| Litchfield | WSMI-FM | 106.1 |
| Loves Park | WLUV-FM | 96.7 |
| Macomb | WWKS | 91.3 |
| | WKAI-FM | 100.1 |
| Madison | WGNU-FM | 106.5 |
| Mattoon | WLBH-FM | 96.9 |
| Mendota | WGLC-FM | 100.9 |
| Morris | WRMI-FM | 104.7 |
| Morrison | WMHS | 91.5 |
| Mt. Carmel | WSAB | 94.9 |
| | WVMC-FM | 101.1 |
| Mt. Vernon | WMIX-FM | 94.1 |
| Normal | WGLT | 91.7 |
| Oak Park | WOPA-FM | 102.7 |
| Olney | WSEI-FM | 92.9 |
| Ottawa | WOLI | 98.3 |
| Paris | WPRS-FM | 96.3 |
| Park Forest | WRHS | 88.1 |
| Park Ridge | WMTH | 88.5 |
| Pekin | WSIV-FM | 95.3 |
| Peoria | WMBD-FM | 93.3 |
| | WIVC | 106.9 |
| Pittsfield | WBBA-FM | 97.7 |
| Quincy | WGEM-FM | 105.1 |
| | WTAD-FM | 99.5 |
| | WTAY-FM | 100.7 |
| Robinson | WROK-FM | 97.5 |
| Rockford | WHBF-FM | 98.9 |
| Rock Island | WVIK | 90.9 |
| | WRSV | 98.3 |
| Skokie | WRWC | 103.1 |
| S. Beloit | WTAX-FM | 103.7 |
| Springfield | WFMB | 104.5 |
| | WVEM | 101.9 |
| Sterling | WJVM | 94.3 |
| Streator | WIZZ-FM | 97.7 |
| Taylorville | WGGM | 95.0 |
| Urbana | WILL-FM | 90.9 |
| | WPGU | 103.9 |
| Waukegan | WEFA | 102.3 |
| Wheaton | WETN-FM | 88.1 |
| Winnebago | WRVI | 95.3 |
| Winnetka | WNTH | 88.1 |
| Woodstock | WREK | 105.5 |

## INDIANA

| | | |
|---|---|---|
| Anderson | WAFM | 97.9 |
| Auburn | WIFF | 105.5 |
| Bloomington | WFIU | 103.7 |
| | WTTV-FM | 92.3 |
| Bluffton | WCRD | 100.1 |
| Boonville | WBNL-FM | 107.1 |
| Columbus | WCSI-FM | 98.3 |
| Connersville | WCNB-FM | 100.3 |
| Crawfordsville | WNDY | 106.3 |
| Decatur | WADM-FM | 92.7 |
| Elkhart | WCMR-FM | 104.7 |
| | WTRC-FM | 100.7 |
| | WXAX | 104.7 |
| Elwood | WBMP | 101.7 |
| Evansville | WIKY-FM | 104.1 |
| | WEVC | 91.5 |
| | WPSR | 90.7 |
| | WVHI | 105.3 |
| Fort Wayne | WPTH | 95.1 |
| | WKJG-FM | 97.3 |
| Franklin | WFCI | 89.3 |
| | WIFN | 95.9 |
| Frankfort | WILO-FM | 99.7 |
| Gary | WGVE | 88.1 |
| Goshen | WGCS | 91.1 |
| Greencastle | WGRE | 91.7 |
| | WXTA | 94.3 |
| Greenfield | WSMJ | 99.5 |
| Greensburg | WTRE-FM | 107.3 |
| Hammond | WYCA | 92.3 |
| Hartford City | WHCI | 91.9 |
| | WWHC | 104.9 |
| Huntington | WVSH | 91.9 |
| | WHLT-FM | 103.1 |
| Indianapolis | WAJC | 104.5 |
| | WBDG | 90.9 |
| | WICR | 88.7 |
| | WISH-FM | 107.9 |
| | WAIV | 105.7 |
| | WFBM-FM | 94.7 |
| | WFMS | 95.5 |
| | WGEE-FM | 103.3 |
| | WIAN | 90.1 |
| | WIBC-FM | 93.1 |
| Jasper | WITZ-FM | 104.7 |
| Kendallville, Ind. | WAWK-FM | 93.3 |
| Kokomo | WFKO | 100.5 |
| | WKMO | 93.5 |
| Lafayette | WASK-FM | 105.3 |
| | WAZY-FM | 96.7 |
| La Porte | WLOI-FM | 96.7 |
| Lebanon | WNON | 100.9 |
| Logansport | WSAL-FM | 102.3 |
| Madison | WORX-FM | 96.7 |
| Marion | WMRI-FM | 106.9 |
| | WBST | 90.7 |
| Michigan City | WMCB-FM | 95.9 |
| Monticello | WVTL | 95.3 |
| Muncie | WMUN | 104.1 |
| | WWHI | 91.5 |
| New Albany | WNAS | 88.1 |
| New Castle | WCTW-FM | 102.5 |
| | WYSN | 91.1 |
| North Vernon | WOCH-FM | 106.1 |
| Peru | WARU-FM | 98.3 |
| Plainfield | WJMK | 98.3 |
| Plymouth | WTCA-FM | 94.3 |
| Princeton | WRAY-FM | 98.1 |
| Richmond | WGLM | 96.1 |
| | WECI | 91.5 |
| | WKBV-FM | 101.3 |
| Scottsburg | WMPI | 100.9 |
| Seymour | WJOD | 93.7 |
| Shelbyville | WSVL-FM | 97.1 |
| South Bend | WETL | 91.9 |
| | WHME | 103.1 |
| | WNDU-FM | 92.9 |
| | WPFR | 102.7 |
| | WJVA-FM | 103.9 |
| | WSBT-FM | 101.5 |
| Terre Haute | WTHI-FM | 99.9 |
| | WBOW-FM | 107.5 |
| | WPFR | 102.7 |
| | WVTS | 100.7 |
| | WISU | 89.7 |
| Wabash | WSKS | 91.3 |
| | WKUZ | 95.9 |
| Warsaw | WRSW-FM | 107.3 |
| Washington | WFML | 106.5 |
| West Lafayette | WBAA-FM | 99.1 |
| W. Terre Haute | WWVR | 105.5 |
| Valparaiso | WAKE-FM | 105.5 |
| | WVUR-FM | 89.5 |
| Vincennes | WAOV-FM | 96.7 |
| Winchester | WIUC | 98.3 |

## IOWA

| | | |
|---|---|---|
| Ames | WOI-FM | 90.1 |
| | KLFM | 104.1 |
| Atlantic | KJAN-FM | 103.7 |
| Boone | KFGQ-FM | 98.9 |
| Carroll | KCIM-FM | 93.7 |
| Cedar Falls | KTCF | 88.1 |
| Cedar Rapids | KHAK-FM | 98.1 |
| | WMT-FM | 104.5 |
| Clarion | KRIT | 96.9 |
| Clinton | KROS-FM | 96.1 |
| Creston | KSIB-FM | 101.7 |
| Davenport | WOC-FM | 103.7 |
| | KALA | 90.1 |
| | KWNT-FM | 106.5 |
| | KDSN-FM | 107.1 |
| Denison | KDPS | 88.1 |
| Des Moines | KDMI-FM | 97.3 |
| | WHO-FM | 100.3 |
| | KFMG | 94.9 |
| | KRNT-FM | 102.5 |
| | KWOM | 93.3 |
| Dubuque | WDBQ-FM | 105.3 |
| | KFMD | 92.9 |
| Ft. Dodge | KWMT-FM | 94.5 |
| Iowa City | KSUI | 91.7 |
| | KXIC-FM | 100.7 |
| Iowa Falls | KIFG-FM | 95.3 |
| LeMars | KLEM-FM | 99.5 |
| Maquoketa | KMAQ-FM | 95.3 |
| Mt. Vernon | KRNL-FM | 89.7 |
| Muscatine | KWPC-FM | 99.7 |
| Newton | KUWS-FM | 95.9 |
| Oskaloosa | KBOE-FM | 104.9 |
| Sioux Center | KDCR | 91.3 |
| Sioux City | KDVR | 97.9 |
| | KTFC | 103.3 |
| Spencer | KICD-FM | 107.7 |
| Storm Lake | KAYL-FM | 101.5 |
| Waterloo | KNWS-FM | 101.9 |
| | KXEL-FM | 105.7 |
| Waverly | KWAR | 89.1 |

## KANSAS

| | | |
|---|---|---|
| Baldwin | KNBU | 88.9 |
| Dodge City | KGNO-FM | 95.5 |
| Emporia | KSTE | 88.7 |
| | KVOE-FM | 104.9 |
| Garden City | KUPK-FM | 97.3 |
| Junction City | KJCK-FM | 94.5 |
| Kansas City | KCJC | 98.1 |
| | KCKN-FM | 94.1 |
| Larned | KANS-FM | 96.7 |
| Lawrence | KANU | 91.5 |
| | KLWN-FM | 105.9 |
| Leavenworth | KCLO-FM | 98.9 |
| Manhattan | KSDB-FM | 88.1 |
| Newton | KJRG-FM | 92.3 |
| Ottawa | KTJO-FM | 88.1 |
| | KOFO-FM | 95.7 |
| Parsons | KPPS-FM | 91.1 |
| Pratt | KWNS-FM | 93.1 |
| Russell | KRSL-FM | 95.9 |
| Salina | KAFM | 99.9 |
| Scott City | KFLA-FM | 94.5 |
| Topeka | KTOP | 100.3 |
| | WIBW-FM | 97.3 |
| Wichita | KFH-FM | 100.3 |
| | KARD | 107.3 |
| | KQTY | 101.3 |
| | KMUW | 89.1 |

## KENTUCKY

| | | |
|---|---|---|
| Albany | WANY-FM | 106.3 |
| Ashland | WCMI-FM | 93.7 |
| Beattyville | WLJC | 102.3 |
| Benton | WCBL-FM | 102.3 |
| Bowling Green | WLBJ-FM | 96.7 |
| Campbellsville | WTCO-FM | 103.9 |
| Central City | WNES-FM | 101.9 |
| Erlanger | WKKY-FM | 100.9 |
| Ft. Knox | WSAC-FM | 105.5 |
| Frankfort | WKYW | 104.9 |
| Fulton | WFUL-FM | 104.9 |
| Georgetown | WRVG | 90.1 |
| Glasgow | WGGC | 95.1 |
| Grayson | WGOH-FM | 102.3 |
| Greenville | WKYF-FM | 101.1 |
| Hazard | WKIC-FM | 101.1 |
| Henderson | WSON-FM | 99.5 |
| Hopkinsville | WHOP-FM | 98.7 |
| | WKOF | 100.3 |
| Jamestown | WJRS-FM | 103.1 |
| Leitchfield | WMTL-FM | 104.9 |
| Lexington | WBKY | 91.3 |
| | WLAP-FM | 94.5 |
| | WLEX-FM | 98.1 |

# WHITE'S RADIO LOG

| Location | C.L. | MHz |
|---|---|---|
| | WVLK-FM | 92.9 |
| Louisville | WFPK | 91.9 |
| | WFPL | 89.3 |
| | WHAS-FM | 97.5 |
| | WKLO-FM | 99.7 |
| | WLRS | 102.3 |
| | WXEL | 103.9 |
| Madisonville | WFMW-FM | 93.9 |
| | WNGO-FM | 94.7 |
| Manfordville | WLOC-FM | 102.3 |
| Manchester | WWXL-FM | 103.1 |
| Maysville | WFTM-FM | 95.9 |
| Monticello | WFLW-FM | 101.7 |
| Morehead | WMOR-FM | 92.1 |
| | WMKY-FM | 91.1 |
| Morganfield | WMSK-FM | 95.3 |
| Murray | WAAW | 103.7 |
| Owensboro | WOMI-FM | 92.5 |
| | WVJS-FM | 96.1 |
| Paducah | WPAD-FM | 96.9 |
| | WKYX-FM | 93.3 |
| Paintsville | WSIP-FM | 100.1 |
| Paris | WPDE-FM | 96.7 |
| Pikeville | WPKE-FM | 92.1 |
| Prestonburg | WDOC-FM | 95.5 |
| | WPRT-FM | 105.5 |
| Richmond | WEKU-FM | 88.9 |
| Russellville | WRUS-FM | 92.1 |
| St. Mathews | WSTM | 103.1 |
| Scottsville | WLCK-FM | 99.3 |
| Somerset | WSEK | 96.7 |
| | WSCC | 90.7 |
| Whitesburg | WTCW-FM | 104.9 |

## LOUISIANA

| | | |
|---|---|---|
| Alexandria | KALB-FM | 96.9 |
| Baton Rouge | WJBO-FM | 102.5 |
| | WAFB-FM | 98.1 |
| | WQXY-FM | 100.7 |
| DeRidder | KDLA-FM | 101.7 |
| Golden Meadow | KLEB-FM | 94.3 |
| Hammond | WTGI | 103.3 |
| Houma | KCIL-FM | 107.1 |
| Jennings | KJEF-FM | 92.7 |
| Jonesboro | KTOC-FM | 104.9 |
| Lafayette | KRVS-FM | 88.3 |
| | KPEL-FM | 99.9 |
| | KSMB | 94.5 |
| Lake Charles | KPLC-FM | 99.5 |
| | KIKS-FM | 96.1 |
| La Place | WCKW | 92.3 |
| Monroe | KMLB-FM | 104.1 |
| | KNOE-FM | 101.9 |
| | KREB | 106.1 |
| Morgan City | KMRC-FM | 96.7 |
| Mt. Vernon | KRNL-FM | 105.3 |
| Natchitoches | KNOC-FM | 97.7 |
| New Orleans | WBEH | 89.3 |
| | WDSU-FM | 105.3 |
| | WNNR-FM | 97.1 |
| | WWOM-FM | 98.5 |
| | WMMT | 95.7 |
| Opelousas | KSLO-FM | 107.1 |
| Ruston | KRUS-FM | 107.1 |
| Shreveport | KRMD-FM | 101.1 |
| | KBCL-FM | 96.5 |
| | KWKH-FM | 94.5 |
| Thibodaux | KTIB-FM | 106.3 |
| Ville Platte | KVPI-FM | 93.5 |
| W. Monroe | KUZN-FM | 98.3 |
| Winnfield | KVCL-FM | 92.1 |

## MAINE

| | | |
|---|---|---|
| Augusta | WFAU-FM | 101.3 |
| Bangor | WABI-FM | 97.1 |
| Brunswick | WBOR | 91.1 |
| | WCME-FM | 98.9 |
| Caribou | WFST-FM | 97.7 |
| Ellsworth | WDEA-FM | 95.7 |
| Lewiston | WCOU-FM | 93.9 |
| | WRJR | 91.5 |
| Orono | WMEB-FM | 91.9 |
| Poland Springs | WMTW-FM | 94.9 |
| Portland | WLOB-FM | 97.9 |
| | WPOR-FM | 101.9 |
| | WGAN-FM | 102.9 |

## MARYLAND

| | | |
|---|---|---|
| Annapolis | WNAV-FM | 99.1 |
| | WANN-FM | 107.9 |
| | WXTC | 107.9 |
| | WAQE-FM | 101.9 |
| Baltimore | WBJC | 91.5 |
| | 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 |
| | WTOW-FM | 101.9 |
| Bethesda | WJMD | 94.7 |
| | WHFS | 102.3 |
| Bradbury Heights | WPGC | 95.5 |
| Catonsville, Md. | WCBC | 105.7 |
| Cumberland | WCUM-FM | 102.9 |
| Frederick | WFMD-FM | 99.9 |
| Frostburg | WFRB-FM | 105.3 |
| Glen Burnie | WISZ-FM | 95.9 |
| Hagerstown | WJEJ-FM | 104.7 |
| | WARK-FM | 106.9 |
| Halfway | WHAG-FM | 96.7 |
| Havre de Grace | WASA-FM | 103.7 |
| Oakland | WBUZ | 95.5 |
| | WMSC-FM | 92.1 |
| Salisbury | WBOC-FM | 94.3 |
| Tacoma Park | WGTS-FM | 91.9 |
| Waldorf | WSMD-FM | 104.1 |
| Westminster | WTTR-FM | 100.7 |

## MASSACHUSETTS

| | | |
|---|---|---|
| Amherst | WAMF | 88.1 |
| | WFCR | 88.5 |
| | WMUA | 91.1 |
| Andover | WPAA | 91.7 |
| 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-FM | 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 | WFMP | 104.5 |
| Framingham | WKOX-FM | 105.7 |
| Gloucester | WVCA-FM | 104.9 |
| Greenfield | WHAI-FM | 98.3 |
| Haverhill | WHAV-FM | 92.5 |
| Hyannis | WKOD-FM | 106.1 |
| | WBRK-FM | 101.7 |
| Lawrence | WCCM-FM | 93.7 |
| Lowell | WLLH-FM | 99.5 |
| Lynn | WLYM-FM | 101.7 |
| Medford | WHIL-FM | 107.9 |
| New Bedford | WBSM-FM | 97.3 |
| | WNBH-FM | 98.1 |
| N. Adams | WMNB-FM | 100.1 |
| Northampton | WHMP-FM | 99.3 |
| Pittsfield | WQRB-FM | 105.5 |
| | WBRK-FM | 101.7 |
| Plymouth | WPLM-FM | 99.1 |
| S. Hadley | WMHC | 88.5 |
| Springfield | WHYN-FM | 93.1 |
| | WAIC | 91.9 |
| | WCRX | 102.1 |
| | WSCB | 88.9 |
| | WMAS-FM | 94.7 |
| Taunton | WRLM | 97.3 |
| Waltham | WCRB-FM | 102.5 |
| W. Yarmouth | WOCB-FM | 94.9 |
| Williamstown | WCFM | 91.3 |
| Winchester | WHSR-FM | 91.9 |
| Worcester | WAAB | 107.3 |
| | WSRS | 96.1 |

