

WATT

NEWS



19
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BY
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WATT NEWS

Volume 1

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19 S. WELLS ST., CHICAGO, ILLINOIS

IN THE INTEREST OF SHORT WAVE RADIO



EMERGENCY - FLOOD - QRR

A True Tale of the

"BLACK CAT RADIO CLUB"

The Black Cat Radio Club (Thirteen charter members organized on Friday the thirteenth) just recently organized, applied for a station license but, up to the time of the flood, did not receive the club call. The president of the club, W9VZP, volunteered to obtain permission to operate portable until the club call was issued. W9VZP, portable, operated during the flood as assistant net control station on the low frequency Red Cross Relief Net for Southern Illinois and Kentucky on the frequencies between 1800 and 1825 KC.

Two transmitters were in operation. One on the 160 fone and one on the 40 meter CW bands.

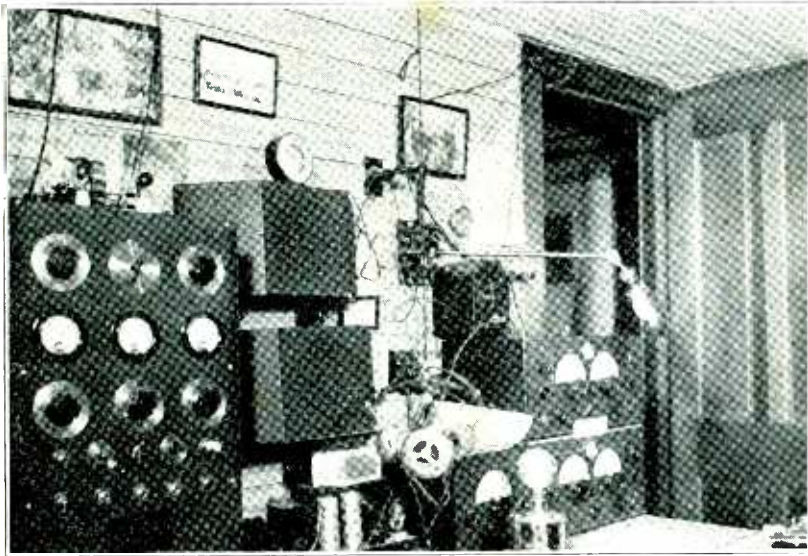
Other amateur stations in this net were W9WDZ, W9IBS, W9ICS, W9LBR, W9LIG, W9RXA, W9UWS, W9UWC, W9UWL, W9UAK, W9GSS, W9LYF, W9BJE, WQPD, the Illinois State Police at Duquoin, Illinois and W9VZP consistently. Also Naval Reserve Station NDSF at Shawneetown, Ill., and Army Reserve Station PB7 of Eldorado, Ill. W9TEW and W9GET assisted W9RXA in handling the Chicago end of the traffic.

W9VZP, portable, assisted in the handling of 2200 messages of which none were personal messages.

The Black Cat Radio Club and all participating in the flood emergency work are to be highly praised and congratulated for their untiring efforts to push the traffic through for aid to the stricken areas.

Here is what W9VZP himself says: "If you have been listening on the 160 meter band very much, you probably are aware of the St. Louis Red Cross net handling traffic out of Rosiclare and Cairo and W9VZP is one of the monitoring stations or "Watch Dogs" to aid in keeping QRM off the frequencies from 1800 to 1830 KC.

"When the emergency first arose, I handled the situation as best I could by myself Friday, Saturday and Sunday nights, Jan. 22, 23 and 24—then tried to work all day Monday with practically no sleep over the weekend. My Sky-Buddy did a job I am really proud of and I think it is a very fine receiver. However, our Radio Club has headquarters located at Zearing, Ill. (Black Cat Radio Club) and Mr. Ed Grabill has a wonderful antenna to hook his transmitter on when he gets his ticket. It is made of two windmill towers 60' high, with 20' of 2" pipe on top of them and the antenna is a half wave 160 meter antenna. He offered us the use of his



W9VZP (Portable) Zearing, Ill., Headquarters of the Black Cat Radio Club

equipment during the emergency so we moved the transmitter up there and obtained a permit to operate portable. The fellows took turns at the rig and a licensed operator was on duty there every night and standing by from about 5:00 P. M. until about 7:20 A. M. Mr. Weisenberger, W9NNH, donated his receiver so the frequencies were constantly being monitored by two receivers and all QRM quickly and efficiently taken off the air.

"We feel that we were of some use to the net by keeping the channels clean and have often repeated messages to the control station W9WDZ,

at Collinsville, Ill., who, by the way also has a Sky-Buddy, and it was in constant use until last Saturday when the Aluminum Ore Company of St. Louis donated him the use of their equipment. W9IBS, at Rosiclare, Ill., was completely isolated by the flood and W9ILG of Mark, Ill., is certainly to be complimented on the way he stood by and gave his entire time to monitoring. His name is Ugo Borri and he teaches in the Mark Grade School during the day. During the flood he taught in the daytime and stood by every night from about 6:00 P. M. until 4:00 A. M.

"Sincerely yours,

"L. B. Boles, W9VZP."

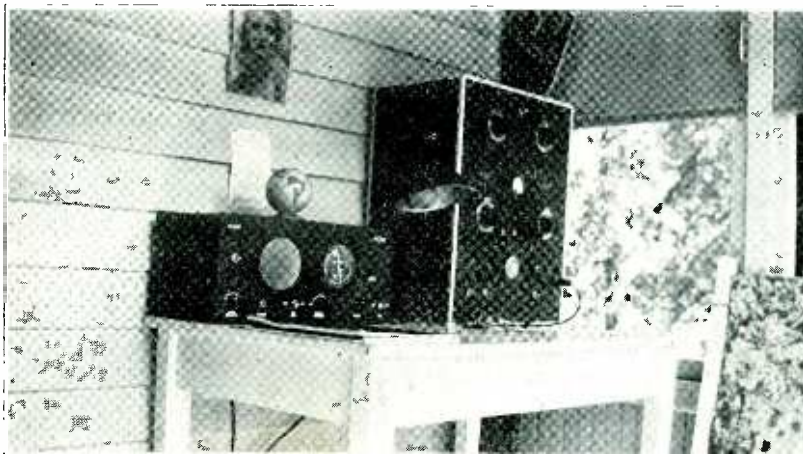
You and your station may be called upon at any moment to act in an emergency—so be ready, with up-to-date good equipment when your big time comes.