## MICHIGAN

| | | |
|---|---|---|
| Adrian | WLEN | 103.9 |
| | WVAC | 88.1 |
| Alma | WFYC-FM | 104.9 |
| Alpena | WHSB | 107.7 |
| | WATZ-FM | 93.5 |
| Battle Creek | WKFR-FM | 103.3 |
| Big Rapids | WBRN-FM | 100.9 |
| Ann Arbor | WUOM | 91.7 |
| | WPAG-FM | 107.1 |
| Bad Axe | WLEW-FM | 92.1 |
| Bay City | WBCM-FM | 96.1 |
| | WNEM-FM | 102.5 |
| Benton Hrbr. | WHFB-FM | 99.9 |
| Birmingham | WHFI | 94.7 |
| Charlotte | WCER-FM | 92.7 |
| Cheboygan | WCBY-FM | 105.1 |
| Clare | WCRM-FM | 95.3 |
| Coldwater | WTVB-FM | 98.3 |
| Dearborn | WKNR-FM | 100.3 |
| Detroit | WDET-FM | 101.9 |
| | WBFG | 98.7 |
| | WCHD | 105.9 |
| | WDTM | 106.7 |
| | WABX | 99.5 |
| | WDTR | 90.9 |
| | WGPM | 107.5 |
| | WJBK-FM | 93.1 |
| | WMUZ | 103.5 |
| | WGPR | 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 |
| | WCAR-FM | 92.3 |
| E. Lansing | WKAR-FM | 90.5 |
| | WITL-FM | 100.7 |
| | WSWM | 99.1 |
| | WVIC-FM | 95.7 |
| Flint | WFBE | 95.1 |
| | WGMZ-FM | 107.9 |
| | WMRP-FM | 105.5 |
| Grand Rapids | WFUR-FM | 102.9 |
| | WJFM | 93.7 |
| | WLAV-FM | 96.9 |
| | WYON | 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 |
| Hancock | WMPL-FM | 93.5 |
| Highland Pk. | WHPR | 88.1 |
| Holland | WJBL-FM | 94.5 |
| | WHTC-FM | 96.1 |
| Houghton Lake | WJGS | 98.5 |
| Interlochen | WGYA | 103.1 |
| | WIAA | 88.3 |
| Jackson | WIBM-FM | 94.1 |
| | WKHM-FM | 106.1 |
| Kalamazoo | WMUK | 102.1 |
| | WSEO-FM | 106.5 |
| Lansing | WJIM-FM | 97.5 |
| | WILS-FM | 101.7 |
| Mackinaw City | WRIW | 94.3 |
| Marquette | WNMR | 90.1 |
| | WDMJ-FM | 95.7 |
| Marshall | WALM-FM | 96.7 |
| | WMRR-FM | 104.9 |
| Midland | WQDC-FM | 99.7 |
| Monroe | WVMO | 98.3 |
| Mount Clemens | WBRB-FM | 102.7 |
| Mount Pleasant | WCMU | 90.1 |
| | WCEN-FM | 94.5 |
| Muskegon | WFFM | 106.9 |
| Oak Park | WLDM | 95.5 |
| Owasso | WOAP-FM | 103.9 |
| Petoskey | WJML | 98.9 |
| | WMBN-FM | 96.7 |
| Port Huron | WHLS-FM | 107.1 |
| Royal Oak | WOAK | 89.3 |
| | WOMC | 104.3 |
| Saginaw | WSAM-FM | 98.1 |
| St. Johns | WRBJ-FM | 92.1 |
| St. Joseph | WSJM-FM | 107.1 |
| Southfield | WSHJ | 88.3 |
| Spring Arbor | WSAE | 89.3 |
| Sturgis | WSTR-FM | 103.1 |
| Traverse City | WLDR-FM | 101.9 |
| | WCCW-FM | 92.1 |
| | WTCM-FM | 103.5 |
| Warren | WPHS | 91.5 |
| Ypsilanti | WEMU | 88.1 |

## MINNESOTA

| | | |
|---|---|---|
| Anoka | KTWN | 107.9 |
| Blue Earth | KBEW-FM | 100.9 |
| Brainerd | KLIZ-FM | 95.9 |
| Collegeville | KSJR-FM | 90.1 |
| Faribault | KDHL-FM | 95.9 |
| Golden Valley | KQRS-FM | 92.5 |
| Mankato | KMSD | 90.5 |
| | KYSM-FM | 103.5 |
| Minneapolis-St. Paul | KTIS-FM | 98.5 |
| | WLOL-FM | 99.5 |
| | KWFM | 97.1 |
| | KNOF | 95.3 |
| | WPBC-FM | 101.3 |
| | WAYL | 93.7 |
| | WCTS-FM | 100.3 |
| Moorhead | KVOX-FM | 99.9 |
| | KQWB-FM | 98.7 |
| New Ulm | WNUJ-FM | 93.1 |
| Owatonna | KRFO-FM | 104.9 |
| Park Rapids | WPRM-FM | 103.7 |
| Red Wing | KCUE-FM | 105.5 |
| Richfield | WPBC-FM | 101.3 |
| Rochester | KROC-FM | 106.9 |
| | KNXR | 97.5 |
| | KOLM-FM | 96.7 |
| St. Cloud | KFAM-FM | 104.7 |
| | KVSC | 88.5 |
| St. Louis Park | KRSI-FM | 104.1 |
| St. Paul | WMIN-FM | 102.1 |
| | KSTP-FM | 94.5 |
| St. Peter | KRBI-FM | 105.5 |
| Wilmar | KWLM-FM | 102.5 |
| | KWDA-FM | 95.1 |

## MISSISSIPPI

| | | |
|---|---|---|
| Biloxi | WVMI-FM | 106.3 |
| Columbia | WFFF-FM | 96.7 |
| Corinth | WKCU-FM | 94.3 |
| Forest | WQST | 92.5 |
| Greenwood | WSWG | 99.1 |
| Gulfport | WROA-FM | 107.1 |
| Hattiesburg | WHSY-FM | 104.5 |
| | WFOR-FM | 103.7 |
| Houston | WCPC-FM | 93.3 |
| Jackson | WJDX-FM | 102.9 |
| | KFXM | 95.5 |
| | WJMI | 99.7 |
| | WSLI-FM | 96.3 |
| | WWHO | 94.7 |
| Kosciusko | WKOZ-FM | 105.1 |
| Laurel | WNSL-FM | 100.3 |
| Louisville | WLSM-FM | 107.1 |
| Magee | WSJC-FM | 107.5 |
| McComb | WCCA | 94.1 |
| Meridian | WMMI | 88.1 |
| Moss Point | WACY-FM | 104.9 |
| Natchez | WNAT-FM | 95.1 |
| New Albany | WNAU-FM | 103.5 |
| Pascagoula | WPMP-FM | 99.1 |
| Poplarville | WRPM-FM | 107.9 |
| Pontotoc | WSEL-FM | 96.7 |
| Tupelo | WELO-FM | 98.5 |
| Vicksburg | WQMV | 98.7 |
| Yazoo City | WJNS-FM | 92.1 |

## MISSOURI

| | | |
|---|---|---|
| Buffalo | KBFL | 91.3 |
| Cape Girardeau | KZYM-FM | 102.9 |
| Carrollton | KAOL-FM | 101.1 |
| Clayton | KFUO-FM | 99.1 |
| Columbia | KWWC-FM | 90.5 |
| Crestwood | KSHE | 94.7 |
| Dexter | KDEX-FM | 107.3 |
| El Dorado Springs | KESM-FM | 101.7 |
| Houston | KBTC-FM | 99.3 |
| 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 |
| | KMBR-FM | 99.7 |
| | KPRS-FM | 103.3 |
| | KXTR | 96.5 |
| Kennett | KBOA-FM | 98.9 |
| Kirksville | KRXL | 94.5 |
| Mexico | KWWR-FM | 95.7 |
| Moberly | KRES | 104.7 |
| Osage Beach | KRMS-FM | 93.5 |
| Point Lookout | KSOZ | 88.1 |
| Poplar Bluff | KWOC-FM | 94.5 |
| Rolla | KCLU-FM | 94.3 |
| | KMSM | 88.5 |
| Ste. Genevieve | KSGM-FM | 105.7 |
| St. Joseph | KUSN-FM | 105.1 |
| St. Louis | KCFM | 93.7 |
| | KACO | 107.7 |
| | KADI | 96.5 |
| | WAMV-FM | 101.1 |
| | WIL-FM | 92.3 |
| | KRCH | 98.1 |
| | KSLH | 91.5 |
| | KRFD | 106.9 |
| Sedalia | KSIS-FM | 92.1 |
| Springfield | KTTS-FM | 94.7 |
| | KTXR | 101.5 |
| | KWTO-FM | 98.7 |
| | KLPW-FM | 101.9 |
| Waynesville | KFBO | 97.7 |
| West Plains | KWPM-FM | 93.9 |

## MONTANA

| | | |
|---|---|---|
| Belgrade | KGVW-FM | 96.7 |
| Billings | KURL-FM | 97.1 |
| Bozeman | KBHF | 93.7 |
| Great Falls | KOPR-FM | 106.3 |
| Missoula | KUFM | 88.1 |

## NEBRASKA

| | | |
|---|---|---|
| Beatrice | KWBE-FM | 92.9 |
| Columbus | KJSK-FM | 101.1 |
| Hastings | KICS-FM | 93.5 |
| Kearney-Holdrege | KRNY-FM | 98.9 |
| | KRUN-FM | 93.1 |
| Lexington | KFMQ | 95.3 |
| Lincoln | KWHG | 106.3 |
| Omaha | KFAB-FM | 99.9 |
| | KFBI-FM | 100.7 |
| | KOIL-FM | 96.1 |
| | KOWH-FM | 94.1 |
| | WOW-FM | 92.3 |
| Scottsbluff | KNEW-FM | 94.1 |

## NEVADA

| | | |
|---|---|---|
| Fallon | KVLV-FM | 99.3 |
| Las Vegas | KORK-FM | 97.1 |
| | KRGN | 101.9 |
| | KLUC-FM | 98.5 |
| | KVEG-FM | 92.3 |
| Reno | KNEV | 95.5 |
| | KUNR | 88.1 |
| | KSRN | 104.5 |

## NEW HAMPSHIRE

| | | |
|---|---|---|
| Berlin | WMOU-FM | 103.7 |
| Claremont | WTSV-FM | 106.1 |
| Conway | WBNC-FM | 93.5 |
| Durham | WUNH | 90.3 |
| Exeter | WPEA | 90.1 |
| Laconia | WLNH-FM | 98.3 |
| Keene | WKNE-FM | 103.7 |
| Manchester | WKBR-FM | 95.7 |
| | WGIR-FM | 101.1 |
| Mt. Washington | WMTW-FM | 94.9 |
| Nashua | WOTW-FM | 106.3 |
| Portsmouth | WPFM | 100.3 |

| Location | C.L. | MHz |
|---|---|---|
| **NEW JERSEY** | | |
| Asbury Park | WJLK-FM | 94.3 |
| | WHTG-FM | 105.5 |
| Atlantic City | WFPG-FM | 96.9 |
| | WMGM | 103.7 |
| | WRNJ | 95.1 |
| Bridgeton | WSNJ-FM | 107.7 |
| Camden | WKDN-FM | 106.9 |
| Cape May | WRIO-FM | 101.7 |
| Dover | WDHA-FM | 105.5 |
| E. Orange | WFMU | 91.1 |
| Eatontown | WHTG-FM | 106.3 |
| Franklin | WLVP | 102.3 |
| Franklin Lakes | WRRH | 88.7 |
| Glassboro | WGLS-FM | 89.7 |
| Hackettstown | WNTI | 91.9 |
| Hanover | WHPH | 90.3 |
| Long Branch | WRLB | 107.1 |
| Millville | WMVB-FM | 97.3 |
| Newark | WHBI | 105.9 |
| | WFME | 94.7 |
| | WVNJ-FM | 100.3 |
| | WBGO | 88.3 |
| New Brunswk. | WCTC-FM | 98.3 |
| Newton | WIXL-FM | 103.7 |
| Paterson | WPAT-FM | 93.1 |
| Princeton | WPRB | 103.3 |
| Red Bank | WFHA-FM | 106.3 |
| South Orange | WSOU | 89.5 |
| Toms River | WOBM | 92.7 |
| Trenton | WBJH | 101.5 |
| | WTOA | 97.5 |
| | WTSR | 89.7 |
| | WTTM-FM | 94.5 |
| Wildwood | WCMC-FM | 100.7 |
| Zarephath | WAWZ-FM | 99.1 |
| **NEW MEXICO** | | |
| Alamogordo | KXXI | 94.3 |
| | KOTO | 105.5 |
| Albuquerque | KANW | 89.1 |
| | KBNM | 99.5 |
| | KDEF-FM | 94.1 |
| | KRST | 92.3 |
| | KHFM | 96.3 |
| | KOAT-FM | 100.3 |
| | KOB-FM | 93.3 |
| | KUMN | 90.1 |
| Artesia | KSVP-FM | 92.9 |
| Carlsbad | KCNM | 92.1 |
| Clovis | KTQM-FM | 99.9 |
| Hobbs | KHOB-FM | 95.7 |
| Los Alamos | KRSN-FM | 98.5 |
| Las Cruces | KGRD-FM | 103.9 |
| Las Vegas | KEDP | 91.1 |
| Lovington | KLEA-FM | 101.7 |
| Mountain Park | KMFM | 97.9 |
| Roswell | KBIM-FM | 94.9 |
| Santa Fe | KAFE-FM | 97.3 |
| | KSNM | 95.5 |
| Taos | KKIT-FM | 99.3 |
| Tucumcari | KTNM-FM | 92.7 |
| University Park | KRWG | 91.7 |
| **NEW YORK** | | |
| Albany | WAMC | 90.3 |
| | WHRL | 103.1 |
| | WROW-FM | 95.5 |
| Auburn | WMBO-FM | 106.9 |
| Babylon | WTFM | 103.5 |
| | WGSM-FM | 94.3 |
| | WBAB-FM | 102.3 |
| Binghamton | WNBF-FM | 98.1 |
| | WHRW | 90.5 |
| | WKOP-FM | 99.1 |
| Baldwinsville | WSEN-FM | 92.1 |
| Brooklyn | WNYE | 91.5 |
| Brookville | WCWP | 88.1 |
| Buffalo | WBEN-FM | 102.5 |
| | WDCX | 99.5 |
| | WBFD | 88.7 |
| | WBUF | 93.3 |
| | WEBR | 94.5 |
| | WGR-FM | 96.9 |
| | WTSL-FM | 103.3 |
| | WWDL-FM | 104.1 |
| | WYSL-FM | 103.3 |
| | WBNY-FM | 96.1 |
| Canton | WSLU | 89.7 |
| Central Square | WCSQ | 89.3 |
| Cherry Valley | WJIV | 101.9 |
| Clinton | WHCL-FM | 88.7 |
| Corning | WCLI-FM | 106.1 |
| Cortland | WKRT-FM | 99.9 |
| Depew | WBLK-FM | 93.7 |
| DeRuyter | WOIV | 105.1 |
| Elmira | WECW | 88.1 |
| | WEHH-FM | 94.3 |
| | WENY-FM | 92.7 |
| Floral Park | WSHS | 90.3 |
| Garden City | WLIR | 92.7 |
| Geneseo | WGSU | 89.3 |
| Glen Falls | WWSC-FM | 95.9 |
| | WXQL | 107.1 |
| Hempstead | WHLI-FM | 98.3 |
| | WVHC | 88.7 |
| Hornell | WWHG-FM | 105.3 |
| Ithaca | WHCU-FM | 97.3 |
| | WICB | 91.7 |
| | WEIV | 103.7 |
| Jamestown | WVBR-FM | 93.5 |
| | WJTN-FM | 93.3 |
| Johnstown | WKSN-FM | 101.7 |
| Kenmore | WIZR-FM | 104.9 |
| Kingston | WYSL-FM | 103.3 |
| | WGHQ-FM | 94.3 |
| | WNDN | 97.7 |
| Lake Success | WTFM | 103.5 |
| Liberty | WVOS-FM | 95.9 |
| Loudonville | WVCR-FM | 89.1 |
| Middletown | WALL-FM | 92.7 |
| Mt. Kisco | WRNW | 107.1 |
| | WVIP-FM | 106.3 |
| Newburgh | WFMN | 103.1 |
| New Rochelle | WVOX-FM | 98.5 |
| New York | WABC-FM | 95.5 |
| | WBAI | 99.5 |
| | WCBS-FM | 101.1 |
| | WEVD-FM | 97.9 |
| | WFUV | 90.7 |
| | WHOM-FM | 92.3 |
| | WKCR-FM | 89.9 |
| | WLIB-FM | 107.5 |
| | WNCN | 104.3 |
| | WNEW-FM | 102.7 |
| | WNBC-FM | 97.1 |
| | WNYC-FM | 93.9 |
| | WNYE | 91.5 |
| | WOR-FM | 98.7 |
| | WPIX-FM | 101.9 |
| | WQXR-FM | 96.3 |
| | WRFM | 105.1 |
| | WRVR | 106.7 |
| Niagara Falls | WHLD-FM | 98.5 |
| Norwich | WCHN-FM | 93.9 |
| Olean | WHDL-FM | 95.7 |
| Oswego | WOSE | 104.9 |
| Plattsburg | WEAV-FM | 99.9 |
| Patchogue | WALK-FM | 97.5(s) |
| | WPAC-FM | 106.1 |
| Peekskill | WLNA-FM | 100.7 |
| Potsdam | WTSC-FM | 91.1 |
| Poughkeepsie | WKIP-FM | 104.7 |
| | WEOK-FM | 101.5 |
| Riverhead | WAPC-FM | 103.9(s) |
| Rochester | WHFM | 98.9 |
| | WBBF-FM | 92.5 |
| | WCMF | 96.5 |
| | WIRQ | 90.9 |
| | WNYR-FM | 101.3 |
| | WROC-FM | 97.9 |
| | WRUR-FM | 90.1 |
| | WVOR | 100.5 |
| Sag Harbor | WLNG-GM | 92.1 |
| Schenectady | WGFM | 99.5 |
| South Bristol | WMIV | 95.1 |
| Springville | WSPE | 88.1 |
| Syracuse | WAER | 88.1 |
| | WDDS-FM | 93.1 |
| | WONO | 107.9 |
| | WSRV | 100.9 |
| | WSYR-FM | 94.5 |
| Troy | WFLY | 92.3 |
| | WRPI | 91.5 |
| Utica | WRUN-FM | 105.7 |
| | WIBQ-FM | 94.9 |
| | WOUR | 96.9 |
| Wethersfield | WBIV | 105.7 |
| White Plains | WFAS-FM | 103.9 |
| **NORTH CAROLINA** | | |
| Albemarle | WABZ-FM | 100.9 |
| Asheboro | WGWR-FM | 92.3 |
| Asheville | WLOS-FM | 104.3 |
| Bridgeton | WVWB-FM | 97.7 |
| Burlington | WBBB-FM | 101.1 |
| | WFNS-FM | 93.9 |
| Black Mountain | WMIT | 106.9 |
| Burgaw | WPGF-FM | 99.9 |
| Burlington-Graham | WBAG-FM | 92.9 |
| Chapel Hill | WUNC | 91.5 |
| Charlotte | WBT-FM | 107.9 |
| | WIST-FM | 95.1 |
| | WSOC-FM | 103.7 |
| | WYFM | 104.7 |
| Clingman's Pk. | WMIT | 106.9 |
| Clinton | WRRZ-FM | 107.1 |
| Concord | WEGO-FM | 97.9 |
| Durham | WDNC-FM | 105.1 |
| | WSRC-FM | 107.1 |
| Elkin | WIFM-FM | 100.9 |
| Fayetteville | WFNC-FM | 98.1 |
| Forest City | WBBO-FM | 93.3 |
| | WAGY-FM | 105.3 |
| Franklin | WFSC-FM | 96.7 |
| Gastonia | WGNC-FM | 101.9 |
| Goldsboro | WEQR | 96.9 |
| Greensboro | WMDE | 98.7 |
| | WQMG-FM | 97.1 |
| | WUAG | 89.9 |
| Greenville | WNCT-FM | 107.7 |
| Grifton | WITN-FM | 93.3 |
| Henderson | WHNC-FM | 92.5 |
| | WHKP-FM | 102.5 |
| Hendersonville | WHKP-FM | 102.5 |
| Hickory | WHKY-FM | 102.9 |
| | WXRC | 95.7 |
| High Point | WHPE-FM | 95.5 |
| | WMFR-FM | 99.5 |
| | WNOS-FM | 100.3 |
| Jacksonville | WJNC-FM | 92.1 |
| Kannapolis | WXQR-FM | 105.5 |
| | WRKB-FM | 99.7 |
| Kinston | WFTC-FM | 95.1 |
| Laurinburg | WEWO-FM | 96.5 |
| Leaksville | WLOE-FM | 94.5 |
| Lexington | WBUY-FM | 94.3 |
| Lumberton | WTSB-FM | 95.7 |
| | WAGR-FM | 102.3 |
| North Wilkesboro | WKBC-FM | 97.3 |
| Raleigh | WKIX-FM | 96.1 |
| | WKNC-FM | 88.1 |
| | WPTF-FM | 94.7 |
| | WRAL-FM | 101.5 |
| Reidsville | WWMO-FM | 102.1 |
| Rocky Mount | WEED-FM | 92.1 |
| | WFMA | 100.7 |
| Rochester | WVOR | 92.5 |
| Rexboro | WRXO-FM | 96.7 |
| Salisbury | WSTP-FM | 106.5 |
| Sanford | WWGP-FM | 105.5 |
| Shelby | WOHS-FM | 96.1 |
| Statesville | WFMX | 105.7 |
| Tabor City | WTAB-FM | 104.9 |
| Tarboro | WCPS-FM | 104.3 |
| Thomasville | WTNC-FM | 98.3 |
| Washington | WITN-FM | 93.3 |
| Williamston | WIAM | 103.7 |
| Wilmington | WPRV | 99.9 |
| | WHSL-FM | 97.3 |
| Wilson | WVOT-FM | 106.1 |
| Winston-Salem | WAIR-FM | 93.1 |
| | WAAA-FM | 107.5 |
| | WFDD-FM | 88.1 |
| | WSJS-FM | 104.1 |
| **NORTH DAKOTA** | | |
| Bismarck | KFYR-FM | 92.9 |
| Devils Lake | KDLR-FM | 96.7 |
| Fargo | KFNW-FM | 97.9 |
| | WDAY-FM | 93.7 |
| | KDSU | 91.9 |
| Grand Forks | KVBC | 94.7 |
| Minot | KCJB-FM | 97.1 |
| **OHIO** | | |
| Akron | WAKR-FM | 97.5 |
| | WAPS | 89.1 |
| | WCUE-FM | 96.5 |
| Alliance | WFAH-FM | 101.7 |
| Ashland | WNCO-FM | 101.3 |
| | WRLD | 88.1 |
| Ashtabula | WREO-FM | 97.1 |
| Athens | WOUB-FM | 88.5 |
| | WATH-FM | 105.5 |
| | WOMP-FM | 100.5 |
| Bellaire | WBWC | 88.3 |
| Berea | WAWR-FM | 93.5 |
| Bowling Green | WBGU | 88.1 |
| Bryan | WBNO-FM | 100.9 |
| Bucyrus | WBCO-FM | 92.7 |
| Cambridge | WILE-FM | 96.7 |
| Canton | WHBC-FM | 94.1 |
| | WNYN-FM | 106.9 |
| | WTOF | 98.1 |
| Cedarville | WCDR-FM | 90.1 |
| Celina | WMER-FM | 94.3 |
| | WCSM-FM | 96.7 |
| Chillicothe | WBXE-FM | 95.3 |
| Cincinnati | WAEF-FM | 98.5 |
| | WCPO-FM | 105.1 |
| | WEBN-FM | 102.7 |
| | WAKW-FM | 93.3 |
| | WGUC | 90.9 |
| | WKRC-FM | 101.9 |
| | WZIP-FM | 92.5 |
| Circleville | WNRE | 104.9 |
| Cleveland | KYW-FM | 105.7 |
| | WBOE | 90.3 |
| | WCRF-FM | 103.3 |
| | WCLV | 95.5 |
| | WOOK | 102.1 |
| | WERE-FM | 98.5 |
| | WGAR-FM | 99.5 |
| | WHK-FM | 100.7 |
| | WJW-FM | 104.1 |
| | WNOB | 107.9 |
| | WRUW-FM | 91.1 |
| | WXEN | 106.5 |
| | WZAK | 93.1 |
| Cleveland Hts. | WCUY-FM | 92.3 |
| Columbus | WCBE | 90.5 |
| | WBNS-FM | 97.1 |
| | WCOL-FM | 92.3 |
| | WMNI-FM | 99.7 |
| | WNCI | 97.9 |
| | WOSU-FM | 89.7 |
| | WTVN-FM | 96.3 |
| | WVKO | 94.7 |
| Conneault | WFIZ | 104.9 |
| Dayton | WHID-FM | 99.1 |
| | WONE-FM | 104.7 |
| | WDAO | 107.7 |
| Delaware | WSLN | 88.7 |
| East Liverpool | WOHI-FM | 104.3 |
| Eaton | WCTM | 92.9 |
| Elyria | WBEA | 107.3 |
| Fairfield | WCNW-FM | 94.9 |
| 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 |
| Hillsboro | WSRW-FM | 106.7 |
| Holland | WPOS-FM | 102.3 |
| Kent | WKSU-FM | 88.1 |
| | WKNT-FM | 100.1 |
| Kenton | WKTN-FM | 98.3 |
| Kettering | WVUD-FM | 99.9 |
| Lancaster | WHOK-FM | 95.5 |
| Lima | WIMA-FM | 102.1 |
| | WTGN | 97.7 |
| Logan | WLGN-FM | 98.3 |
| London | WLNO | 106.3 |
| Mansfield | WVNO | 106.1 |
| Marietta | WCMO | 89.3 |
| | WMOA-FM | 94.3 |
| Marion | WMRN-FM | 106.9 |
| Medina | WDBN | 94.9 |
| Miamisburg | WFCJ | 93.9 |
| Middletown | WPFB-FM | 105.9 |
| Mt. Vernon | WMVO-FM | 93.7 |
| New Concord | WMCO | 91.1 |
| Newark | WCLT-FM | 100.3 |
| Norwalk | WLKR-FM | 95.3 |
| Oxford | WMUB | 88.5 |
| | WOXR | 97.7 |
| Piqua | WPTW-FM | 95.7 |
| Port Clinton | WRWR-FM | 94.5 |
| Portsmouth | WPAY-FM | 104.1 |
| | WNXT-FM | 99.3 |
| Salem | WSOM-FM | 105.1 |
| Sandusky | WLEC-FM | 102.7 |
| Sidney | WMVR-FM | 105.5 |
| Springfield | WBLY-FM | 103.9 |
| | WEEC-FM | 100.7 |
| | WUSO | 89.1 |
| Steubenville | WSTV-FM | 103.5 |
| Struthers | WKTL | 90.7 |
| Tiffin | WTTF-FM | 103.7 |
| Toledo | WSPD-FM | 101.5 |
| | WMHE | 92.5 |
| | WTDS | 91.3 |
| | WTOL-FM | 104.7 |
| | WTRT | 99.9 |
| Urbana | WCOM-FM | 101.7 |
| Van Wert | WERT-FM | 98.9 |
| Wapakoneta | WERM | 92.1 |
| Washington Court House | WCHO-FM | 105.5 |
| Westerville | WOBN | 91.5 |
| Wilberforce | WCSU-FM | 88.9 |
| Wooster | WWST-FM | 104.5 |
| Worthington-Columbus | WRFD-FM | 97.9 |
| Xenia | WHBM-FM | 103.9 |
| | WBZI | 95.3 |
| Yellow Springs | WYSO | 91.5 |
| Youngstown | WKBN-FM | 98.9 |
| | WBBW-FM | 93.3 |
| | WRED | 101.1 |
| Zanesville | WHIZ-FM | 102.5 |
| **OKLAHOMA** | | |
| Bethany | KNBQ | 104.9 |
| Chickasha | KNDR | 105.5 |
| Durant | KSEO-FM | 107.3 |
| Edmond | KWHB | 97.7 |
| | KCSC | 88.1 |
| Enid | KCRC-FM | 96.9 |
| Eufaula | KCES | 102.3 |
| Henryetta | KHEN-FM | 99.5 |
| Lawton | KLAW | 101.5 |
| McAlester | KNEO-FM | 101.3 |
| Midwest City | KTEA-FM | 92.5 |
| Muskogee | KMMM-FM | 106.9 |
| Norman | WNAO-FM | 90.9 |
| Nowata | KNFB | 94.3 |
| Oklahoma City | KOKH | 88.9 |
| | KEFM | 94.7 |
| | KIOD | 100.5 |
| | KJEM-FM | 102.7 |
| | KOCY-FM | 96.1 |
| | KOFM | 104.1 |
| | KYFM | 98.9 |
| | KFNB | 101.9 |
| Ponca City | KLOR-FM | 99.3 |
| Shawnee | KBGC | 89.9 |
| Stillwater | KDSU-FM | 91.7 |
| | KSPI-FM | 93.9 |
| | KVRD | 105.5 |
| Tahlequah | KTLQ-FM | 101.7 |
| Tulsa | KWGS | 90.5 |
| | KRMG-FM | 95.5 |
| | KOCW | 97.5 |
| | KOGM-FM | 92.9 |
| | KORU | 103.3 |
| | KRAV | 96.5 |
| **OREGON** | | |
| Corvallis | KFLY-FM | 101.5 |
| | KBVR | 90.1 |
| Eugene | KRVM | 91.9 |
| | KORE-FM | 93.1 |
| | KFMY | 97.9 |
| | KPNW | 90.3 |
| | KUGN-FM | 99.1 |
| | KWAX | 91.1 |

# WHITE'S RADIO LOG

| Location | C.L. | MHz |
|---|---|---|
| | KBMC | 94.5 |
| Grants Pass | KGPO | 96.9 |
| Medford | KBOY-FM | 95.3 |
| Oretech | KTEC | 88.3 |
| Portland | KOAP-FM | 92.3 |
| | KGMG | 95.5 |
| | KOIN-FM | 101.1 |
| | KPDQ-FM | 105.3 |
| | KPFM | 97.1 |
| | KPOJ-FM | 98.5 |
| | KQFM | 100.3 |
| | KRRC | 89.3 |

## PENNSYLVANIA

| | | |
|---|---|---|
| Allentown | WFMZ | 100.7 |
| | WAEB-FM | 104.1 |
| | WMUH | 89.7 |
| Altoona | WVAM-FM | 100.1 |
| | WFBG-FM | 98.1 |
| Beaver Falls | WBVP-FM | 106.7 |
| | WGEV | 88.3 |
| Bedford | WAKM | 100.9 |
| Bellwood | WHGM | 103.9 |
| 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 |
| Carbondale | WODL-FM | 94.3 |
| Carlisle | WHYL-FM | 102.3 |
| Chambersburg | WCHA-FM | 95.1(s) |
| Charleroi | WESA-FM | 98.3 |
| Clearfield | WCPA-FM | 93.5 |
| DuBois | WCED-FM | 102.1 |
| Easton | WEST-FM | 107.9 |
| | WJRH | 90.5 |
| | WEEX-FM | 99.9 |
| Ebensburg | WEND-FM | 99.1 |
| Elizabethtown | WMSH-FM | 106.7 |
| Erie | WWYN-FM | 99.9 |
| Gettysburg | WGET-FM | 107.7 |
| Greencastle | WKSL | 94.3 |
| Greensburg | WOKU-FM | 107.1 |
| Greenville | WGRP-FM | 107.1 |
| Grove City | WEDA-FM | |
| Harrisburg | WHP-FM | 97.3 |
| | WMSP | 94.9 |
| | WTPA-FM | 104.1 |
| | WCMB-FM | 99.3 |
| Havertown | WHHS | 89.3 |
| Hazleton | WAZL-FM | 97.9 |
| Jenkintown | WIBF-FM | 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 |
| Lewisburg | WVBU-FM | 90.5 |
| Lewiston | WMRF-FM | 95.9 |
| Lock Haven | WBPZ-FM | 92.1 |
| Martinsburg | WJSM | 92.7 |
| Meadville | WARD | 90.3 |
| | WMGW-FM | 100.3 |
| Media | WXUR-FM | 100.3 |
| Montrose | WPEL-FM | 96.5 |
| New Kensington-Tarentum | WYDD | 100.7 |
| Oil City | WDJR | 98.5 |
| Palmyre | WRLC | 92.1 |
| Philadelphia | WCAU-FM | 98.1 |
| | WPBS-FM | 105.3 |
| | WDAS-FM | 105.3 |
| | WRCP-FM | 104.5 |
| | WFIL-FM | 102.1 |
| | WDVR | 101.1 |
| | WFLN | 95.7 |
| | WHAT-FM | 96.5 |
| | WUHY-FM | 90.9 |
| | WIFI | 92.5 |
| | WIBG-FM | 94.1 |
| | WMMR | 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 |
| | WEEP-FM | 107.9 |
| | WTAE-FM | 96.1 |
| | KQV-FM | 102.5 |
| | WDUQ | 91.5 |
| | WJAS-FM | 99.7 |
| | WKJF | 93.7 |
| | WPIT-FM | 101.5 |
| | WWSW-FM | 94.5 |
| | WYDD | 104.7 |
| Pottsville | WPPA-FM | 101.9 |
| Reading | WRFY-FM | 102.5 |
| | WXAC | 91.3 |
| Red Lion | WGCB-FM | 96.1 |
| Ridgeway | WKBI-FM | 94.3 |
| Scranton | WGBI-FM | 101.3 |
| | WUSV | 88.9 |
| | WWDL-FM | 104.9 |
| Selinsgrove | WQSU | 91.5 |
| Sharon | WPIC-FM | 102.9 |
| Somerset | WVSC-FM | 97.7 |
| State College | WMAJ-FM | 103.1 |
| | WDFM | 91.1 |
| | WRSC-FM | 96.7 |
| Stroudsburg | WVPO-FM | 93.5 |
| Sunbury | WKOK-FM | 94.1 |
| Tamaqua | WSVB | 105.5 |
| Telford | WBMR | 89.7 |
| Towanda | WTTC-FM | 95.3 |
| Tyrone | WGMR-FM | 102.3 |
| Union City | WBVB | 106.3 |
| University Park | WDFM | 91.1 |
| Warren | WRRN | 92.3 |
| Washington | WJPA-FM | 95.3 |
| Waynesboro | WAYZ-FM | 101.5 |
| Wilkes-Barre | WBRE-FM | 98.5 |
| | WYZZ | 92.9 |
| Williamsport | WLYC-FM | 105.1 |
| | WRAK-FM | 100.3 |
| York | WNOW-FM | 105.7 |
| | WSBA-FM | 103.3 |

## RHODE ISLAND

| | | |
|---|---|---|
| Cranston | WLOV | 99.9 |
| Kingston | WRIU | 91.1 |
| Providence | WPJB-FM | 105.1 |
| | WBRU | 95.5 |
| | WDOM | 91.3 |
| | WICE-FM | 107.7 |
| | WHIM-FM | 94.1 |
| | WPRO-FM | 92.3 |
| | WCRQ | 101.5 |
| Warwick | WBHS | 90.5 |
| Woonsocket | WWON-FM | 106.3 |

## SOUTH CAROLINA

| | | |
|---|---|---|
| Aiken | WLOW-FM | 95.9 |
| | WAKN-FM | 99.3 |
| Anderson | WCAC | 101.1 |
| | WANS-FM | 107.3 |
| Bamberg | WWBD-FM | 92.7 |
| Barnwell | WBAW-FM | 101.7 |
| Batesburg | WBLR-FM | 92.1 |
| Beaufort | WBEU-FM | 98.7 |
| Charleston | WCSC-FM | 96.9 |
| | WTMA-FM | 95.1 |
| Clemson | WSBF-FM | 88.1 |
| Columbia | WCOS-FM | 97.9 |
| | WNOK-FM | 104.7 |
| | WUSC-FM | 89.9 |
| Conway | WLAT-FM | 104.1 |
| Darlington | WDAR-FM | 105.5 |
| Dillon | WDSC-FM | 92.9 |
| Easley | WELP-FM | 103.9 |
| Florence | WJMX-FM | 103.1 |
| Greenville | WESC-FM | 92.5 |
| | WFBC-FM | 93.7 |
| | WMUU-FM | 94.5 |
| Greenwood | WCRS-FM | 96.7 |
| Kingstree | WDKD-FM | 100.1 |
| Lancaster | WLCM-FM | 107.1 |
| Laurens-Clinton | WLBG-FM | 100.5 |
| Myrtle Beach | WMYB-FM | 92.1 |
| N. Charleston | WKTM | 102.5 |
| Orangeburg | WDIX-FM | 106.7 |
| Rock Hill | WRHI-FM | 98.3 |
| Seneca | WBFM | 98.1 |
| Spartanburg | WSPA-FM | 98.9 |
| Sumter | WFIG-FM | 101.3 |

## SOUTH DAKOTA

| | | |
|---|---|---|
| Hot Springs | KOBH-FM | 96.7 |
| Sioux Falls | KELO-FM | 92.5 |
| Vermillion | KUSD-FM | 89.9 |