Watt News wants to have your reports on unusual or sensational DX and traffic QSOs, participation in emergency work, etc.

What have **you** done?

WATT THEY SAY--

TNX A LOT, OMS!



"Am attaching hereto a snapshot of the transmitter I built, also showing my Sky-Buddy. Been going places with it too, lately, getting RST589 and 599 reports each time."

W9YVL, Clarence Stoltz, 1437½ George St., La Crosse, Wis.

"It has been a pleasure to do business with you. Watt News is a great idea. Keep it up."

W1JPQ, Norman Eisnor, Somerville, Mass.

"I received my copy of Watt News OK and it is a very FB paper. I hope it continues to grow and prosper."

VE3ABM, Bob Cowan, Bracebridge, Ont.

"Just a line to tell you how much I appreciate your keeping your word on the delivery of my new SX-16. It sure measures up to all I expected it to as far as I can see. This morning I heard seven VKs in about 20 minutes and I probably am not getting all it can produce because it will take some practice to really be able to tune it. Thanking you again, I remain sincerely yours."

W9ZNW, John F. Holub, 1419 S. Clarence Ave., Berwyn, Ill.

"Received my Super Skyrider receiver in fine shape—didn't waste much time trying it out. Surely works swell. Have already had several "comps" from some of the hams here.

"I also want to thank you for your very prompt service and you may be sure that if I can boast Hinds & Edgerton in any way I shall be very glad to do it.

"Thanking you again for your favors and promptness, I am, very sincerely yours."

Don Stensland, Miller, S. D.

"My Sky-Buddy is now being used in Naval Reserve Headquarters in the Post Office Building and is certainly one FB little job."

G. Van W. Stivers, Riverhead, N. Y.

"I am very pleased with the performance of my new SX-16. It outperforms the old one a million ways."

G. L. Prokop, W9WNN, Wahoo, Nebr.

"My new SX-16 Super Skyrider is tops and I'm crazy about it."

John Cunningham, W9KZV, Maywood, Ill.

Sky-Challenger

40,000KC TO 535KC (7.5 TO 540 METERS)

GREATER
SELECTIVITY



BETTER
SENSITIVITY



NEW FEATURES



We feel sure the SKY CHALLENGER represents the BEST value in the communications field. ALL frequencies are covered in five bands from 40,000 KC to 535 KC, with no gaps, no dead spots; smooth, continuous electrical band spread is used, same as in the more expensive SUPER SKYRIDER; iron core IF's, air trimmed RF's, nine tubes, six of them metal—all combine to make it sensitive and selective to a high degree.

Embodying many of the features of the Super SKYRIDER, it has been engineered with the thought of satisfying the most exacting amateur, without placing too heavy a burden on his pocketbook.



FEATURES

- 6 Metal—3 Glass Tubes.
- 40 MC to 535 KC in 5 Bands.
- 338° Main Tuning Dial.
- 2 Stages Iron Core I.F. (465 KC).
- Electrical Band Spread.
- Direct Calibration—No Charts or Tables.
- Pitch and Tone Controls.
- Crystal (optional).
- AVC and Send-Receive Switches.
- 4 Watts Audio.
- Headphone Jack.
- Antenna Circuit Arranged for Doublet or Conventional Type Aerial.
- Tubes:
 - 6C5—Oscillator
 - 6K7—RF
 - 6L7—1st Detector
 - 6K7—1st IF
 - 6K7—2nd IF
 - 6Q7G—Second Detector. AVC and 1st AF
 - 6F6G—Output
 - 80—Rectifier
 - 6K7—Beat frequency oscillator.

Model	Cash	Down Payment	6 Months	9 Months	12 Months
S-15 Less Speaker and Crystal	\$69.50	\$11.00	\$10 10	\$6.65	\$5.20
SX-15 Less Speaker with Crystal	79.50	12.50	11.55	8.00	6 10
S-15 With Speaker Less Crystal	79.00	12.00	11.55	8.00	6.10
SX-15 With Crystal and Speaker	89.00	15.00	13.45	8.95	6.90

NOTHING ELSE TO BUY

Buy it on time from HINDS & EDGARTON, 19 S. WELLS ST., CHICAGO, ILL.



“WATTS NEW”

(THAT'S WORTH SINGING ABOUT)

NOW! ALL TOGETHER BOYS!

PARTS ON TIME!

Now you can purchase any standard parts for your new transmitter, receiver, or other, on time payments from Hinds & Edgerton. Make up your list and send it in to us for special low cost quotation. Our prices are the best and no one can beat our service and personal cooperation.

TUBES

Raytheon announces two new tubes:
New 866 half wave mercury vap. rect. Fil. 2.5 v., 5 amp. Peak inv. v. 7500. Cur. .6 amp. \$1.50 net.

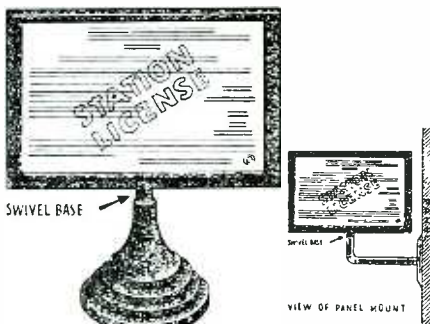
The new RK20A with the same characteristics as the RK20 except the filament is designed for long period use, has 3 1/4 amps instead of 3, improved glass for high frequency use and the net cash price is the same as before—only \$15.00.

STATION LICENSE HOLDERS

Amateur station and operator's license card calibration chart or curve sheet slides in the right side of the frame and is sandwiched between two heavy pieces of pyralin. Swivel type of mounting allows inspection of either side of license card or curve sheets. Two pieces of centimeter graph paper furnished; overall size of frame 4 1/2"x3" made of steel and finished in black crackle to match your other station equipment.

No. 150—License frame and chart holder with heavy desk base mounting—only 75c.

No. 151—License frame and chart holder with panel mounting bracket—only 75c.



PRECISION AC-DC SERIES

840L VOLT-OHM-DECIBEL-MILLIAMMETER

The series 840 tester provides complete facilities for obtaining all necessary measurements including a wide variety of ranges. The radio technician will find this instrument ideally suitable for servicing radio receivers, transmitters and P.A. systems. Although nominally priced, the same well known Precision quality and standard of accuracy prevails as incorporated in higher priced Precision testing equipment.

SPECIFICATIONS

Five A.C. and D.C. voltage ranges at 1000 ohms per volt:

0-10; 0-50; 0-250; 0-1000 and 0-2500 volts.

Four D.C. current ranges:

0-10; 0-50; 0-250; 0-1000MA.

Three resistance ranges:

Low ohms (shunt method) 1/4 to 400 ohms; 20 ohms center.

Medium ohms 0 to 1 megohms.

High ohms 0 to 10 megohms.

Note—Provision for mounting ohmmeter power supply (4 1/2v. and 45v. batteries) on inside of case.

No external connections necessary.

Five Decibel ranges from -10 to +63 DB:

0 DB; +14 DB; +28 DB; +40 DB; +48 DB.

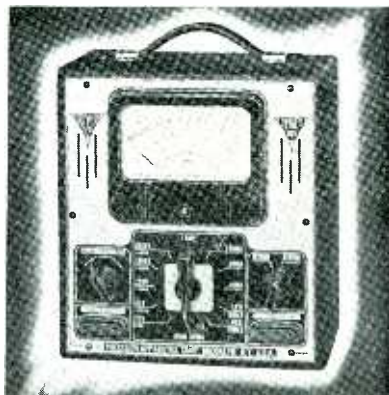
Five output ranges:

OTHER FEATURES:

Large 4" x 4 5/8" square type meter, base sensitivity 400 microamperes, D'Arsonval movement 2% accuracy; dual adjust ohms control; leatherette covered wooden case with carrying handle. Compact size 7 1/2 x 8 1/2 x 4.

Note—Series 840L and 840P are not furnished with batteries and test leads.

Price \$19.95 net cash or a down payment of only \$6.00 and three monthly payments of but \$5.00 each.



BUY THEM FROM HINDS & EDGARTON, 19 SOUTH WELLS STREET, CHICAGO, ILLINOIS

GROSS CB-55 (CW and PHONE)

For Excellent Results On All Amateur Bands—Fone or CW.
(1.7, 3.5, 7, 14 and 30 MC.)

The CB-55 RADIOTELEPHONE and telegraph transmitter offers the user one of the finest units of its kind at an unheard of price, employing the latest circuits and beautiful workmanship. The use of the new T-20's in the output stage assures the user the possession of a commercial looking installation of a real power output and broadcast station quality.

The CB-55 will give fine results on the 1.7 MC, 3.5 MC, 7 MC, 14 MC, and 30 MC bands. Inputs of 85 watts can be used for phone operation. Many amateurs buy the CB-55 particularly for 10 and 20 meter operation.

The CW-55 RF unit, P-55B Power supply, L-40M Modulator unit, FB-55 Rack Frame, 3 high grade surface type milliammeters, meter cords and plugs, power connecting cables and plugs comprise the CB-55 unit.

CW-55 RF unit represents a real achievement in its design and value. It uses two of the new T-20 transmitting tubes in the output stage. They will give output and performance not possible with ordinary receiving tubes.

Inputs up to 100 watts can be put into the final stage, giving the user a unit capable of real output at very low cost.

Tube Lineup: CW-55 RF unit incorporates one 42 as crystal oscillator, one 6L6G Beam Power tube as buffer or doubler and two of the new Taylor T-20's in the output stage.

Coils and Frequency Range: One set of three coils is furnished. They are available for operation on 1.7, 3.5, 7, 14, and 30 MC bands. Extra coils can be purchased. Coils for special frequencies on special order. Operation on 30 MC is accomplished with a 40 meter crystal.

Metering: Four jacks on the front of the chassis for metering all plate circuits and the grid of the final stage. Either the crystal or buffer stage can be keyed.

Connections: A 7 prong plug and socket are used for connecting to the power supply.

Power Supply Requirements: Filament voltages, 6.3 at 2 amperes, and 7.5 volts at 3½ amperes. Plate voltages for crystal and buffer stages can be 350 to 550 volts. Plate voltage for final stage can be 400 to 750 volts.

General: The CW-55 RF unit is furnished with a heavy gauge, completely drilled chassis, finished with a very fine shrivel lacquer. The size is 17" long, width 10", height 3½". All components throughout are of finest quality such as Cardwell variable condensers, Aerovox and Sangamo mica condensers, I.R.C. Resistors, etc.

Output: Power outputs up to 80 watts can be realized with the CW-55. As an exciter unit to drive a larger tube the CW-55 will do a fine job and will drive a stage to 400 watts input.

THE L-40M BEAM POWER MODULATOR AMPLIFIER uses the new 6L6 Beam Power tubes, which deliver an audio output of exceptional quality.

Two input mixing channels are provided. Both channels employ the maximum gain of the L-40 modulator and each one is also equipped with its own pre-amplifying stages. Both these channels have the overall gain of 123 DB for the use of any new type of microphones, such as crystal, velocity, dynamic. Facilities for both mixing and fading have been provided so that it is possible to super-impose voice announcements upon a musical background or vice versa. The mixing controls are of the absolutely non-interlocking type.

A master tone control is provided to attenuate the high or low frequencies as desired.

Overall dimensions of the L-40M are 17" long, by 10" deep, by 3½" high. The heavy gauge steel chassis is finished in a special wrinkle lacquer inside and out. The heavy duty power supply is included and mounted on same chassis.