## TENNESSEE

| | | |
|---|---|---|
| Bristol | WOPI-FM | 96.9 |
| Brownsville | WBHT-FM | 95.3 |
| Chattanooga | WDOD-FM | 96.5 |
| | WLOM | 106.5 |
| | WDEF-FM | 92.3 |
| Cleveland | WCLE-FM | 100.7 |
| Clinton | WYSH-FM | 104.9 |
| Collegedale | WSMC | 90.7 |
| Columbia | WYFY-FM | 101.7 |
| Cookeville | WHUB-FM | 98.3 |
| | WPTN-FM | 94.3 |
| Covington | WKBL-FM | 93.5 |
| Crossville | WAEW-FM | 99.3 |
| Dickson | WDKN-FM | 102.3 |
| Dyersburg | WTRD-FM | 100.1 |
| Franklin | WFLT-FM | 100.1 |
| Gallatin | WFMG | 104.5 |
| Greeneville | WOFM | 94.9 |
| Humboldt | WIRJ-FM | 102.3 |
| Jackson | WTJS-FM | 104.1 |
| Jamestown | WOEB | 100.1 |
| Johnson City | WJCW-FM | 101.5 |
| Kingsport | WKPT-FM | 98.5 |
| Knoxville | WBIR-FM | 93.5 |
| | WEZK | 97.5 |
| | WIVK-FM | 107.7 |
| | WKCS | 91.1 |
| | WUOT | 91.9 |
| Lawrenceburg | WDXE-FM | 95.9 |
| Lebanon | WFMQ | 91.3 |
| Lexington | WDXL-FM | 99.3 |
| Livingston | WLIV-FM | 95.9 |
| Manchester | WMSR-FM | 99.7 |
| McKenzie | WKTA | 106.9 |
| McMinnville | WHNR | 101.7 |
| Memphis | WMC-FM | 99.7 |
| | WCBD | 91.1 |
| | WDIA-FM | 104.5 |
| | KLYX | 101.1 |
| | WMPS-FM | 97.1 |
| | WREC-FM | 102.7 |
| Milan | WKBJ-FM | 92.3 |
| Morristown | WMTN-FM | 95.9 |
| Murfreesboro | WMTS-FM | 96.3 |
| Nashville | WLAC-FM | 105.9 |
| | WKDA-FM | 103.3 |
| | WPLN | 90.3 |
| | WLWM | 95.5 |
| | WSET | 92.9 |
| | WSIX-FM | 97.9 |
| | WATO-FM | 94.3 |
| | WBNT-FM | 105.5 |
| Oneida | WORM-FM | 101.9 |
| Savannah | WSEV-FM | 102.1 |
| Sevierville | WSMT-FM | 105.5 |
| Sparta | WDBL-FM | 94.3 |
| Springfield | WJIG-FM | 93.3 |
| Tullahoma | | |

## TEXAS

| | | |
|---|---|---|
| Abernathy | KWGO-FM | 99.5 |
| Abilene | KACC-FM | 91.1 |
| | KFMN | 99.3 |
| | KWKC-FM | 105.1 |
| Amarillo | KGNC-FM | 93.1 |
| | KVII-FM | 94.1 |
| Austin | KHFI-FM | 98.3 |
| | KAZZ | 95.5 |
| | KMFA | 89.5 |
| | KTBC-FM | 93.7 |
| | KUT-FM | 90.7 |
| | KVET-FM | 100.7 |
| Beaumont | KHCB-FM | 105.7 |
| | KAYD-FM | 97.5 |
| | KTRM-FM | 95.1 |
| | KJET-FM | 107.7 |
| | KLVI-FM | 94.1 |
| Big Spring | KFNE | 95.3 |
| Borger | KBBB-FM | 104.3 |
| Brenham | KWHI-FM | 106.3 |
| Brownwood | KHPC | 88.1 |
| | KFRN-FM | 99.3 |
| Bryan | KORA-FM | 98.3 |
| Clear Lake City | KMSC | 102.1 |
| Cleburne | KCLE-FM | 94.9 |
| College Station | WTAW-FM | 92.1 |
| Conroe | KNRO | 106.9 |
| | KNRO-FM | 106.5 |
| Corpus Christi | KZFM | 95.5 |
| | KSIX-FM | 93.9 |
| Dalhart | KXIT-FM | 94.3 |
| Dallas | KIXL-FM | 104.5 |
| | KEIR | 102.9 |
| | KMAP | 105.3 |
| | KNER | 88.1 |
| | KNUS | 98.7 |
| | KRLD-FM | 92.5 |
| | WFAA-FM | 97.9 |
| | WRR-FM | 101.1 |
| | KVTT | 91.7 |
| | KBOX-FM | 100.3 |
| Del Rio | KDLK-FM | 94.3 |
| Denison-Sherman | KDSX-FM | 101.7 |
| Denton | KDNT-FM | 106.1 |
| DiBoll | KSPL-FM | 95.5 |
| Dumas | KDDD-FM | 95.3 |
| El Paso | KVOF-FM | 88.5 |
| | KPAK | 94.7 |
| | KTSM-FM | 99.9 |
| Ft. Worth | WBAP-FM | 96.3 |
| | KBUY-FM | 93.9 |
| | KFJZ-FM | 97.1 |
| | KFWT-FM | 102.1 |
| | KNOK-FM | 107.5 |
| | KTCU-FM | 89.1 |
| Galnesville | KGAF-FM | 94.5 |
| Harlingen | KELT | 94.5 |
| Henderson | KGRI-FM | 100.1 |
| Hereford | KPAN-FM | 106.3 |
| Highland Park-Dallas | KVIL-FM | 103.7 |
| Hillsboro | KHBR-FM | 102.3 |
| Houston | KHGM | 102.9 |
| | KHCB-FM | 105.7 |
| | KIKK-FM | 95.7 |
| | KFMK | 97.9 |
| | KODA-FM | 99.1 |
| | KLEF | 94.5 |
| | KOST | 100.3 |
| | KQUE | 102.9 |
| | KRBE | 104.1 |
| | KXYZ-FM | 96.5 |
| | KTRH-FM | 101.1 |
| | KUHF | 91.3 |
| | KBNO | 93.7 |
| Killeen | KLEN-FM | 93.3 |
| Humboldt | WIRJ-FM | 102.3 |
| Huntsville | KSAM-FM | 101.7 |
| Jacksonville | KEBE-FM | 106.5 |
| Jasper | KTXJ-FM | 102.3 |
| Lake Jackson | KLJT | 107.3 |
| Lamesa | KPET-FM | 100.3 |
| Longview | KLUE-FM | 105.7 |
| Lubbock | KSEL-FM | 93.7 |
| | KBFM | 96.3 |
| | KLBK-FM | 94.5 |
| | KTXT-FM | 91.9 |
| Marshall | KMHT-FM | 97.3 |
| McAllen | KQXX | 98.5 |
| Memphis | KMFS | 103.7 |
| Midland | KNFM | 92.3 |
| | KMOD-FM | 93.3 |
| Mt. Pleasant | KIMP-FM | 100.7 |
| Muleshoe | KMUL-FM | 103.1 |
| Nacogdoches | KSFA-FM | 92.1 |
| Odessa | KQIP | 96.7 |
| | KWMO | 99.1 |
| | KDCV | 91.3 |
| | KOYL-FM | 97.9 |
| Paris | KPLT-FM | 99.3 |
| Pasadena | KLVL-FM | 92.5 |
| Plainview | KHBL | 88.1 |
| Port Arthur | KFMP | 93.3 |
| | KPAC-FM | 98.5 |
| Robstown | KROB-FM | 99.9 |
| San Angelo | KWLW | 93.9 |
| | KSJT | 97.5 |
| San Antonio | KISS | 99.5 |
| | KBER-FM | 100.3 |
| | KEEZ | 97.3 |
| | KAKI-FM | 98.1 |
| | KITY | 92.9 |
| | KMFM | 96.1 |
| | KWFR-FM | 94.5 |
| | KCOR-FM | 101.9 |
| | KITE-FM | 104.5 |
| | KSYM | 90.3 |
| Sinton | KTOD-FM | 101.3 |
| Spearman | KBMF-FM | 98.3 |
| Temple | KYLE-FM | 104.9 |
| Texarkana | KTAL-FM | 98.1 |
| | KOSY-FM | 102.5 |
| Tyler | KZAK-FM | 93.1 |
| | KDOK-FM | 101.5 |
| Victoria | KTXN-FM | 92.1 |
| Waco | KEFC | 95.5 |
| | KWBU | 89.9 |
| Wichita Falls | KLUR | 99.9 |
| | KNTO | 95.1 |

## UTAH

| | | |
|---|---|---|
| Cedar City | KCDR-FM | 88.1 |
| Ephraim | KEPH | 88.9 |
| Logan | KUSU-FM | 91.5 |
| Ogden | KBOC | 101.9 |
| | KWCR-FM | 88.1 |
| Provo | KBYU-FM | 88.9 |
| | KFMC | 96.1 |
| Salt Lake City | KCPX-FM | 98.7 |
| | KLUB-FM | 97.1 |
| | KRSP-FM | 103.5 |
| | KSL-FM | 100.3 |
| | KSOP-FM | 104.3 |
| | KWHO-FM | 93.3 |

## VERMONT

| | | |
|---|---|---|
| Burlington | WJOY-FM | 98.5 |
| | WRUV | 90.1 |

## VIRGINIA

| | | |
|---|---|---|
| Abingdon | WBBI-FM | 92.7 |
| Arlington | WAVA-FM | 105.1 |
| | WCCV-FM | 97.5 |
| Blocksburg | WVVV | 104.9 |
| Charlottesville | WINA-FM | 95.3 |
| | WTJU | 91.3 |
| Chesapeake | WFOS | 90.5 |
| Covington | WKEY-FM | 100.9 |
| Crewe | WSVS-FM | 104.7 |
| Farmville | WFLO-FM | 95.7 |
| Fredericksburg | WFVA-FM | 101.5 |
| Gretna | WMNA-FM | 103.3 |
| Grundy | WNRG-FM | 97.7 |
| Hampton | WVEC-FM | 101.3 |
| | WHOV | 88.3 |
| Harrisonburg | WEMC | 91.7 |
| | WSVA-FM | 100.7 |
| | WLUR | 91.5 |
| Lynchburg | WWOD-FM | 100.1 |
| | WDMS-FM | 101.7 |
| 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 |
| | WCMS-FM | 100.5 |
| | WNOR-FM | 98.7 |
| | WPHO | 104.5 |
| | WRVC | 102.5 |
| | WTAR-FM | 95.7 |
| | WXRI | 105.3 |
| | WYFI-FM | 99.7 |
| Petersburg | WSSV-FM | 99.3 |
| | WSML | 95.3 |
| Portsmouth | WAVY-FM | 96.9 |
| Radford | WRAD-FM | 101.7 |
| Richmond | WTVR-FM | 98.1 |
| | WRFK | 91.1 |
| | WRVA-FM | 94.5 |
| | WRNL-FM | 102.1 |
| Roanoke | WOBJ-FM | 94.9 |

| Location | C.L. | MHz |
|---|---|---|
| | WLRJ | 92.3 |
| | WROV-FM | 103.7 |
| | WSLS-FM | 99.1 |
| South Boston | WHLF-FM | 97.5 |
| South Hill | WJWS-FM | 105.5 |
| Staunton | WSGM-FM | 93.5 |
| Suffolk | WXYW | 92.9 |
| Tappahannock | WRAR-FM | 105.5 |
| Warrenton | WEER-FM | 107.7 |
| Warsaw | WNNT-FM | 100.9 |
| Williamsburg | WCWM | 89.1 |
| | WRCI | 96.5 |
| Winchester | WRFL | 92.5 |
| | WEFG | 102.5 |
| Woodbridge | WXRA | 105.9 |
| Yorktown | WYCS | 91.5 |

## WASHINGTON

| | | |
|---|---|---|
| Aberdeen | WDUX-FM | 104.7 |
| Bellevue | KFKF-FM | 92.5 |
| Bellingham | KGMI-FM | 92.9 |
| | KERI | 104.3 |
| Bremerton | KBRO-FM | 106.9 |
| Centralia | KGME-FM | 102.9 |
| Cheney | KEWC-FM | 89.1 |
| College Place | KGTS | 91.3 |
| Edmunds | KGFM | 105.3 |
| Ellensburg | KCWS-FM | 91.5 |
| Eugene | KBMC | 104.5 |
| Hoquiam | KGHO-FM | 103.9 |
| Lynden | KLYN-FM | 106.5 |
| Opportunity | KZUN-FM | 96.1 |
| Prosser | KACA | 101.7 |
| Pullman | KPUL-FM | 104.9 |
| Richland | KCYS | 102.7 |
| Seattle | KING-FM | 98.1 |
| | KBBX | 98.9 |
| | KBLE-FM | 93.3 |
| | KETO-FM | 101.5 |
| | KIRO-FM | 100.7 |
| | KISW | 99.9 |
| | KLSN | 96.5 |
| | KOL-FM | 94.1 |
| | KRAB | 107.7 |
| | KTW-FM | 102.5 |
| | KUOW | 94.9 |
| | KIXI-FM | 95.7 |
| Spokane | KREM-FM | 92.9 |
| | KDNC-FM | 93.7 |
| | KTWD | 105.7 |
| | KXLY-FM | 99.9 |
| | KHQ-FM | 98.1 |
| | KUDY-FM | 98.9 |
| Tacoma | KCPS | 90.9 |
| | KLAY-FM | 106.1 |
| | KPLU | 88.5 |
| | KTNT-FM | 97.3 |
| | KTOY | 91.7 |
| | KTAC-FM | 103.9 |
| Wenatchee | KPQ-FM | 102.1 |
| Yakima | KNDX | 104.1 |

## WEST VIRGINIA

| | | |
|---|---|---|
| Beckley | WBKW | 99.5 |
| Berkeley Springs | WSCF-FM | 93.5 |
| Bethany | WVBC | 88.1 |
| Bluefield | WHIS-FM | 104.5 |
| Charleston | WKAZ-FM | 97.5 |
| | WCHS-FM | 96.1 |
| | WKNA | 98.5 |
| | WTIO | 102.7 |
| | WVAF | 99.9 |
| Charlestown | WZFM | 98.3 |
| Huntington | WKEE-FM | 100.5 |
| | WMUL | 88.1 |
| | WVQM | 103.3 |
| Martinsburg | WEPM-FM | 97.5 |
| Morgantown | WAJR-FM | 101.9 |
| Norfolk | WCMS-FM | 100.5 |
| Oak Hill | WOAY-FM | 94.1 |
| Parkersburg | WTAP-FM | 103.1 |
| | WCEF-FM | 99.3 |
| St. Albans | WKLC-FM | 105.1 |
| Welch | WOVE | 106.3 |
| Wheeling | WKWK-FM | 97.3 |
| | WWVA-FM | 98.7 |
| | WTRF-FM | 107.5 |

## WISCONSIN

| | | |
|---|---|---|
| Appleton | WLFM | 91.1 |
| | WAPL-FM | 105.7 |
| Beloit | WBCR-FM | 88.1 |
| Chilton | WHKW | 89.3 |
| Colfax | WHWC | 88.3 |
| Delafield | WHAD | 90.7 |
| Eau Claire | WIAL | 94.1 |
| | WEAU-FM | 104.5 |
| Fond du Lac | WFON | 107.1 |
| Fort Atkinson | WFAW | 107.3 |
| Green Bay | WBAY-FM | 101.1 |
| | WDUZ-FM | 94.5 |
| Greenfield Twp. | WWCF | 94.9 |
| Highland | WHHI | 91.3 |
| Highland Twp. | WHSA | 89.9 |
| Janesville | WCLO-FM | 99.9 |
| Kenosha | WLIP | 95.1 |
| La Crosse | WHLA | 90.3 |
| | WWLA | 93.3 |
| Madison | WHA-FM | 88.7 |
| | WIBA-FM | 101.5 |
| | WISM-FM | 98.1 |
| | WMFM | 104.1(s) |
| | WRVB-FM | 102.5 |
| Manitowoc | WKUB | 92.1 |
| Marinette | WHMD | 91.5 |
| Marshfield | WDLB-FM | 106.5 |
| | WHRM | 91.9 |
| Menomonee | WZMF | 98.3 |
| | WDMW | 92.1 |
| Merrill | WLIN | 100.7 |
| Milwaukee | WFMR | 96.5 |
| | WMIL-FM | 95.7 |
| | WISN-FM | 97.3 |
| | WRIT-FM | 102.9 |
| | WAWA-FM | 102.1 |
| | WQFM | 93.3 |
| | WTMJ | 94.5 |
| | WBON | 107.7 |
| | WEMP-FM | 99.1 |
| | WUWM | 89.7 |
| Monroe | WEKZ-FM | 93.7 |
| Mt. Horeb | WFMK | 92.3 |
| Neenah-Menasha | | |
| | WNAM-FM | 99.3 |
| Neillsville | WCCN-FM | 107.5 |
| New London | WLIH-FM | 93.5 |
| Oshkosh | WMKC | 96.7 |
| | WRST-FM | 88.1 |
| | WOSH-FM | 103.9 |
| Platteville | WSUP | 90.5 |
| | WSWW-FM | 99.3 |
| Portage | WPDR-FM | 100.1 |
| Port Washington | | |
| | WGLB-FM | 100.1 |
| Racine | WRJN-FM | 100.7 |
| | WFNY | 92.1 |
| Rhinelander | WOBT-FM | 107.9 |
| Rice Lake | WJMC-FM | 96.3 |
| Richland Center | WRCO-FM | 100.9 |
| Ripon | WCWC-FM | 95.9 |
| River Falls | WRVF | 106.3 |
| Sauk City | WVLR | 96.7 |
| Shawano | WTCH-FM | 100.1 |
| Sparta | WCOW-FM | 97.1 |
| Stevens Point | WSPT-FM | 97.9 |
| Sturgeon Bay | WDOR-FM | 95.9 |
| Superior | WWJC-FM | 105.1 |
| | WSSU | 91.3 |
| Tomah | WTMB-FM | 98.9 |
| Two Rivers | WTRW-FM | 102.3 |
| Watertown | WTTN-FM | 104.7 |
| Waukesha | WAUK-FM | 106.1 |
| Waupaca | WDUX-FM | 92.7 |
| Wausau | WHRM | 91.9 |
| | WRIG-FM | 101.9 |
| | WSAU-FM | 95.5 |
| Wauwatosa | WTOS | 103.7 |
| West Bend | WBKV-FM | 92.5 |
| Whitewater | WSUW | 91.7 |
| Wisc. Rapids | WFHR-FM | 103.3 |