Output Impedances — 3000, 4500, 6000 ohms secondary will carry 200 mills D.C.

Rated Power Output — 40 watts — 50 watts peak

Frequency Response — 35 to 10,000 cycles within 2 DB variation

Tubes Used — 4-6CS, 1-6N7, 2-6L6, 1-5Z3

Controls — Two mixer gain controls for high gain channels — one tone control

Input Channels — Two high gain at 123 DB — jack for reading plate current

Power Consumption — 125 watts at 115 volts 50-60 cycles A.C.

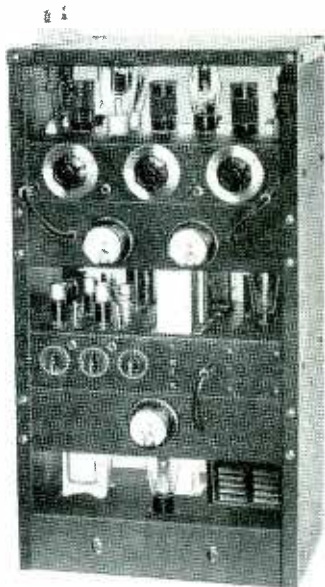
P-55 POWER SUPPLY chassis is of heavy gauge steel, very accurately formed and drilled, and is completely finished in a beautiful special shrivel on the inside and outside.

All components are of very good quality. The transformers, chokes, condensers, etc., were specifically designed for use in this unit. It will be noted that the power transformer is rated at 300 MA and is worked well within its rating. One 83 tube is used as rectifier.

Output: Plate voltage 550 volts at 300 MA. Filament voltage 6.3 volts at 4 amps—7.5 volts at 10 amps.

Size: The overall dimensions are: height, 3½", width 10", length 17".

Power Source: 110 to 115 volts, 60 cycles A.C. Other voltages on special order.



Model	Cash	Down Payment	4 Monthly Payments	6 Monthly Payments	10 Monthly Payments	12 Monthly Payments
CB-55—Kit. Less Tubes, Crystal and Mike.....	\$93.50	\$10.00	\$22.50	\$15.50	\$9.50	\$8.13
CB-55—Kit. With Tubes, but less Mike and Crystal	107.25	15.00	25.25	17.25	10.50	9.00
CB-55—Wired and Tested less Tubes, Crystal and Mike	110.50	15.00	26.25	17.75	10.90	9.35
CB-55—Wired and Tested with Tubes but less Mike and Crystal.....	124.25	19.00	28.80	19.75	12.00	10.25

**OLD
SQUINCH
SEZ:**



Bill Berner, W9VSX, works for Ketcham, Undertakers, Chicago.

W8QXS, G. E. King, lives in Seneca Castle, N. Y.

Hi Hi, OM

Business Man: "What do you do with all these pictures you paint?"

Ham Artist: "I sell them."

Business Man: "Well, name your figure and report Monday. I've been looking for a salesman like you for years."

Bruce Everymonth.

Doctor: "What is a red corpuscle?"

OM Recruit: "A red corpuscle is a Russian non-commissioned officer."

One of the school teachers recently told us about a ham who had spent four years in college studying English and it didn't do him a bit of good. He still ends every sentence with a proposition.



"An apple a day keeps the doctor away—unless you get the seeds in your appendix."

The occasion was the history examination in school and the question "Give an account of the marriage laws of the Greeks." One youth's reply ran as follows: "The marriage laws of the Greeks were something like our own. No Greek man was allowed to marry more than one wife. This system was known as Monotony!"

The Cocklebur.

"Waiter, I'll have one big pork chop with French fried potatoes and I'll have the chop lean."

"Yes, madam, which way?"

Coal Getter.

British Guide (showing places of historical interest): "And it was in this room that Lord Wellington received his first commission."

American Tourist: "How much was it?"



"Marriage is the only lottery worth preserving."

"Every married man thinks he would be rich if he had remained single."

"Don't marry for money — it's far cheaper to borrow it."

"Any man may be able to read his wife like a book but can he shut her up?"

"Many a man does not discover it was anything more than a mere flirtation until she has married him."

"It takes years for a mother to make a man out of her son, and twenty minutes for another woman to make a fool out of him."

CP-60

TRANSMITTER

(BY GROSS)

110 WATTS INPUT

CRYSTAL CONTROL—CW ONLY

CP-60 is a comparatively high powered compact CW Transmitter. Input to the final is 110 watts and the Output efficiency is about 75%. CP-60 consists of the CW-60 R.F. Unit, P-60 Power Supply, F-60 Frame Rack, Meter Panel, Two High Grade Moving Coil Surface Type Meters, Two Meter Plugs and Cords and Connecting Cable with Plugs. Overall dimensions are 24" high, 11" deep, 19" wide.



The CP-60 At WIAPU

"Now for some information on the performance of my New Gross CP-60. Following is a list of some of the stations that I have worked during this first month I have had the transmitter on the air: TF5C, HB9BD, G8FZ, G2XG, SMSWM, PAOXM, K5AA, ON4CN, ZL2OU, FA8DA, PY1DW, G5HH, U9ML, G15QX, ZT6Y, U9ML, LU1JH, D4DIC, HH3L, G12KR, F8ZZ, U3QE, OH6NS, ZT6AY. These stations are only part of those which I have worked, the signal strength was reported R6 in all continents, dx conditions were far from the best."

WIAPU, H. D. Bamford, Dover-Foxcroft, Maine.

MODEL	Cash	Down Payment	6 Monthly Payments	9 Monthly Payments	12 Monthly Payments
CP-60 KIT					
• Less Tubes & Crystal	\$62.00	\$12.00	\$ 8.80	\$6.05	\$4.65
CP-60 KIT					
• With Tubes & Crystal	76.50	16.50	10.75	7.25	5.75
CP-60 WIRED & TESTED					
• Less Tubes & Crystal	79.00	16.50	11.85	8.25	6.25
CP-60 WIRED & TESTED					
• With Tubes & Crystal	93.50	16.50	13.65	9.35	7.25

*Only one set of coils furnished. Specify frequency desired. Extra coils may be had for \$3.00 per set.