## WYOMING

| | | |
|---|---|---|
| Casper | KATI-FM | 94.5 |
| Cheyenne | KVWO-FM | 106.3 |
| Laramie | KUWR | 91.5 |

## GUAM

| | | |
|---|---|---|
| Agana | KUAM-FM | 93.9 |

## PUERTO RICO

| | | |
|---|---|---|
| Arecibo | WCMN-FM | 107.3 |
| | WNIK-FM | 107.3 |
| Aguadilla | WABA-FM | 100.3 |
| Bayamon | WRSJ-FM | 100.7 |
| Caguas | WVJP-FM | 103.3 |
| Carolina | WVOZ-FM | 107.7 |
| Corozal | WORO | 92.5 |
| Fajardo | WMDD-FM | 96.5 |
| Guayama | WXRF-FM | 96.5 |
| Mayaguez | WKJB-FM | 99.1 |
| | WORA-FM | 97.5 |
| | WOYE-FM | 94.1 |
| Ponce | WLEO-FM | 101.9 |
| | WPAB-FM | 93.3 |
| San Juan | WIPR-FM | 91.3 |
| | WIAC-FM | 102.3 |
| | WITA-FM | 107.7 |
| | WOLA | 105.7 |

## VIRGIN ISLANDS

| | | |
|---|---|---|
| St. Croix, Christiansted | WIVI-FM | 99.5 |
| Christiansted, St. Croix | WIVI-FM | 99.5 |

# Canadian AM Stations by Location

| Location | C.L. | kHz |
|---|---|---|
| Abbotsford, B.C. | CFVR | 1240 |
| Alma, Que. | CFGT | 1270 |
| Altona, Man. | CFAM | 1290 |
| Amherst, N.S. | CKDH | 900 |
| Amos, Que. | CHAD | 1340 |
| Antigonish, N.S. | CJFX | 580 |
| Barrie, Ont. | CKBB | 950 |
| Bathurst, N.B. | CKBC | 1360 |
| Belleville, Ont. | CJBQ | 800 |
| Blind River, Ont. | CJNR | 730 |
| Brampton, Ont. | CHIC | 790 |
| Brandon, Man. | CKX | 1150 |
| Brantford, Ont. | CKPC | 1380 |
| Bridgewater, N.S. | CKBW | 1000 |
| Brockville, Ont. | CFJR | 1450 |
| Burns Lake, B.C. | CFLD | 1400 |
| Cabano, Que. | CJAF | 1240 |
| Calgary, Alta. | CBR | 1010 |
| | CFAC | 960 |
| | CFCN | 1060 |
| | CHQR | 810 |
| | CKXL | 1140 |
| Callander, Ont. | CFCH | 600 |
| Cambell River, B.C. | CFWB | 1490 |
| Campbellton, N.B. | CKNB | 950 |
| Camrose, Alta. | CFCW | 790 |
| Causapscal, Que. | CJBM | 1450 |
| Charlottetown, P.E.I. | CFCY | 630 |
| Chatham, Ont. | CFCO | 630 |
| Chicoutimi, Que. | CBJ | 1580 |
| | CJMT | 1420 |
| Chilliwack, B.C. | CHWK | 1270 |
| Churchill, Man. | CHFC | 1230 |
| Cobourg, Ont. | CHUC | 1450 |
| Collingwood, Ont. | CKCB | 1400 |
| Corner Brook, Nfld. | CBY | 990 |
| | CFCB | 570 |
| Cornwall, Ont. | CFML | 1110 |
| | CJSS | 1220 |
| Courtenay, B.C. | CFCP | 1440 |
| Cranbrook, B.C. | CKEK | 570 |
| Dartmouth, N.S. | CFDR | 790 |
| Dauphin, Man. | CKDM | 730 |
| Dawson Creek, B.C. | CJDC | 1350 |
| Dolbeau, Que. | CHVD | 1230 |
| Drumheller, Alta. | CJDV | 910 |
| Drummondville, Que. | CHRD | 1480 |
| Dryden, Ont. | CKDR | 900 |
| Duncan, B.C. | CKAY | 1500 |
| Edmonton, Alta. | CBX | 740 |
| | CFRN | 1260 |
| | CHED | 630 |
| | CHFA | 680 |
| | CHQT | 1110 |
| | CJCA | 930 |
| | CKUA | 580 |
| Edmundston, N.B. | CJEM | 570 |
| Estevan, Sask. | CJSL | 1280 |
| Flin Flon, Man. | CFAR | 590 |
| Fort Frances, Ont. | CFOB | 800 |
| Fort Simpson, N.W.T. | | |
| | CFMR | 1490 |
| Fort St. John, B.C. | CKNL | 560 |
| Fort William, Ont. | CJLX | 800 |
| Fredericton, N.B. | CBZ | 970 |
| | CFNB | 550 |
| Galt, Ont. | CFTJ | 1110 |
| Gander, Nfld. | CBG | 1450 |
| Goose Bay, Nfld. | CFGB | 1340 |
| Granby, Que. | CHEF | 1450 |
| Grande Prairie, Alta. | CFGP | 1050 |
| Grand Bank, Nfld. | CJDX | 710 |
| Grand Falls, Nfld. | CBT | 540 |
| | CKCM | 620 |
| | CJCN | 680 |
| Gravelbourg, Sask. | CFRG | 710 |
| | CFGR | 1230 |
| Guelph, Ont. | CJOY | 1460 |
| Halifax, N.S. | CBH | 860 |
| | CHNS | 960 |
| | CJCH | 920 |
| Hamilton, Ont. | CHML | 900 |
| | CKOC | 1150 |
| | CHIO | 1280 |
| Hauterive, Que. | CHLC | 580 |
| Huntsville, Ont. | CKAR | 630 |
| Hull, Que. | CKCH | 970 |
| Inuvik, N.W.T. | CHAK | 860 |
| Joliette, Que. | CJLM | 1350 |
| Jonquiere, Que. | CKRS | 590 |
| Kamloops, B.C. | CFJC | 910 |
| Kapuskasing, Ont. | CFLK | 1230 |
| | CKAP | 580 |
| Kelowna, B.C. | CKOV | 630 |
| Kenora, Ont. | CJRL | 1220 |
| Kentville, N.S. | CKEN | 1350 |
| Kingston, Ont. | CFRC | 1490 |
| | CKLC | 1380 |
| | CKWS | 960 |
| Kirkland Lake, Ont. | CJKL | 560 |
| Kitchener, Ont. | CHYM | 1490 |
| | CKKW | 1320 |
| Kitimat, B.C. | CKTK | 1230 |
| Langley, B.C. | CJJC | 850 |
| La Pocatiere, Que. | CHGB | 1310 |
| La Sarre, Que. | CKLS | 1240 |
| La Tuque, Que. | CFLM | 1240 |
| Leamington, Ont. | CJSP | 710 |
| Lethbridge, Alta. | CHEC | 1090 |
| | CJOC | 1220 |
| Lindsay, Ont. | CKLY | 910 |
| Lloydminster, Alta. | CKSA | 1080 |
| London, Ont. | CFPL | 980 |
| | CJOE | 1290 |
| | CKSL | 1410 |
| Marystown, Nfld. | CHCM | 560 |
| Matane, Que. | CKBL | 1250 |
| Medicine Hat, Alta. | CHAT | 1270 |
| Melfort, Sask. | CJVR | 1420 |
| Middleton, N.S. | CKAD | 1490 |
| Midland, Ont. | CKMP | 1230 |
| Moncton, N.B. | CBAF | 1300 |
| | CKCW | 1220 |
| Mont Laurier, Que. | CKML | 610 |
| Montmagny, Que. | CKBM | 1490 |
| Montreal, Que. | CBF | 690 |
| | CBM | 940 |
| | CFCF | 600 |
| | CFMB | 1410 |
| | CJAD | 800 |
| | CJMS | 1280 |
| | CKAC | 730 |
| | CKLM | 1570 |
| | CKGM | 980 |
| Moose Jaw, Sask. | CHAB | 800 |
| Nanaimo, B.C. | CHUB | 1570 |
| Nelson, B.C. | CKLN | 1390 |
| New Carlisle, Que. | CHNC | 610 |
| Newcastle, N.B. | CKMR | 790 |
| New Glasgow, N.S. | CKEC | 1320 |
| New Westminster, B.C. | | |
| | CKNW | 980 |
| Niagara Falls, Ont. | CJRN | 1600 |
| North Battleford, Sask. | | |
| | CJNB | 1050 |
| North Vancouver, B.C. | | |
| | CKLG | 730 |
| Oakville, Ont. | CHWO | 1250 |
| Orillia, Ont. | CFOR | 1570 |
| Oshawa, Ont. | CKLB | 1350 |
| Osoyoos, B.C. | CKOO | 1240 |
| Ottawa, Ont. | CBO | 910 |
| | CBOF | 1250 |
| | CFRA | 580 |
| | CKOY | 1310 |
| | CKPM | 1440 |
| Owen Sound, Ont. | CFOS | 560 |
| Parry Sound, Ont. | CKAR-1 | 1340 |
| Peace River, Alta. | CKYL | 610 |
| Pembroke, Ont. | CHOV | 1350 |
| Penticton, B.C. | CKOK | 800 |
| Peterborough, Ont. | CHEX | 980 |
| | CKPT | 1420 |
| Pointe Claire, Que. | CFOX | 1470 |
| Portage La Prairie, Man. | | |
| | CFRY | 920 |
| Port Alberni, B.C. | CJAV | 1240 |
| Port Arthur, Ont. | CFPA | 1230 |
| | CKPR | 580 |
| Prince Albert, Sask. | CKBI | 900 |
| Prince George, B.C. | CKPG | 550 |
| Prince Rupert, B.C. | CFPR | 860 |
| | CHTK | 560 |
| Quebec, Que. | CBV | 980 |
| | CFOM | 1340 |
| | CHRC | 800 |
| | CJLR | 1060 |
| | CKCV | 1280 |
| Quesnel, B.C. | CKCQ | 570 |
| Red Deer, Alta. | CKRD | 850 |
| Regina, Sask. | CBK | 540 |
| | CJME | 1300 |
| | CKCK | 620 |
| | CKRM | 980 |
| Revelstoke, B.C. | CKCR | 1340 |
| Richmond Hill, Ont. | CFGM | 1310 |
| Rimouski, Que. | CJBR | 900 |
| Rivière du Loup, Que. | CJFP | 1400 |
| Roberval, Que. | CHRL | 910 |
| Rosetown, Sask. | CKKR | 1330 |
| Rouyn, Que. | CKRN | 1400 |
| St. Boniface, Man. | CKSB | 1050 |
| St. Catharines, Ont. | CHSC | 1220 |
| | CKTB | 610 |
| St. Hyacinthe, Que. | CKBS | 1240 |
| St. Jean, Que. | CHRS | 1090 |
| St. Jerome, Que. | CKJL | 900 |
| Saint John, N.B. | CBD | 1110 |
| | CFBC | 930 |
| | CHSJ | 1150 |
| St. John's Nfld. | CBN | 640 |
| | CJON | 930 |
| | VOAR | 1230 |
| | VOCM | 590 |

| Location | C.L. | kHz |
|---|---|---|
| | VOWR | 800 |
| St. Thomas, Ont. | CHLO | 680 |
| Sackville, N.B. | CBA | 1070 |
| Salmon Arm, B.C. | CKXR | 580 |
| Sarnia, Ont. | CHOK | 1070 |
| Saskatoon, Sask. | CFNS | 1170 |
| | CFQC | 600 |
| | CKOM | 1250 |
| Sault Ste. Marie, Ont. | CJIC | 1050 |
| | CKCY | 920 |
| Schefferville, Que. | CBDR | 1230 |
| Sept-Iles, Que. | CKCN | 560 |
| Shaunavon, Sask. | CJSN | 1490 |
| Shawinigan, Que. | CKSM | 1220 |
| Sherbrooke, Que. | CHLT | 630 |
| | CKTS | 900 |
| Simcoe, Ont. | CFRS | 1560 |
| Smiths Falls, Ont. | CJET | 630 |
| Smithers, B.C. | CFBV | 1230 |
| Sorel, Que. | CJSO | 1320 |
| Stratford, Ont. | CJCS | 1240 |
| Steinbach, Man. | CHSM | 1250 |
| Stephenville, Nfld. | CFSX | 910 |
| Sudbury, Ont. | CFBR | 550 |
| | CHNO | 900 |
| | CKSO | 790 |
| Summerside, P.E.I. | CJRW | 1240 |
| Swift Current, Sask. | CKSW | 1400 |
| Sydney, N.S. | CBI | 1140 |
| | CHER | 950 |
| | CJCB | 1270 |
| Terrace, B.C. | CFTK | 590 |
| Thetford Mines, Que. | CKLD | 1230 |
| Thompson, Man. | CHTM | 610 |
| Trois-Rivières, Que. | CHLN | 550 |
| | CKTR | 1150 |
| Tillsonburg, Ont. | CKOT | 1510 |
| Timmins, Ont. | CFCL | 620 |
| | CKGB | 680 |
| Toronto, Ont. | CBL | 740 |
| | CFRB | 1010 |
| | CHFI | 680 |
| | CHIN | 1540 |
| | CHUM | 1050 |
| | CJBC | 860 |
| | CKEY | 590 |
| | CKFH | 1430 |
| Trail, B.C. | CJAT | 610 |
| Truro, N.S. | CKCL | 600 |
| Val d'Or, Que. | CKVD | 900 |
| Valleyfield, Que. | CFLV | 1370 |
| Vancouver, B.C. | CBU | 690 |
| | CFUN | 1410 |
| | CHQM | 1320 |
| | CJOR | 600 |
| | CKLG | 730 |
| | CKWX | 1130 |
| Verdun, Que. | CKVL | 850 |
| Vernon, B.C. | CJIB | 940 |
| Victoria, B.C. | CFAX | 1070 |
| | CJVI | 900 |
| | CKDA | 1220 |
| Victoriaville, Que. | CFDA | 1380 |
| Ville Marie, Que. | CKVM | 710 |
| Ville St. Georges, Que. | | |
| | CKRB | 1460 |
| Wawa, Ont. | CJWA | 1240 |
| Welland, Ont. | CHOW | 1470 |
| Weyburn, Sask. | CFSL | 1340 |
| Whitehorse, Y.T. | CFWH | 570 |
| Williams Lake, B.C. | CKWL | 1240 |
| Windsor, N.S. | CFAB | 1450 |
| Windsor, Ont. | CBE | 1550 |
| | CKLW | 800 |
| | CKWW | 580 |
| Wingham, Ont. | CKNX | 920 |
| Winnipeg, Man. | CBW | 990 |
| | CFRW | 1470 |
| | CJOB | 680 |
| | CKRC | 630 |
| | CKY | 580 |
| Woodstock, N.B. | CJCJ | 920 |
| Woodstock, Ont. | CKOX | 1340 |
| Yarmouth, N.S. | CJLS | 1340 |
| Yellowknife, N.W.T. | CFYK | 1340 |
| Yorkton, Sask. | CJGX | 940 |

## Canadian FM Stations by Location

| Location | C.L. | MHz |
|---|---|---|
| Belleville, Ont. | CJBQ-FM | 97.1 |
| Brampton, Ont. | CHIC-FM | 102.1 |
| Brandon, Man. | CKX-FM | 96.1 |
| Brantford, Ont. | CKPC-FM | 92.1 |
| Calgary, Alta. | CHFM-FM | 95.9 |
| Clearwater, B.C. | CFFM-FM-2 | 92.7 |
| Clinton, B.C. | CFFM-FM-4 | 106.5 |
| Cornwall, Ont. | CJSS-FM | 104.5 |
| Edmonton, Alta. | CFRN-FM | 100.3 |
| | CJCA-FM | 99.5 |
| | CKUA-FM | 98.1 |
| Halifax, N.S. | CHNS-FM | 96.1 |
| Hamilton, Ont. | CHML-FM | 95.3 |
| Kamloops, B.C. | CFFM-FM | 98.3 |
| Kelowna, B.C. | CJOV-FM | 104.7 |
| Kentville, N.S. | CKWM-FM | 97.7 |
| Kingston, Ont. | CFRC-FM | 91.9 |
| | CKLC-FM | 98.3 |
| | CKWS-FM | 96.3 |
| Kitchener, Ont. | CHYM-FM | 96.7 |
| La Pocatiere, Que. | CHGB-FM | 102.9 |
| Lethbridge, Alta. | CHEC-FM | 100.9 |
| London, Ont. | CFPL-FM | 95.9 |
| Merritt, B.C. | CFFM-FM-3 | 103.9 |
| Montreal, Que. | CBF-FM | 95.1 |
| | CBM-FM | 100.7 |
| | CFQR-FM | 92.5 |
| | CJFM-FM | 95.9 |
| | CJMS-FM | 94.3 |
| | CKGM-FM | 97.7 |
| Mount Timothy, B.C. | CFFM-FM-5 | 99.7 |
| North Bay, Ont. | CKAT-FM | 93.7 |
| Oshawa, Ont. | CKQS-FM | 94.9 |
| Ottawa, Ont. | CBO-FM | 103.3 |
| | CFMO-FM | 93.9 |
| Penticton, B.C. | CKOK-FM | 97.1 |
| Port Arthur, Ont. | CKPR-FM | 94.3 |
| Quebec, Que. | CHRC-FM | 98.1 |
| Red Deer, Alta. | CKRD-FM | 98.9 |
| Regina, Sask. | CFMQ-FM | 92.1 |
| Rimouski, Que. | CJBR-FM | 101.5 |
| Saint John, N.B. | CFBC-FM | 98.9 |
| Saskatoon, Sask. | CFMC-FM | 103.9 |
| | CJUS-FM | 89.7 |
| Sault Ste. Marie, Ont. | CJIC-FM | 100.5 |
| | CKCY-FM | 104.3 |
| Savona, B.C. | CFFM-FM-1 | 101.9 |
| Sherbrooke, Que. | CHLT-FM | 102.7 |
| St. Catharines, Ont. | CHSC-FM | 105.7 |
| | CKTB-FM | 97.7 |
| Sudbury, Ont. | CKSO-FM | 92.7 |
| Sydney, N.S. | CJCB-FM | 94.9 |
| Tillsonburg, Ont. | CKOT-FM | 100.5 |
| Timmins, Ont. | CKGB-FM | 94.5 |
| Toronto, Ont. | CBC-FM | 94.1 |
| | CHFI-FM | 98.1 |
| | CHUM-FM | 104.5 |
| | CJRT-FM | 91.1 |
| | CKFM-FM | 99.9 |
| Truro, N.S. | CKCL-FM | 100.9 |
| Vancouver, B.C. | CBU-FM | 105.7 |
| | CHQM-FM | 103.5 |
| | CKGL-FM | 99.3 |
| Verdun, Que. | CKVL-FM | 96.9 |
| Victoria, B.C. | CFMS-FM | 98.5 |
| Windsor, Ont. | CKLW-FM | 93.9 |
| Winnipeg, Man. | CBW-FM | 98.3 |
| | CFRW-FM | 94.3 |
| | CJOB-FM | 97.5 |
| | CKY-FM | 92.1 |

## World-Wide Shortwave Stations

■ Here's your chance to measure your DX skill and the worth of your DXing equipment/installation. It's our now-regular contest without prizes (isn't that novel?); just a bit of fun with some challenge thrown in for spice.