BUY YOUR CP-60 FOR CASH OR ON TIME FROM

HINDS & EDGARTON

19 S. WELLS STREET

CHICAGO, ILL.

HAVE YOU SEEN



Have you seen the new Jacobs Feeder Separators made of glass, with hard rubber bushings? For the rapid and efficient construction of 2 wire R. F. feed lines used in conjunction with Hertz antenna systems. Can be rapidly adjusted by means of set screws to give any separation from 1" up to and including 9".

Only \$1.75 for a Half Dozen

The New "MAC" Key

Equipped with the patented "Dot Stabilizer". Fastest key on earth and designed for clean sending at its best. Made by T. R. McElroy, Code Champion of the World. Price only \$9.50. Order yours from Hinds & Edgarton today.



Featherweight Portable Typewriter



Just the thing for your shack table. Smooth running and quiet operating Complete and yet weighs only 7 pounds. Not a toy. It is guaranteed to efficiently do your work and will give a lifetime of service. Only \$39.50 net cash or \$7.50 down payment and six monthly payments of only \$6.00 each. Ask us about any other make.

Just the thing for your shack table. Smooth running and quiet operating Complete and yet weighs only 7 pounds. Not a toy. It is guaranteed to efficiently do your work and will give a



This Standard Signal key is designed to carry heavy currents. All brass with lacquer finish and 3/16" coin silver contacts. Navy type key knob. Only \$2.26 net.

FLASH!

GOOD NEWS

As we go to press - we announce the NEW "SX-17" Super Sky rider. Custom Built - 13 carefully matched Raytheon tubes.

The NEW "SX-17" has two stages of preselection (four gang condenser) and a built in automatic Noise Silencer. Except for the addition of a noise silencer switch, on the front panel, it looks identically like the SX-16 Super. The "SX-17" is also two inches deeper than the SX-16.

The NEW "SX-17" comes to you only one way - WITH crystal and the famous Hallicrafter 12" P. M. dynamic speaker.

The price complete with noise silencer, tubes, crystal and speaker is only \$149.50 net cash. (Or - you may buy it on Hinds "Easy Payment" Plan.) Write us for further details.

HARVEY 60-X (CW ONLY)

80 WATTS INPUT CRYSTAL CONTROL



The 60-X is a four band CW transmitter brought to you in the simplest, most efficient form possible and employs the same RF section and power supply as is furnished with the popular 60-T Transmitter. Critical Amateurs everywhere will vouch for its performance, general ease of operation and consistent dependability. We call your attention to the following outstanding features:

COMPACT AND LIGHT WEIGHT: The complete unit measures only 14" high 19" wide and 10" deep and weighs but 55 pounds, which makes it ideal for cramped quarters or for portable work where size and weight are important factors.

QUICK BAND CHANGE: Two front panel switches shift all circuits in a few seconds when changing bands: no coils or crystals to plug in, no bothersome neutralization.

CRYSTAL CONTROL: The use of Bliley LD2 crystals insures perfect frequency stability. The note is pure DC and a pleasure to copy.

KEYING: For the reduction of interference when necessary or to meet individual requirements, three methods of keying are available—center tap, control grid bias, and suppressor block.

PRICE: The very low price on the 60-X is made possible through the use of a single RK-20 which efficiently performs the work of two or more usual RF stages. Dollar for dollar, watt for watt, the 60-X is the biggest transmitter value offered the Amateur today and is backed by our unconditional six months guarantee.

POWER INPUT: 80 watts on all frequencies.
POWER OUTPUT: 50 watts on 160-80-40 meters—25 watts on 20 meters.

FREQUENCY RANGE: 1600 to 15000 kc.
TUBES USED: One type RK-20 pentode, 3-81V rectifiers.

POWER SOURCE: 115 volts, 50-60 cycles a.c.
POWER REQUIREMENTS: 240 watts.

WEIGHT: 55 pounds.
SHIPPING WEIGHT: 95 pounds.

Model	Cash	Down Payment	6 Monthly Payments	9 Monthly Payments	12 Monthly Payments
60-X Less Tubes and Crystals	\$69.50	\$9.50	\$10.60	\$7.40	\$5.60
60-X Complete with Tubes and 3 Crystals	\$99.50	15.50	14.95	10.35	7.90

HARVEY CT-60 DRIVER OR TRANSMITTER

The CT-60 is a high powered crystal oscillator which may be used either as a TRANSMITTER of 50 watts output or as a DRIVER to excite a following amplifier to inputs of 400-500 watts on CW and 300-400 watts on PHONE. To facilitate frequency change, provision is made for mounting three crystals at the rear of the chassis. Plate and cathode coils are permanently mounted and the output frequency is controlled by two band change switches which simultaneously select the proper crystal and cut in the proper amount of inductance for any given band. A single milliammeter reads the total plate current and provides adequate tuning indication for all circuits.

The CT-60 includes such desirable features as band switching, crystal selection, choice of three keying methods, heavy duty power cable, and provision for modulator connection. Both construction and assembly are of the highest quality and parts bear such well known names as Cardwell, Eby, Hammarlund, Ohmite, Aerovox, etc. Owners of the CT-60 will gladly testify to the efficient operation of the unit.

POWER OUTPUT: 50 watts on the crystal frequency, 25 watts on the second harmonic. **PHONE:** 15 watts in the 160 and 75 meter bands when suppressor grid modulated.

FREQUENCY RANGE: 1600-15000 Kc.

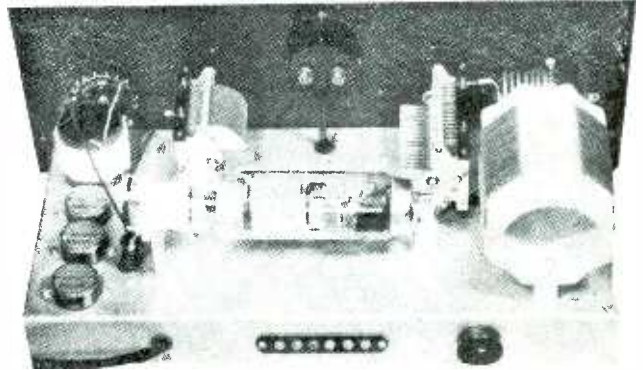
TUBE USED: One type RK-20 pentode.

KEYING: Choice of center tap, control, grid bias or suppressor block methods.

POWER REQUIREMENTS: 1000 volts at 150 ma., 7.5 volts at 3 amperes. Integral voltage divider automatically provides correct screen and suppressor voltages from high voltage supply.

ANTENNA COUPLING: The CT-60 is designed for use with a single wire, matched impedance antenna which clips directly to the plate coil, eliminating network and condenser systems. However, a matching system for single wire feed, as well as a thermocouple ammeter, are available if desired.

CONSTRUCTION: Sheet steel finished in black wrinkle and cadmium plate. The unit measures 7" high, 19" wide and 8 1/4" deep. **NET WEIGHT:** 12 lbs., 5.4 kilos. **SHIPPING WEIGHT:** Domestic—17 lbs., Export—22 lbs. or 9.9 kilos.



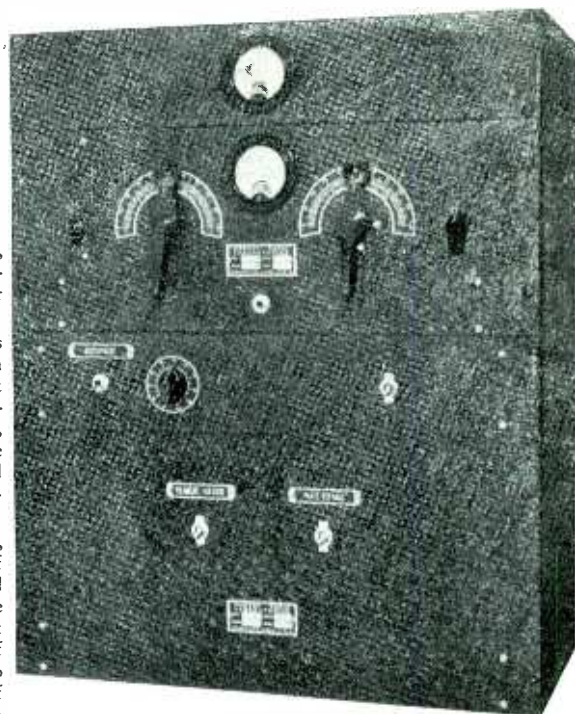
Model	Cash	Down Payment	6 Monthly Payments	9 Monthly Payments	12 Monthly Payments
CT-60 Less Tube and Crystals	\$33.00	\$5.00	\$4.80	\$3.30	\$2.50
CT-60 With Tube Less Crystals	48.00	10.00	6.75	4.60	3.55

BUY IT ON TIME FROM HINDS & EDGARTON, 19 S. WELLS ST., CHICAGO, ILL.

HARVEY 60-T (FONE & CW)

**80 WATTS
INPUT**

**4 BAND OPERATION
BAND SWITCHING
CRYSTAL AND
MULTI-KEYING**



The 60-T is a low cost transmitter of moderate power, embracing many refinements in construction and operation not even to be found in more expensive and higher powered installations.

Previous transmitter design for power outputs of 50 watts usually required at least three stages for operation in several bands. In many instances, band shifting was not often attempted due to the multitude of required adjustments and the length of time involved. In the 60-T, operation has become greatly simplified through the use of a single, crystal controlled RK-20 tube and associated circuits, permitting 50 watts output on the crystal fundamental with excellent stability and efficiency.

To facilitate frequency shift with a minimum of effort, three crystals are mounted permanently at the rear of the RF chassis. Both plate and cathode coils are switched from the front panel, the latter control also selecting the proper crystal for any given band. In practice, two most desirable conditions are thus effected—(1) Elimination of two or more RF stages (2) Instant frequency shift. To QSY on three adjacent bands merely requires a flick of the switches and a slight change in the antenna tap on the tank coil.

To further reduce the necessary operating controls to a minimum with no loss in efficiency, the 60-T is designed to properly transfer energy to the antenna by means of a single wire, low impedance line which taps directly to the plate coil at a pre-determined point. In this manner, efficient three band operation may be obtained from one antenna without the added expense and complications of a matching system.

For phone operation, the RK-20 is modulated in the suppressor grid, permitting a carrier output of 15 watts on the crystal fundamental. The high fidelity audio channel, which includes a 41 modulator, 6C6 speech amplifier and 80 rectifier, is mounted directly under the RF unit and is designed for use with a crystal microphone. Inputs for single or double button carbon types may be had at no increase in price.

The heavy duty power unit employs three 83V rectifier tubes in a bridge circuit and delivers 1000 volts at 150 ma, from a double section filter with Pyranol condensers and also supplies 7.5 volts at 3 amperes for the filament of the RK-20. Toggle switches are provided for both filament and plate circuits, the latter switch being used as "stand by" when receiving.

The entire transmitter is rigidly mounted in a steel cabinet finished in attractive black wrinkle and all chassis are of heavy steel, cadmium plated. One plate meter is furnished as standard equipment. Antenna meter can be supplied at slight additional cost. Due to the compact dimensions, the 60-T may be placed on the operating table as a companion unit to the standard "communication type" receiver, making a most attractive as well as efficient installation. We highly recommend the 60-T to all Amateurs contemplating the purchase of a modern transmitter at moderate cost.

POWER INPUT: 80 watts on all frequencies.

POWER OUTPUT: CW—50 watts on 160-80-40 meters
—25 watts on 20 meters with a 40 meter crystal.

PHONE:—15 watts on 160 and 75 meters.

POWER REQUIREMENTS: 240 watts.

POWER SOURCE: 115 volts 50-60 cycles a.c.

DIMENSIONS: Cabinet measures 23" high, 19" wide
and 11" deep.