Take a whack at the following items and then grade yourself, following the instructions at the end.

**1.** Think you can dig one out from under a jamming transmitter? If so, try for the *Voice of The U.N. Command* on Okinawa. They've been reported as heavily jammed on 9840 and 13820 kHz during transmissions at 1315 and 1515 GMT.

**2.** Second harmonics are definitely "in" during this current period of high sunspot activity. It is actually possible to tune around the 10-meter ham band and hear *harmonics* from stations throughout the world. Among those recently reported were Havana on 28575 kHz, other stations on frequencies between 28100 and 30300 kHz. How many can you log?

**3.** Want to see some more of Samoa? Most DXers would, as Samoa is pretty hard to come by on the shortwave bands. Have no fear, we've located a station for you—utility station KUQ20 on 15625 kHz which has been heard calling Oakland (Calif.) at about 1855 GMT.

**4.** Want to hear the war news before it appears on local TV or shows up in your Daily Blah? Here's a chance to hear newscasters in Saigon radioing in their stories direct from Saigon. Listen on 19081 kHz around 0150 GMT.

**5.** Big mystery on the shortwave bands, it involves Radio Ankara in Turkey. Seems that about 15 minutes after their 2200 GMT English transmission opens up on 15160 kHz, someone throws a carrier on and swamps them right under. Can you hear this one?

**6.** Can you hear the new shortwave broadcaster on 9580 kHz in Puerto Cabezas, Nicaragua? Look for them around 1530 to 2300 GMT.

**7.** Calling all secret radio station buffs. Watch for the clandestine *Voice of The People of Thailand*, 9425 kHz, 1430 to 1600 GMT. Their ID consists of a series of high pitched gongs.

**8.** How many U.S. Coast Guard stations (ship and shore) can you log in 15 minutes? Look for them on frequencies between 2600 and 2800 kHz; evenings give the best DX, but weekends usually show the most activity.

**9.** Ever hear a utility station broadcasting the news? Look on 8000 kHz around 1330 GMT and see if you can catch VSI35 located on Grand Turk Island in the Bahamas. They send out a news bulletin for local boats and the outlying islands.

**10.** Spanish Guinea isn't reported very often, but you might be able to snag this country on shortwave by trying for station EAJ206, *Radio Santa Isabel*, 6250 kHz, heard around 2130 GMT.

Scoring: 10 points for all questions, except No. 2 and No. 8. Questions 2 and 8 score 1 point for each station heard. If you get less than 20 points, you've got a long way to go; less than 51, put up a better antenna or get a better receiver; 51 to 60, you show promise; 61 to 81, you can be proud of yourself; 82 to 90, you are probably better than most DXers around today; 91 and above—you've got to be kidding!

**Write!** We invite readers to send loggings for inclusion in these listings. Be sure to include the following information for each station reported: approximate frequency, callsign and/or station name, and time monitored in Greenwich Mean Time (24 hour clock). Address your reports to DX Central, White's Radio Log, RADIO-TV EXPERIMENTER, 505 Park Avenue, New York, N. Y. 10022, U.S.A.

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| kHz | Call | Name | Location | GMT |
|---|---|---|---|---|
| **90-Meter Band—3200-3400 kHz** | | | | |
| 3230 | VRH8 | Fiji BC | Suva, Fiji Is. | 0700 |
| 3241 | | R. Abidjan | Abidjan, Ivory Coast | 2430 |
| 3255 | ELBC | R. Village | Monrovia, Liberia | 0000 |
| | YVQL | V. del Tigre | Tigre, Venez. | 0200 |
| 3265 | ZFY | R. Demerara | Georgetown, Guyana | 0245 |
| 3280 | — | Windward I. BC | St. Georges, Grenada | 0200 |
| 3295 | — | Brit. Hond. BC | Belize, Brit. Hond. | 0000 |
| 3305 | YVKX | V. de la Patria | Caracas, Venez. | 0125 |
| 3380 | TGCH | R. Shortis | Socotan, Guat. | 0500 |
| **60-Meter Band—4750-5060 kHz** | | | | |
| 4770 | YVNW | R. Bolivar | Bolivar, Venez. | 0255 |
| 4780 | — | R. Mali | Bamako, Mali | 0600 |
| 4810 | — | R. RSA | Paradys, S. Afr. | 0430 |
| | YVMG | R. Popular | Maracaibo, Venez. | 2320 |
| 4820 | XEJG | Casa Cultura | Guadalajara, Mex. | 0215 |
| 4860 | YVQE | R. Maracaibo | Maracaibo, Venez. | 0300 |
| 4865 | CSA97 | E. Regional | Ponta Delgada, Azores | 2145 |
| 4870 | YVKP | R. Tropical | Caracas, Venez. | 0259 |
| 4890 | — | Ici Dakar | Dakar, Senegal | 0650 |
| 4910 | HIN | R. HIN | Sto. Domingo, Dom. Rep. | 0500 |
| 4972 | — | R. Yaounde | Yaounde, Cameroon | 2230 |
| 4985 | CP75 | Cruz del Sur | LaPaz, Bolivia | 0235 |
| 4990 | YVMQ | R. Barquismeto | Barquismeto, Venez. | 2030 |
| 5015 | — | Windward I. BC | St. Georges, Grenada | 2215 |
| 5020 | HJFW | Tras. Caldas | Manizales, Colombia | 0455 |
| 5025 | — | R. Uganda | Kampala, Uganda | 2035 |
| 5040 | XZK42 | Burmese BC | Rangoon, Burma | 1200 |
| 5052 | — | R. Singapura | Singapore | 1230 |
| 5875 | HRNL | V. de Hond. | Tegucigalpa, Honduras | 2350 |
| 5902 | — | R. Budapest | Budapest, Hungary | 1945 |
| 5930 | — | R. Prague | Prague, Czech. | 0100 |
| 5940 | — | R. Magadan | Magadan, USSR | 0655 |
| **49-Meter Band—5950-6200 kHz** | | | | |
| 5950 | — | R. Warsaw | Warsaw, Poland | 2230 |
| 5955 | — | R. Berlin Int'l. | Berlin, E. Germany | 0450 |
| 5960 | HJCF | V. de Bogota | Bogota, Colombia | 0710 |
| 5965 | — | Swiss BC | Berne, Switz. | 0221 |
| 5970 | — | R. Algers | Algers, Algeria | 0645 |
| | — | R. Canada | Montreal, Que. | 0110 |
| | HJVN | R. Horizonte | Bogota, Colombia | 0000 |
| 5985 | — | R. Nacional | Lisbon, Portugal | 0300 |
| 5990 | — | R. Sweden | Stockholm, Sweden | 0100 |
| 5995 | — | R. Andorra | Andorra | 0615 |
| | HRPI | E. de Honduras | Tegucigalpa, Hond. | 0130 |
| 6000 | PRK5 | Saudi Arabian BC | Riyadh, Saudi Arabia | 2107 |
| 6005 | — | RIAS | Munich, W. Germ. | 0340 |
| | CFCX | CFCX | Montreal, Que. | 0115 |
| 6010 | — | R. Roma | Rome, Italy | 0120 |
| | XEOI | R. Mil | Mexico City, Mex. | 0750 |
| 6025 | — | R. Nacional | Lisbon, Portugal | 0200 |
| 6035 | — | R. Monte Carlo | Monte Carlo, Monaco | 0500 |
| 6050 | HCJB | V. Andes | Quito, Ecuador | 0955 |
| 6065 | XEXG | R. Mex. | Leon, Mex. | 0028 |
| 6070 | CFRX | CFRX | Toronto, Ont. | 0730 |
| 6075 | DMQ6 | Deutsche Welle | Cologne, W. Germ. | 0130 |
| 6090 | VLI6 | R. Australia | Sydney, Australia | 0800 |
| | — | RTV Dominicana | Sto. Domingo, Dom. Rep. | 2300 |
| | — | RTV | Kaduna, Nigeria | 0605 |

WHITE'S

# RADIO LOG

| kHz | Call | Name | Location | GMT |
|---|---|---|---|---|
| 6095 | ZYB7 | R. Sao Paulo | Sao Paulo, Brazil | 0930 |
| 6100 | DMQ6 | Deutsche Welle | Cologne, W. Germany | 0000 |
| 6105 | — | R. Free Europe | Lisbon, Port. | 0530 |
| 6110 | — | BBC | London, England | 0630 |
| | — | R. Moscow | Moscow, USSR | 0330 |
| 6130 | CHNX | CHNX | Halifax, N.S. | 0730 |
| 6135 | — | R. Habana | Havana, Cuba | 0345 |
| 6145 | — | R. Vatican | Vatican City | 0050 |
| 6155 | — | Far East Net. | Tokyo, Japan | 0800 |
| 6160 | CKZU | CKZU | Vancouver, B.C. | 0800 |
| | HJKJ | R. Nuevo Grande | Bogota, Colombia | 0120 |
| 6170 | — | R. Habana | Havana, Cuba | 0300 |
| 6175 | — | V. of Malaysia | Kuala Lumpur, Malaysia | 1200 |
| 6180 | TGWB | V. de Guatemala | Guatemala City, Guat. | 0240 |
| 6185 | — | R. Portugal | Lisbon, Port. | 0200 |
| 6195 | — | R. Tunis | Tunis, Tunisia | 2300 |
| | — | BBC | London, England | 0400 |
| 6540 | — | R. Pyongyang | Pyongyang, N. Korea | 0845 |

## 41-Meter Band—7100-7300 kHz

| | | | | |
|---|---|---|---|---|
| 7135 | — | R. Monte Carlo | Monte Carlo, Monaco | 0500 |
| 7140 | — | BBC Relay | Cyprus | 0300 |
| 7220 | — | R. Budapest | Budapest, Hungary | 0430 |
| 7245 | — | Vienese BC | Vienna, Austria | 0600 |
| 7265 | — | R. Tirana | Tirana, Albania | 0000 |
| 7270 | — | R. RSA | Paradys, S. Africa | 0400 |
| 7345 | — | R. Prague | Prague, Czech. | 0145 |
| 7350 | — | R. Peking | Peking, China | 2235 |
| 8000 | VS135 | — | Grand Turk I. | 1330 |
| 9297 | — | R. Libertad | (Clandestine) | 0130 |
| 9360 | — | E. Nacional | Madrid, Spain | 0405 |

## 31-Meter Band—9500-9775 kHz

| | | | | |
|---|---|---|---|---|
| 9505 | — | R. Sto. Domingo | Santo Domingo, Dom. Rep. | 0110 |
| 9510 | — | R. Bucharest | Bucharest, Rumania | 0430 |
| 9520 | VLT9 | Australian BC | Port Moresby, New Guinea | 0715 |
| 9540 | ZL2 | R. New Zealand | Wellington, N.Z. | 0700 |
| 9555 | YSS | R. Nacional | San Salvador, El Salvador | 0430 |
| 9560 | — | R. Sofia | Sofia, Bulgaria | 2150 |
| 9575 | — | R. Roma | Rome, Italy | 2230 |
| 9590 | — | R. Moscow | Moscow, USSR | 0500 |
| 9600 | — | R. Tashkent | Tashkent, USSR | 1215 |
| 9610 | VLW | Australian BC | Perth, Australia | 1500 |
| 9615 | WNYW | R. New York WW | New York, N.Y. | 0300 |
| 9625 | — | Kol Yisrael | Jerusalem, Israel | 2120 |
| 9630 | — | R. Rome | Rome, Italy | 0100 |
| 9635 | — | V. Free Korea | Seoul, S. Korea | 0825 |
| 9645 | — | Vatican R. | Vatican City | 0050 |
| 9645 | — | R. Norway | Oslo, Norway | 0300 |
| 9650 | — | R. Berlin Int'l. | Berlin, E. Germany | 0505 |
| 9655 | — | Swiss BC | Berne, Switz. | 0500 |
| 9665 | — | R. Kiev | Kiev, USSR | 0440 |
| 9700 | CL970 | V. de Chile | Santiago, Chile | 0245 |
| | — | R. Sofia | Sofia, Bulgaria | 2300 |
| 9715 | — | R. Nederland | Hilversum, Netherlands | 0030 |
| 9735 | DMQ9 | Deutsche Welle | Cologne, W. Germany | 0130 |
| 9740 | — | R. Vilnus | Vilnus, Lithuanian SSR | 2245 |
| | — | R. Pakistan | Karachi, Pakistan | 2000 |
| 9745 | TAP | R. Ankara | Ankara, Turkey | 0430 |
| | HCJB | V. of Andes | Quito, Ecuador | 0345 |
| 9760 | — | R. Hanoi | Hanoi, N. Vietnam | 1155 |
| | — | E. Nacional | Madrid, Spain | 0230 |
| 9765 | — | R. Japan | Tokyo, Japan | 1400 |
| 9770 | 4VEH | V. Evangelique | Cap Haitien, Haiti | 1250 |
| 9833 | — | R. Budapest | Budapest, Hungary | 0030 |
| 9860 | — | R. Peking | Peking, China | 1550 |
| 9910 | VUD | All India R. | New Delhi, India | 2045 |
| 11290 | — | R. Peking | Peking, China | 1545 |
| 11600 | — | R. Peking | Peking, China | 1200 |
| 11672 | — | R. Pakistan | Karachi, Pakistan | 1850 |
| 11705 | — | R. Sweden | Stockholm, Sweden | 0350 |
| 11710 | — | R. Australia | Melbourne, Australia | 1305 |
| 11735 | — | R. Moscow | Moscow, USSR | 2300 |
| | — | R. Habana | Havana, Cuba | 2000 |

## 25-Meter Band—11750-11975 kHz

| | | | | |
|---|---|---|---|---|
| 11750 | — | BBC | London, England | 0700 |
| 11760 | — | R. Hanoi | Hanoi, N. Vietnam | 1300 |
| | — | Vatican R. | Vatican City | 0050 |
| 11785 | — | R. RSA | Johannesburg, S. Africa | 2200 |
| 11800 | — | BBC | London, England | 0200 |
| | — | R. Ceylon | Colombo, Ceylon | 1300 |
| 11805 | — | V. America Relay | Tangiers, Morocco | 0300 |
| 11810 | — | R. Bucharest | Bucharest, Rumania | 0325 |
| | — | R. Sweden | Stockholm, Sweden | 0201 |
| 11820 | ZL3 | R. New Zealand | Wellington, N.Z. | 0645 |
| 11840 | — | R. Warsaw | Warsaw, Poland | 0756 |
| 11865 | PRA8 | R. Club Pernambuco | Pernambuco, Brazil | 0010 |
| 11895 | — | West Indies BC | St. Georges, Grenada | 0204 |
| 11900 | — | R. RSA | Johannesburg, S. Africa | 2330 |
| | — | R. Bucharest | Bucharest, Rumania | 0500 |
| 11910 | — | R. Budapest | Budapest, Hungary | 0030 |
| 11915 | HCJB | V. of Andes | Quito, Ecuador | 0230 |
| 11940 | — | R. Bucharest | Bucharest, Rumania | 0130 |
| 11965 | — | R. Japan | Tokyo, Japan | 1935 |
| | PRB24 | R. Record | Sao Paulo, Brazil | 0200 |
| 11990 | — | R. Prague | Prague, Czech. | 0400 |
| 14510 | — | R. Pyongyang | Pyongyang, N. Korea | 0000 |

## 19-Meter Band—15100-15450 kHz

| | | | | |
|---|---|---|---|---|
| 15081 | — | R. Euzkadi | (clandestine) | 2245 |
| 15105 | — | West Indies BC | St. Georges, Grenada | 2030 |
| 15110 | ZL21 | R. New Zealand | Wellington, N.Z. | 0415 |
| 15115 | HCJB | V. of Andes | Quito, Ecuador | 2345 |
| 15130 | PJB | Trans World R. | Bonaire, Neth. Ant. | 0030 |
| 15145 | ZYK33 | R. Journal | Recife, Brazil | 0115 |
| 15165 | — | R. Denmark | Copenhagen, Denmark | 1510 |
| 15210 | — | V. America Relay | Manila, Philippines | 0040 |
| 15230 | — | R. Habana | Havana, Cuba | 1825 |
| 15285 | — | Vatican R. | Vatican City | 2330 |
| 15335 | ORU | R-TV Belgique | Brussels, Belg. | 2300 |
| | ZYU68 | R. Soc. Farroupilha | Porto Agegre, Brazil | 2300 |
| 15350 | — | R. Luxembourg | Villa Louvigny, Lux. | 0130 |
| 15385 | HCJB | V. of Andes | Quito, Ecuador | 1930 |
| 15400 | ETLF | R. V. Gospel | Addis Ababa, Ethiopia | 0525 |
| 15425 | — | R. Nederland | Hilversum, Netherlands | 2100 |
| | VLX15 | Australian BC | Perth, Australia | 0035 |
| 15430 | — | V. Free Korea | Seoul, Korea | 2230 |
| 17690 | — | R. Peking | Peking, China | 0000 |

## 16-Meter Band—17700-17900 kHz

| | | | | |
|---|---|---|---|---|
| 17700 | — | R. Berlin Int'l. | Berlin, E. Germany | 0655 |
| 17720 | BED39 | V. Free China | Taipei, Formosa | 0250 |
| 17765 | — | Deutsche Welle Relay | Kigali, Rwana | 1830 |
| 17815 | ZYR58 | R. Cultura | Sao Paulo, Brazil | 0205 |
| 17825 | — | R. Norway | Oslo, Norway | 2015 |
| 17845 | WNYW | R. New York WW | New York, N.Y. | 1605 |
| 17860 | ORU | R-TV Belgique | Brussels, Belg. | 2045 |
| 17880 | CSA45 | R. Nacional | Lisbon, Portugal | 1855 |
| 17890 | — | R. Budapest | Budapest, Hungary | 1930 |

## 13-Meter Band—21450-21750 kHz

| | | | | |
|---|---|---|---|---|
| 21480 | — | R. Nederland | Hilversum, Netherlands | 1545 |
| 21495 | — | R. Naciolal | Lisbon, Portugal | 1630 |
| 21510 | — | Vatican R. | Vatican City | 1455 |
| 21655 | — | R. Norway | Oslo, Norway | 1450 |
| 21700 | CSA46 | R. Nacional | Lisbon, Portugal | 1815 |
| 21730 | — | R. Norway | Oslo, Norway | 1605 |
| 25730 | LLL | R. Norway | Oslo, Norway | 1315 |
| 25750 | — | BBC | London, England | 1300 |
| 25900 | LLA | R. Norway | Oslo, Norway | 1400 |

## South American DX

*Continued from page 56*

kHz. Another 31-meter Peruvian, sometimes heard in the morning, is R. Tropical 9710 at rural Tarapoto. Uruguay, home of the famous Punta del Este conferences, is best heard spring and fall evenings via R. Carve 6155 kHz at Montevideo. ORTF has a 4-kW outlet at Cayenne, French Guiana on 3385 kHz which signs on at 0500 EST occasionally with good signals. Weekday S/Off is 2000 EST, but on Saturday nights they stay on an hour later, providing another good chance to hear them. R. Demerara at Georgetown in newly independent Guyana (a hot spot off and on the past couple of years) usually has pretty fair signals on 5980 kHz from 0415 with transmissions in English and Hindi.

**Now They Get Tough!** In the more-difficult-to-log category are Bolivia, Paraguay, Surinam, and Trinidad. Bolivia seems presently to be heard only on 60 meters. Try R. Altiplano on 5045 or R. La Cruz del Sur on 4985; the latter is a religious station and closes down comparatively early at 2200 EST. Paraguay sometimes shows up on 25 meters. Best bet is R. Encarnacion around 11946 kHz just prior to their 2105 S/Off. Like Uruguay and Bolivia, stations in Paraguay are strongest in spring and fall.

Neither Surinam (a Dutch possession) nor Trinidad are active on the shortwave broadcast bands. But R. Surinam has a potent 50 kW medium-wave BCB station on 725 kHz; watch for them in the early evenings. R. Trinidad, 730 kHz, signs on at 0400 EST with 10 kW. Another way of logging Trinidad is to watch for Piarco Aeradio on the aeroband. Our table contains a list of SA air-to-ground frequencies on which many other SAs can also be logged.

### SA Aeronautical Channels

| kHz | Area/Time |
|---|---|
| 4696.5 | West/night |
| 4745.5 | South/night (aircraft only) |
| 5566.5 | North/night |
| 5581.5 | East/night |
| 5727.5 | South/night (ground stations only) |
| 8820 | West/day |
| 8845.5 | East/day |
| 8871 | North/day |

**Just Two More.** Finally, we have the Ascension and Falkland Islands. If you count Ascension Island as part of SA, you won't have any trouble logging the BBC's South Atlantic Relay Station. It operates on many frequencies (try 15105 kHz late afternoons and evenings). Reports for this one should be addressed to BCC South Atlantic Relay, c/o Ascension AAFB, Patrick AFB, Fla. 32925. All other stations listed in this article can be addressed via airmail, simply by a station name, city—which will be the capital unless otherwise indicated—and country.

The Falklands, on the other hand, definitely count as a separate SA country but are one of the hardest to bag of all SA countries. The Falkland Island Broadcasting Service transmits on 3958 kHz, in 75-meter ham territory, until 2000 S/Off (Sat. till 2100). They very seldom get through the ham QRM and even if you did hear them, they don't particularly welcome reports.

There you have it, the scoop on getting a bushel of SA QSLs with the Falkland Island the one rotten apple you'd like to pack in with the lot. Okay, now long wires up and good luck. ■

## Once Upon an F Skip

*Continued from page 94*

years ago. And at that time you were the most famous DXer in the state, I remember."

Assumed my modest tone. "I've been at it for quite a while. But you're my best catch." I knew a lot of my CB brethren were turning green right then, including the guy who ratted on me to the FCC.

"And how would you like to be my QSL manager?"

Like everything was happening at once. "What do you mean? Over."

"Well, KMZ7ØØØ, mail between Cozumel and the United States is very unreliable." He took a breath. "But if I could send you a package of QSLs by insured parcel post, and send you a copy of my log once a month by registered mail, everyone would be sure to get their QSLs."

I considered it. "Sounds okay." It occurred to me that as QSL manager for 43A111, no one would be ratting on KMZ7ØØØ again, or getting on my channel when I was working DX. And most important of all, I'd be

*(Concluded on page 132)*


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## HI-FI/AUDIO

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85. Need a tuner? Preamp? Amp? Tape deck? Then inspect *Dynaco* for kits or wired units. It's worthwhile looking at test reports *Dynaco* sends your way.

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17. *Electro-Voice* has two new, pocket-size, four-color product guides for you. One covers speakers and components; the other, microphones and accessories.

19. *Empire* has made exceptional advances in speaker cabinet design you should read about. Also, *Empire's* successes in the turntable and cartridge fields are worth discovering.

24. Need a hi-fi or PA mike? *University Sound* has an interesting microphone booklet audio fans should read before making a purchase.

27. 12 pages of *Sherwood* receivers, tuners, amplifiers, speaker systems, and cabinetry make up a colorful booklet every hi-fi bug should see.

95. Confused about stereo? Want to beat the high cost of hi-fi without compromising on the results? Then you need the new 24-page catalog by *Jensen Manufacturing.*

99. Get the inside info on why *Acoustech's* solid-state amplifiers are the rage of the experts. Colorful brochure answers all your questions.

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31. All the facts about *Concord Electronics Corp.* tape recorders are yours for the asking in a free booklet. Portable, battery operated to four-track, fully transistorized stereos cover every recording need.

32. "Everybody's Tape Recording Handbook" is the title of a booklet that *Sarkes-Tarzian* will send you. It's 24-pages jam-packed with info for the home recording enthusiast. Includes a valuable table of recording times for various tapes.

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| 119 | 120 | 121 | 122 | 123 | 124 | 125 | | | |

NAME (Print clearly)_____

ADDRESS_____

CITY_____

STATE_____ ZIP_____

## Once Upon an F Skip

*Continued from page 129*

absolutely sure of getting my Cozumel QSL.

"We'd pay your postage of course." A lot of the QRM on our channel had already shut up.

I came back quick. "It's a deal. By the way, who is '*we*'?"

Without even changing his tone of voice. "The Society for World Order, the force behind our glorious Cozumel revolution."

It didn't exactly grab me. "How come it's 'World Order'?"

"Because we have chapters all over this planet, and eventually *SWO* will show the world a new way to peace and prosperity." His signal dipped a little.

"Is 43A111 an official *SWO* station?" I tried to figure where I would mount his card on the wall.

"Every radio station in Cozumel is owned and operated by *SWO*." His signal strength slipped still further down the S-meter. "It's all explained on the back of our 8-by-10 QSL card."

I started my calculations over again.

"On the front of our card is the verification message printed in black letters beneath Cozumel's new flag which is blue with a gold flying saucer on it." He hesitated. "The saucer is just symbolic of course. A symbol of hope for the future." The skip was shifting and now you could make out QRM from a shrimp trawler out in the Gulf of Mexico.

It occurred to me that maybe I didn't want to send out SWO flying saucer QSLs. "What does it say on the back?"

"It lists *SWO's* goals. To build a new society by selecting superior people. To deport undesirables into space. And to establish a colony, for the most superior people of all, on the planet Venus." A moment of dead air, then 43A111 came back, "Did you get all that, KMZ7ØØØ?"

"Yes, I still read you okay." Tried to figure a way of getting his QSL without becoming QSL manager. "Could I see a sample before I take over as manager? Maybe you could send me mine and then I'd decide." The thought hit me that using CB to distribute political propaganda might even be more illegal than DXing.

Now 43A111 was only a couple S units above half a dozen others on the channel. "Sorry, but the first QSL we send to each country must go to a *SWO* convert. And you'd better make up your mind pretty quick because this skip isn't going to last much longer."

So I took 10 seconds to mull it over. And I said to myself, why should I blow my title as King of the CBers just because there's a kookie flying saucer on the Cozumel QSL. "Okay, 43A111, I'll do it." Like I always said, in CB DXing you really got to think fast and straight. ■

## Cool CB Clubs

*Continued from page 102*

**6.** Do not let a small group take over a meeting, this could lead to a downfall of your meetings and club.

**7.** Always permit guests at your meetings so that you do not get a name of being a select group that snubs others.

**8.** Make sure that a Treasurer's report and minutes of the previous meeting are read at each meeting, even though the meeting might have been called for social activities only.

**9.** Each member, when addressing the Chairman or group, should stand.

**10.** Respect your Officers and your members when addressing them at meetings.

These simple rules always leave a good meeting behind and everyone will look forward to the next one. The greater the attendance at any meeting, the greater the chance of a highly successful organization.

**Disadvantages Of Clubs.** There are, or can be, disadvantages to CB clubs. Sometimes they tend to form cliques—small factions within the organization which shun other members. Or, in some cases, several members who don't like a few of the things which all the other members vote for, pull out and form a "rival club" for the sole purpose of razzing the original group. This, of course, leads to friction on the band and poor communications for all. These things can usually happen in a poorly run club with weak leadership. If your club has a definite and useful purpose, members who are willing to work for their club, and alert and active leadership, these disadvantages cannot possibly befall your group.

Here's hoping that your club will rank high on the list of CB clubs throughout the nation. ■

## Ham Traffic

*Continued from page 96*

but it just happened to be the right one to produce a high score. So no one in the club has any advantage over anyone else.

Sounds like good clean fun. (No wonder they call it the Free Style Hi-Jinks Contest!)

**It Pays To Be Original.** Did you hear the W9 calling "CQ flying saucers?" A lot of guys probably thought he was a nut and tried to ignore him, but a curious OA4 answered. After they got a QSO going, the OA4 said, "Say, have you ever actually worked any of those flying saucers?"

"Naw," answered the W9 with a chuckle. "But you'd be surprised how many new DX contacts I make that way!"

**How To Win A Pink Ticket.** Some "tricks" for working DK aren't quite so humorous or so innocent as the one just mentioned. "Tail ending," as practiced by some over-zealous DX operators, not only is bad manners, but can get these fellows into trouble with the FCC. DXers have argued for years over whether 'tis good or bad to "tail end."

Now Uncle Sam has made the decision for them: 'tis bad.

In case you're not familiar with the term, "tail ending" means sending only your own call ("DE W2XYZ," for example) in a DX pile-up, hoping that rare station everyone is after will answer you. Signing your call this way after making an on the air test is, of course, a requirement. (But *please*, guys, show respect for your fellow hams by making those tests short and with a minimum of power.) But using this little trick as bait for a DX call is now officially frowned on. So lets not use it!

Another bit of sloppy operating that's getting some attention from the FCC citation typists is the failure of many mobile operators to give their location when signing their calls. The rules are very specific on this point. And though the FCC boys are pretty busy these days, they do spent part of their time listening to *us*, with pencil in hand and tape recorders running.

Also taboo, according to latest reports, is discussion of commercial sale of radio gear over the air. Probably this is a case of some greedy wheelers and dealers ruining a good thing for all of us. A fellow in a small town calling his buddy in the big city on the air to pick up a crystal and a couple of tubes for him is one thing; a few guys carrying on at great length to arrange the buying and selling of hundreds of bucks worth of gear from one another is a colt of a different hue. Citations for just this sort of thing have been issued, so watch it (!).

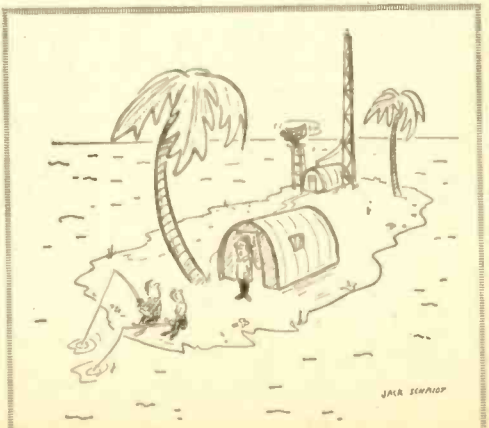
**Move Down For Progress?** A lot of "progressive" hams say it's old fashioned to operate down on the "DC bands" of 80 through 10 meters. VHF is the wave length of the future, they say. Gotta keep going higher and higher in frequency to stay up to date.

But here comes a voice in the wilderness arguing the low frequencies should be explored by the ham who's really thinking ahead.

This fellow is John Griggs, W6KW. With a call like that, you know he's been around a long time. Truth is, he started with a spark set in the early 1920s and, as an electronics engineer, has been keeping pace with progress ever since.

The main trouble with high frequencies is they get knocked out by nuclear blasts, says John. Of course, we all hope there won't be any nuclear blasts to worry about. But if there are, hams will be needed for emergency communications.

The low frequencies below the AM broadcast band might be the ticket to survival because they aren't affected by nuclear explosions. Hams who want to be a genuine public service should give some thought to experimenting down on those low frequencies, he says. Of course, they'll need a mighty big back yard for the antenna, but it looks like John may have a good idea there. ■



"Any you guys know Morse code?"

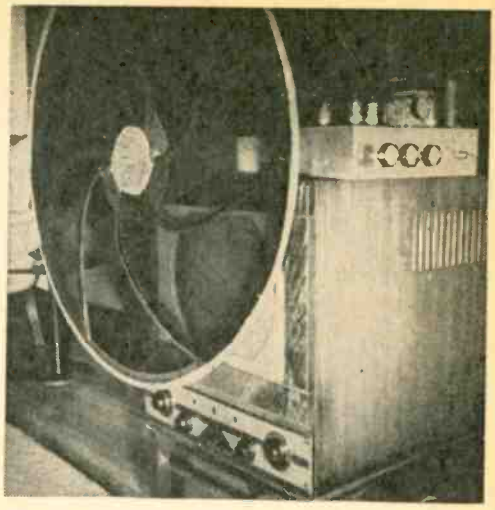
## Add Color to Any TV

*Continued from page 60*

closing the wheel assembly will lower the noise level and improve the control characteristics. It will also enhance the set's appearance. Thin sheets of wood veneer in front and in back of the wheel can be used for the job; the space containing the wheel itself can be sealed off with wood-grained adhesive tape. Clear vinyl windows should then be set into both covers to end the job.

Driving power for the author's wheel, came from a ¼-hp, 1725-rpm motor ($5 at a surplus store). Belt-driven pulleys deliver power to the wheel. This large motor, and consequent beefing up of the motor control circuits, became necessary after the move to heavier masonite. A 30-in. wheel of such dense material has considerable inertia; a plastic or aluminum web probably would not require such a gargantuan motor.

**Technicolor TV.** Performance of the converted set is quite satisfactory. Brightness, as mentioned, is almost up to that of conventional color sets. The converted set's definition, because of the continuous phosphor coating on the black-and-white tube, is better than that of ordinary color sets. The color itself is excellent—better than 3-gun sets.



**The completed conversion all set up and ready to bring you the last word—and the first—in technicolor TV.**

Since there is only one gun in the picture tube instead of three, and one color amplifier instead of three, there is never a color balance problem. And, of course, the picture is always perfectly converged. Operation is as simple as that of standard sets. Once the alignment is performed and the wheel controls set, only the two ordinary color controls may ever need touching up. ■

## Free Wheeling Fixit

*Continued from page 90*

capacitors are of the high capacity variety with low working voltage. The capacity range is usually from 250 to 100 *u*F at 16 volts.

**Receiver Alignment.** Auto radio receiver alignment is rather simple if a signal generator is handy. If not, take the radio receiver to a qualified radio-TV shop. Generally, receiver alignment is only necessary after the radio becomes well worn or when replacing a defective IF transformer.

Take the signal generator and couple a 0.1 *u*F capacitor in series with the probe and hook to the base terminal of the converter transistor. Ground the shield to the radio chassis. Set the signal generator to 262 kHz with 400-Hz modulation, and place an output meter across the speaker voice coil leads. Some VOMs already have built-in output meter jack. Leave the tuning dial at the extreme high end of the radio dial. Adjust the top and bottom slug of each IF transformer for maximum reading on the output meter.

Construct a homemade dummy antenna and place the signal generator in series with it, as shown in Fig. 19. Set the signal generator frequency at 1615 kHz with radio tuning dial at this same frequency. Now adjust the RF and oscillator trimmer screws for maximum reading on the output meter. This done, go back and recheck the whole alignment procedure.

**Last Minute Checks.** Before buttoning up the bottom cover, check the pilot light. If defective, replace with a 12-volt 1892 or 1891 pilot light. Wipe off the dust from the dial assembly and sweep out chassis dust with an old paint brush. Now is also the time to check and reset those push buttons.

See if the local broadcast stations are in tune with the tuning dial. If not, loosen up the dial pointer and set it. Now the radio is ready to be re-installed. Actually, repairing the solid-state auto radio is not too difficult—you saved a few bucks and had some fun doing it. OK? ■

## Super Squared 3

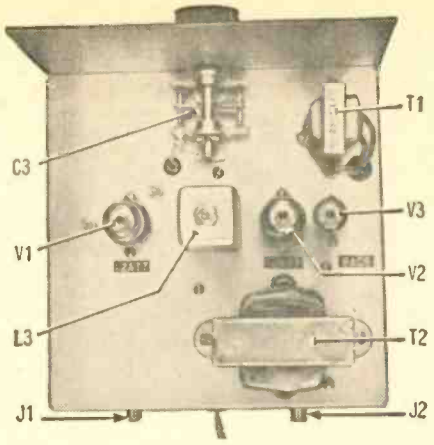
*Continued from page 74*

active then. Adjust L2 (with C3 at full capacity) to a point just below the activity on the band. Tune C3 to a station and adjust L1 for best reception.

**Getting The Mostest.** For best reception, you'll need a good outside two-meter antenna. For vertically polarized signals, a ground plane antenna is a good bet. Use coax to feed the antenna to the receiver. For horizontally polarized signals, a two-meter dipole, beam, or TV antenna will work. For strong local signals, an 18-in. whip connected to J1 will be OK.