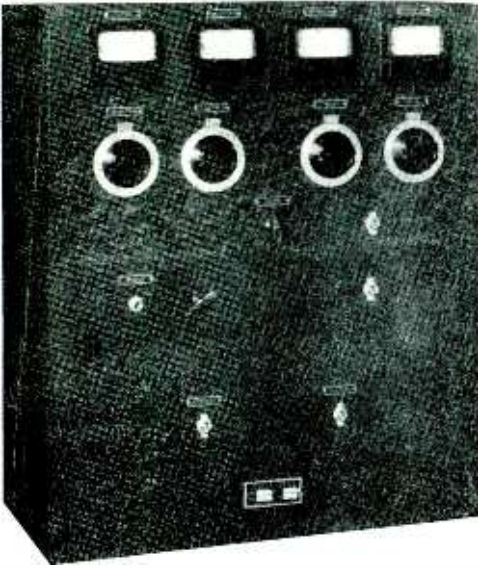
NET WEIGHT: 75 lbs. or 34 kilos.

SHIPPING WEIGHT: 115 lbs. or 52.1 kilos.

Model	Cash	Down Payment	6 Monthly Payments	9 Monthly Payments	12 Monthly Payments
60-T Less Tubes and Crystals	\$88.20	\$12.00	\$13.50	\$9.35	\$7.25
60-T Complete with Tubes and 3 Crystals	118.00	20.00	17.40	11.90	9.10

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HARVEY 80-T (FONE & CW)



**125 WATTS
INPUT**

5 BAND OPERATION

NO NEUTRALIZATION

ONLY 3 TUNED CIRCUITS

**1500 TO 30,000
KILOCYCLES**

4 FULL SCALE METERS

**ANTENNA MATCHING
CIRCUIT**

EXCITATION CONTROL

NEW 6L6 OSCILLATOR

**SEPARATE OSCILLATOR
POWER SUPPLY**

SPECIFICATIONS

POWER INPUT: 125 watts.

POWER OUTPUT: CW—80 watts nominal rating. Actual measured outputs vary from 51 watts on 30 mc. to 90 watts on 1.8 mc.

PHONE:—18 watts nominal rating. Actual outputs vary from 16 watts on 30 mc. to 20 watts on 1.8 mc.

FREQUENCY RANGE: 1500-30000 kc.

RADIO FREQUENCY TUBES: 1-6L6 crystal oscillator, 1-RK-20 power amplifier.

AUDIO FREQUENCY TUBES: 1-6J7, 1-6C5 speech amplifiers, 1-6F6 modulator.

RECTIFIER TUBES: 2-866, 1-83V, 1-5Z4.

POWER SOURCE: 115 volts 50/60 cycles.

POWER REQUIREMENTS: 340 watts.

KEYING: Choice of amplifier center tap, amplifier control grid block or oscillator screen block. External power supply required for last two methods.

ANTENNA CONNECTION: Matching network for single wire antenna provided.

METERS: Four wide scale, square meters are provided which read antenna current, amplifier plate and grid currents and oscillator plate current.

DIMENSIONS: 21" high, 19" wide and 11" deep.

WEIGHT: 85 pounds, SHIPPING WEIGHT: 125 pounds.

The 80-T is a five band, Phone-CW transmitter which meets every requirement for efficient, low cost transmission. The high output of the new 6L6 tube as a crystal oscillator and doubler together with the low driving power requirements of the RK-20 pentode combine to permit efficient operation up to 30 megacycles with but two RF tubes and with ample excitation throughout the entire frequency range of the transmitter.

The complete unit is very compact considering the delivered output and may be conveniently placed on the operating table if desired. The CW power is high enough to work the greatest possible DX yet the operating expense is small. On Phone, the 20 watts will cover thousands of miles on the higher frequencies yet will not disturb the neighboring broadcast receiver.

The transmitter is very easy to tune as there are no complicated controls and no neutralizing adjustments. Four wide scale meters provide instant metering of all necessary tube circuits as well as RF output into the antenna. The RF section is fully described in the next column and represents a real contribution towards more efficient communication.

The suppressor grid modulator of the 80-T consists of a two-stage, high gain amplifier using a 6J7 and 6C5 to drive the 6F6 modulator. This unit contains its own power supply which also provides the negative suppressor bias for the RK-20. The rectifier is a 5Z4. Audio gain is more than sufficient for any of the popular crystal type microphones. A special modulator is obtainable for use with single or double button carbon types at no increase in cost. A toggle switch mounted on the front panel provides for CW or Phone operation at will.

The 80-T power supply is ruggedly constructed and delivers 1250 volts at 150 ma., and 7.5 volts at 5 amperes. A double section filter with oil impregnated condensers furnishes ripple free output with excellent voltage regulation.

The four units which comprise the 80-T are all housed in an attractive cabinet finished in black wrinkle. All sections are interconnected by means of removable plugs permitting easy access to any or all units for inspection.

The CT-80 or RF portion of the 80-T Transmitter employs one of the new 6L6 beam power tubes as an oscillator-doubler to drive a single RK-20 pentode amplifier to 125 watts input. The use of these two high power gain tubes makes possible CW outputs as high as 90 watts and operation on frequencies up to 30 megacycles.

Although plug-in coils and crystals are used, there are but two coils to change for each band with the exception of 14 and 28 mc. The crystal frequency is normally amplified for outputs up to 7 mc. and is doubled for 14 and 28 mc. operation so that three coils are required on the latter two bands. The oscillator-doubler coils are wound on low loss, moulded forms and the amplifier on special, glazed insulante.

A maximum of three tuned circuits, exclusive of the built-in antenna matching network, makes band changing easy and provides quick tuning to any antenna. All circuits are properly shielded to assure complete stability on all bands.

A separate 400 volt power supply is provided for the 6L6 oscillator, as well as an excitation control for maintaining proper excitation regardless of the operating frequency. Two sockets are provided at the rear of the chassis, one for the connection of a suppressor grid modulator, the other for connection to a meter panel reading oscillator plate current and amplifier grid and plate currents. Should three permanently connected meters not be desired, these leads may be connected to a switch or jacks and one meter used for all circuits.