In addition to two-meter hams, CAP and MARS nets are usually in operation at the ends of the band. Also, in many communities, civil defense has two-meter nets within the ham band. Adjust the Regen control for best reception of each signal. If you hear strong 12-MHz signals leaking through, adjust the tuning screw of L3 (local oscillator) for a quiet frequency.

To sum it all up, what you'll find is what lots of others have found—there's a hot time to go to town with the Super Squared 3. ■

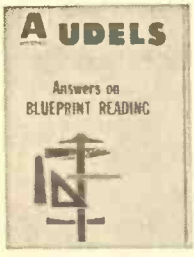



**Layout of Super Square is neat and clean, with plenty of working room. Finished rig makes attractive addition to any shack.**

## Bookmark

*Continued from page 24*

men will find the new Audel book *Answers on Blueprint Reading* valuable, both as a reference and as a study-guide in understanding this language. The first part of the book gives the basic knowledge needed to understand and interpret blueprints. Since the craftsmen of each trade should learn to understand the symbols of all the other trades, various later chapters explain

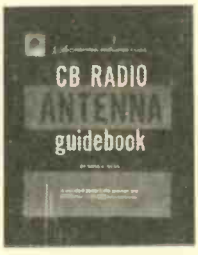



Hard cover
416 pages
$4.95

the particular set of symbols used for maps, topographical drawings, buildings, and electricity. The many illustrations have been planned to supplement the practical text and thus increase the ease of understanding the subject.

Copies are available from bookstores throughout the country, or from the Audel Division of Howard W. Sams & Co., Inc., 4300 West 62nd St., Indianapolis, Ind. 46206. ■

**CB Antennas.** A great deal of confusion exists about antennas, due primarily to a lack of knowledge about them. This is especially true in CB where the user doesn't give a ding about his skyhook. Far too much of the RF soup is




Soft cover
136 pages
$2.75

lost in the antenna system because of mismatch, poor antenna selection, improper installation—just to name a few. In his bid to bring improved communications to CB, David E. Hicks compiled his *CB Radio Antenna Guidebook*.

The purpose of this book is to acquaint the reader with the importance of a good antenna system. It also familiarizes him with the various types of CB antennas and their theory of operation. You can learn what communicating range to expect, how radio waves react under various conditions, how to properly select and install base and mobile antennas, and how to improve efficiency of existing antenna systems. Want a copy? If your local electronics parts supply store does not have a copy, write to Howard W. Sams & Co., Inc., 4300 West 62nd St., Indianapolis, Ind. 46206. ■

## Receiver Kits

*Continued from page 62*

kits. At the rock-bottom end of the price range are several regenerative receivers called *regens* for short. Regen receivers utilize regenerative detectors that deliver remarkably high sensitivity, but with poor stability and selectivity. Therefore, their value lies chiefly in their very good sensitivity-to-price ratio.

Outside of the regens, all other SW receiver kits are *superhets*, with prices generally indicative of both performance and features.

**Which Features For You?** Following is a list of the common features found on the SW receiver kits. Since no one receiver has all the listed features, we suggest you decide which features are most important to you and then select a kit you can afford that comes nearest having most of the features you've selected.

**Calibrated Bandspread.** Though every SW receiver worthy of the name has bandspread to stretch the tuning, a calibrated bandspread directly indicates the tuned amateur (or CB) frequency when the main tuning dial is set to a specific frequency of reference mark. Non-calibrated bandspread in contrast, offers a "logging" scale reading from 0-10 or 0-100.

**Variable BFO.** Except for the regens which can pull in code (CW) when set to an oscillatory state, all SW receivers must employ a beat frequency oscillator (BFO) to produce a tone (beat note) when receiving (CW) signals. If the BFO's frequency is fixed, the beat-note tone can be changed only by adjusting the receiver's tuning. A receiver with a variable (or adjustable) BFO allows the beat-note tone to be changed without adjusting the receiver's tuning.

**Product Detector.** A product detector provides optimum reception of sideband signals; it is also used for CW. However, if the product detector isn't also provided with a variable BFO, the receiver's tuning must be adjusted to change the tone of the CW beat note.

**AVC Switch.** The AVC switch allows a receiver's automatic volume control to be disabled for CW and sideband reception, or for extra sensitivity to receive very weak phone signals.

**RF Gain Control.** The RF gain control allows the user to set the RF/IF gain to whatever *he* feels is the optimum value.

**Antenna Trimmer.** An antenna trimmer enables the user to optimize the receiver's input tuning to a particular antenna. Such adjustment has a marked effect on the receiver's overall sensitivity.

**RF Amplifier.** An RF amplifier is a stage of amplification before the converter (mixer/oscillator), which, among other things, sharply improves sensitivity above about 14 MHz (compared with receivers that do not use an RF amplifier between the antenna and the converter). Receivers without an RF amplifier, as a general rule, exhibit poor sensitivity above the 14-MHz mark.

**Standby Switch.** The standby switch cuts off the receiver yet keeps it in a state of readiness so reception can be immediately restored.

**Standby Terminals.** Standby terminals allow the receiver to be controlled by external equipment such as a transmitter, which would automatically turn the receiver on and off during receive and transmit periods.

**Phone (Headphone) Jack.** A phone jack allows direct connection of headphones, an external speaker, or a speaker if the receiver isn't so equipped. As a general rule, inserting a phone plug in the phone jack automatically mutes the built-in speaker.

**Q-Multiplier Jack.** A Q-multiplier is a device that sharply improves a receiver's selectivity. Such units are available as add-on accessories, and are simply plugged into the Q-multiplier jack of the receivers that are so equipped. A modest amount of wiring is required to connect a Q-multiplier to receivers that lack such jacks.

**Tuning Meter.** A tuning meter indicates the *relative* strength of a received signal.

**S-Meter.** S-meters, if correctly designed, register a 6-dB change in signal strength as a variation of one S-unit. In addition, the S9 value may have a specific reference value such as 10, 50, or 100 $\mu$V. If there is a specific reference it will usually be so specified in the instruction manual. An S-meter not specifically calibrated in dB per S-unit isn't a true S-meter at all—simply an ordinary tuning meter.

**Noise Limiter.** A noise limiter clips the sharp peaks off impulse noise—that from an auto's ignition system, for example—thereby reducing the "grind" effect of constant noise as well as improving the signal-to-man-made-noise ratio. All receivers with noise limiters are equipped with an on/off switch, since the noise limiter introduces some distortion. ■

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**Gene Frost was "stuck" in low-pay TV repair work. Then two co-workers suggested he take a CIE home study course in electronics. Today he's living in a new house, owns two good cars and a color TV set, and holds an important technical job at North American Aviation. If you'd like to get ahead the way he did, read his inspiring story here.**

IF YOU LIKE ELECTRONICS—and are trapped in a dull, low-paying job—the story of Eugene Frost's success can open your eyes to a good way to get ahead.

Back in 1957, Gene Frost was stalled in a low-pay TV repair job. Before that, he'd driven a cab, repaired washers, rebuilt electric motors, and been a furnace salesman. He'd turned to TV service work in hopes of a better future—but soon found he was stymied there too.

"I'd had lots of TV training," Frost recalls today, "including numerous factory schools and a semester of advanced TV at a college in Dayton. But even so, I was stuck at $1.50 an hour."

Gene Frost's wife recalls those days all too well. "We were living in a rented double," she says, "at $25 a month. And there were no modern conveniences."

"We were driving a six-year-old car," adds Mr. Frost, "but we had no choice. No matter what I did, there seemed to be no way to get ahead."

### Learns of CIE

Then one day at the shop, Frost got to talking with two fellow workers who were taking CIE courses... preparing for better jobs by studying electronics at home in their spare time. "They were so well satisfied," Mr. Frost relates, "that I decided to try the course myself."

He was not disappointed. "The lessons," he declares, "were wonderful—well presented and easy to understand. And I liked the relationship with my instructor. He made notes on the work I sent in, giving me a clear explanation of the areas where I had problems. It was even better than taking a course in person because I had plenty of time to read over his comments."

### Studies at Night

"While taking the course from CIE," Mr. Frost continues, "I kept right on with my regular job and studied at night. After graduating, I went on with my TV repair work while looking for an opening where I could put my new training to use."

His opportunity wasn't long in coming. With his CIE training, he qualified for his 2nd Class FCC License, and soon afterward passed the entrance examination at North American Aviation. "You can imagine how I felt," says Mr. Frost. "My new job paid $228 a month more!"

# "CIE training helped pay for my new house,"

says Eugene Frost
of Columbus, Ohio

Currently, Mr. Frost reports, he's an inspector of major electronic systems, checking the work of as many as 18 men. "I don't lift anything heavier than a pencil," he says. "It's pleasant work and work that I feel is important."

### Changes Standard of Living

Gene Frost's wife shares his enthusiasm. "CIE training has changed our standard of living completely," she says.

"Our new house is just one example," chimes in Mr. Frost. "We also have a color TV and two good cars instead of one old one. Now we can get out and enjoy life. Last summer we took a 5,000 mile trip through the West in our new air-conditioned Pontiac."

"No doubt about it," Gene Frost concludes. "My CIE electronics course has really paid off. Every minute and every dollar I spent on it was worth it."

### Why Training is Important

Gene Frost has discovered what many others never learn until it is too late: that to get ahead in electronics today, you need to know more than soldering connections, testing circuits, and replacing components. You need to really know the fundamentals.

Without such knowledge, you're limited to "thinking with your hands" ...learning by taking things apart and putting them back together. You can never hope to be anything more than a serviceman. And in this kind of work, your pay will stay low because you're competing with every home handyman and part-time basement tinkerer.

But for men with training in the fundamentals of electronics, there are no such limitations. They think with their heads, not their hands. They're qualified for assignments that are far beyond the capacity of the "screwdriver and pliers" repairman.

The future for trained technicians is bright indeed. Thousands of men are desperately needed in virtually every field of electronics, from 2-way mobile radio to computer testing and troubleshooting. And with demands like this, salaries have skyrocketed. Many technicians earn $8,000, $10,000, $12,000 or more a year.

How can you get the training you need to cash in on this booming demand? Gene Frost found the answer in CIE. And so can you.

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Thousands who are advancing their electronics careers started by reading our famous book, "How To Succeed In Electronics." It tells of the many electronics careers open to men with the proper training. And it tells which courses of study best prepare you for the work you want.

If you'd like to get ahead the way Gene Frost did, let us send you this 40-page book free. With it we'll include our other helpful book, "How To Get A Commercial FCC License." Just fill out and mail the attached card. Or, if the card is missing, write to CIE at the address below.

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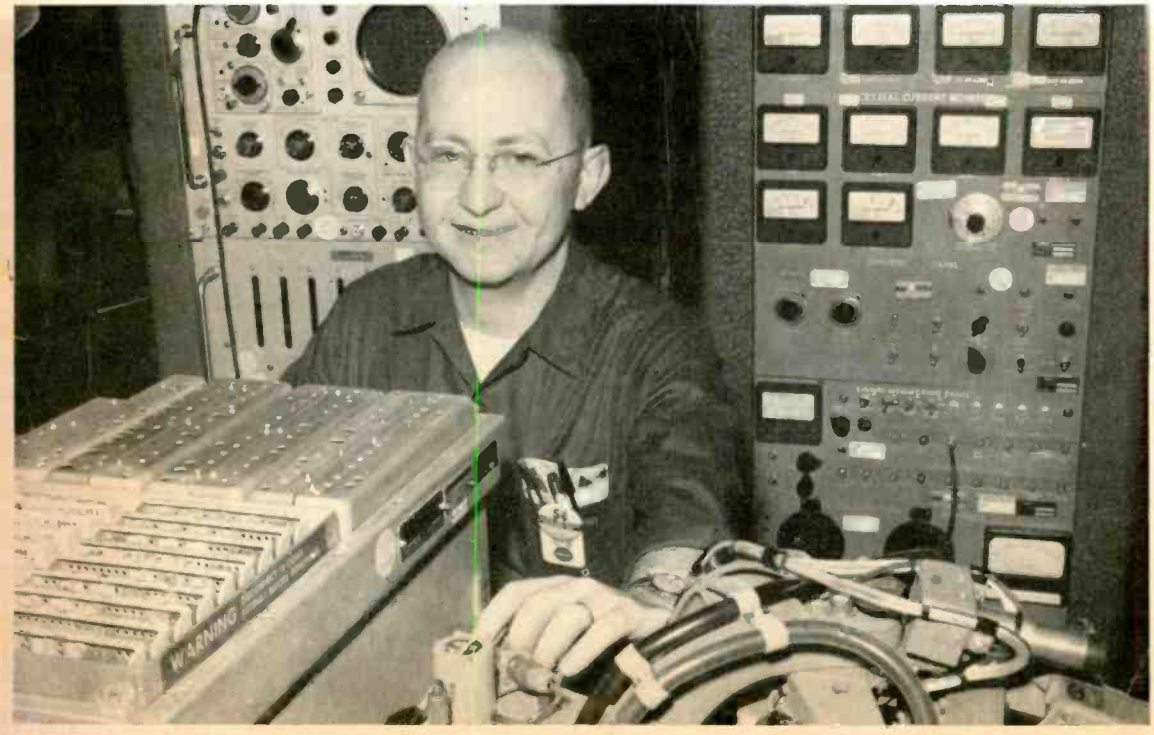

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You do not need the slightest background in radio or science. Whether you are interested in Radio & Electronics because you want an interesting hobby, a well paying business or a job with a future, you will find the "Edu-Kit" a worth-while investment.

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The Progressive Radio "Edu-Kit" is the foremost educational radio kit in the world, and is universally accepted as the standard in the field of electronics training. The "Edu-Kit" uses the modern educational principle of "Learn by Doing." Therefore you construct, learn schematics, study theory, practice trouble shooting—all in a closely integrated program designed to provide an easily-learned, thorough and interesting background in radio.

You begin by examining the various radio parts of the "Edu-Kit." You then learn the function, theory and wiring of these parts. Then you build a simple radio. With this first set you will enjoy listening to regular broadcast stations, learn theory, practice testing and trouble-shooting. Then you build a more advanced radio. Learn more advanced theory and techniques. Gradually, in a progressive manner, and at your own rate, you will find yourself constructing more advanced multi-tube radio circuits, and doing work like a Professional Radio Technician.

Included in the "Edu-Kit" course are Receiver, Transmitter, Code Oscillator, Signal Tracer, Square Wave Generator and Signal Injector Circuits. These are not unprofessional "breadboard" experiments, but genuine radio circuits, constructed by means of professional wiring and soldering on metal chassis, plus the new method of radio construction known as "Printed Circuitry." These circuits operate on your regular AC or DC house current.

## THE "EDU-KIT" IS COMPLETE

You will receive all parts and instructions necessary to build twenty different radio and electronics circuits, each guaranteed to operate. Our Kits contain tubes, tube sockets, variable, electrolytic, mica, ceramic and paper dielectric condensers, resistors, tie strips, hardware, tubing, punched metal chassis, Instruction Manuals, hook-up wire, solder, selenium rectifiers, coils, volume controls and switches, etc.

In addition, you receive Printed Circuit materials, including Printed Circuit chassis, special tube sockets, hardware and instructions. You also receive a useful set of tools, a professional electric soldering iron, and a self-powered Dynamic Radio and Electronics Tester. The "Edu-Kit" also includes Code Instructions and the Progressive Code Oscillator, in addition to F.C.C. Radio Amateur License training. You will also receive lessons for servicing with the Progressive Signal Tracer and the Progressive Signal Injector, a High Fidelity Guide and a Quiz Book. You receive Membership in Radio-TV Club, Free Consultation Service, Certificate of Merit, Discount Privileges. You receive all parts, tools, instructions, etc. Everything is yours to keep.

Progressive "Edu-Kits" Inc., 1186 Broadway, Dept. 544NN, Hewlett, N. Y. 11557

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1186 Broadway, Dept. 544NN, Hewlett, N. Y. 11557

## FREE EXTRAS

**• SET OF TOOLS**

- SOLDERING IRON
- ELECTRONICS TESTER
- PLIERS-CUTTERS
- VALUABLE DISCOUNT CARD
- CERTIFICATE OF MERIT
- TESTER INSTRUCTION MANUAL
- HIGH FIDELITY GUIDE • QUIZZES
- TELEVISION BOOK • RADIO TROUBLE-SHOOTING BOOK
- MEMBERSHIP IN RADIO-TV CLUB: CONSULTATION SERVICE • FCC AMATEUR LICENSE TRAINING
- PRINTED CIRCUITRY

## SERVICING LESSONS

You will learn trouble-shooting and servicing in a progressive manner. You will practice repairs on the sets that you construct. You will learn symptoms and causes of trouble in home, portable and car radios. You will learn how to use the Professional Signal Tracer, the unique Signal Injector and the dynamic Radio & Electronics Tester. While you are learning in this practical way, you will be able to do many a repair job for your friends and neighbors, and charge fees which will far exceed the price of the "Edu-Kit." Our Consultation Service will help you with any technical problems you may have.

## FROM OUR MAIL BAG

J. Stataitis, of 25 Poplar Pl., Waterbury, Conn., writes: "I have repaired several sets for my friends, and made money. The "Edu-Kit" paid for itself. I was ready to spend $240 for a Course, but I found your ad and sent for your Kit."

Ben Valerio, P. O. Box 21, Magna, Utah: "The Edu-Kits are wonderful. Here I am sending you the questions and also the answers for them. I have been in Radio for the last seven years, but like to work with Radio Kits, and like to build Radio Testing Equipment. I enjoyed every minute I worked with the different kits; the Signal Tracer works fine. Also like to let you know that I feel proud of becoming a member of your Radio-TV Club."

Robert L. Shuff, 1534 Monroe Ave., Huntington, W. Va.: "Thought I would drop you a few lines to say that I received my Edu-Kit, and was really amazed that such a bargain can be had at such a low price. I have already started repairing radios and phonographs. My friends were really surprised to see me get into the swing of it so quickly. The Trouble-shooting Tester that comes with the kit is really swell, and finds the trouble, if there is any to be found."

## PRINTED CIRCUITRY

At no increase in price, the "Edu-Kit" now includes Printed Circuitry. You build a Printed Circuit Signal Injector, a unique servicing instrument that can detect many Radio and TV troubles. This revolutionary new technique of radio construction is now becoming popular in commercial radio and TV sets.

A Printed Circuit is a special insulated chassis on which has been deposited a conducting material which takes the place of wiring. The various parts are merely plugged in and soldered to terminals.

Printed Circuitry is the basis of modern Automation Electronics. A knowledge of this subject is a necessity today for anyone interested in Electronics.