To permit several methods of keying, a terminal strip mounted at the rear of the chassis provides for either center tap keying of the amplifier, control grid block of the amplifier, or screen block of the oscillator. The latter two methods are desirable for break-in operation or to minimize key clicks, and require external bias voltage which may be obtained either from batteries or from a receiver type power pack.

Model	Cash	Down Payment	6 Monthly Payments	9 Monthly Payments	12 Monthly Payments
80-T Less tubes and crystal	\$140.00	\$25.00	\$20.50	\$14.00	\$10.60
80-T With tubes and crystal	\$168.00	\$35.00	\$25.60	\$16.00	\$12.25

BUY IT ON TIME FROM HINDS & EDGARTON, 19 S. WELLS ST., CHICAGO, ILL.

NEW R9+ ANTENNA

Gives You an Increase of Three to Six Times Normal Short Wave Volume Increase

Before attempting to describe the new R9+ Tuned Antenna, other than to say that it will increase weak short wave signal volume three to six times and reduce local noise even more, it seems well to look back into antenna history.

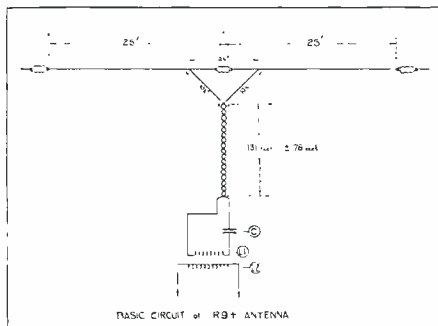
Back in the days before superheterodynes, neutrodynes and t.r.f. receivers of high sensitivity, antennae were always tuned. Such antenna tuning was a vital necessity with receivers using only a crystal detector or a non-regenerative audion bulb at most. Not only was there no sensitivity to spare, but receiver sensitivity was reckoned in terms of volts, not microvolts (millionth of one volt) required to produce a signal audible in headphones.

As regenerative receivers came into use, even though they were capable of almost infinite sensitivity at critical regeneration, receivers were still built so their antenna circuits could be tuned.

In about 1922, A. J. Haynes, assisted by the writer, introduced the Haynes-Griffin one tube regenerator, the first receiver to dispense with antenna tuning for simplicity of operation, it is believed. From then on as multi stage neutrodyne and t.r.f. receivers gained in popularity, antenna tuning was abandoned entirely in broadcast receivers. When one dial receivers came to be marketed, antenna tuning turned from a seemingly unnecessary luxury into positive anathema to receiver engineers.

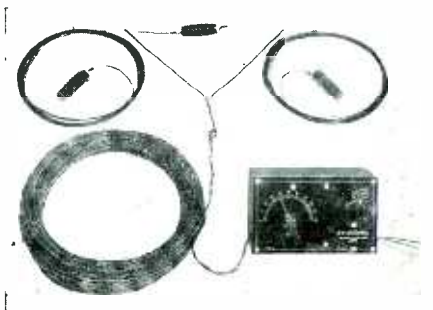
This was, and is, because no two physically similar antennae ever have the same identical electrical characteristics after erection, and hence antenna tuning cannot be ganged with other circuits in a receiver, and two dial sets have now been long out of date. In addition, the same decade saw development of broadcast transmitters from an average of one or two hundred watts power up into the range of tens of kilowatts of power, which meant much stronger signals. Strong signals coupled with highly sensitive receivers made antenna tuning unnecessary—and undesirable in terms of complication of receiver operation and too rigorous requirements in the matter of antenna size and location.

Local noise, seldom appearing in the then used 200 to 550 meter broadcast band, was an inconsequential factor, of no serious moment, even to the average large city radio user.



NEED OF ANTENNA TUNING

But along came short wave development, involving reception of far from initially powerful signals, over distances far in excess of the best broadcast band possibilities. None too happy at best, this new problem proved well nigh insurmountable when to it was added that of local noise interference. Nearby telephones, door bells, electric lights being turned on and



off, and electric motors of all descriptions in home appliances ranging from vacuum cleaners to ice-boxes and oil-burners, played havoc with short wave reception. This is because each of these devices is associated with electric wiring, and when a circuit is closed or broken, an impulse is sent into the wiring, which acts as an antenna and sends it out to be picked up by your short wave receiver. The reason this is more bothersome on short waves than on the broadcast band is two fold. First, the local wiring usually approximately resonates in the short wave bands. Second, your usual short wave entertainment signals are much weaker than are those of your usual broadcast band entertainment stations, and fall well down in receiver and local noise regions.

Because of all this, so called noise reducing antennae have found widespread use in the last several years, and quite recently an attempt has been made in their design to obtain physical sizes that would approximately resonate to short-wave broadcast bands. In these antennae, approximate tuning has been sought by cutting the antennae flat top to a physical length which causes it to resonate at say 6,000 kc. or 49 meters, and again at the 2nd harmonic or 12,000 kc., 25 meters. In some cases, two flat tops have been used together (double double!) to effect resonance at several fundamental and their harmonic frequencies, or wave lengths.

(Continued on next page)

\$8⁸⁵ Net Cash
OR

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(Continued)

Such efforts are embryonic only, and thoroughly undependable, as is proven by Mr. Jones, who puts up the new "Blank" antennae and finds it excellent, while Mr. Smith finds it worthless at his home, although he put it up exactly the same way. Each owner erected his antennae just as specified, and one worked well and one worked poorly. The answer is variation in individual local and terrain conditions which in the second case completely upset the resonance characteristics of the antenna, characteristics predicated upon its physical size, proximity to nearby objects, need of definite flat-top and leadin length, and finally of terrain conditions, varying in a manner imperceptible to the naked eye.

WORKS WITH ANY STANDARD ALL WAVE SET

The writer has given this subject much thought, and been confronted not with the difficulty of tuning an antenna so it would work at maximum efficiency in any location, but of coupling the tuned antenna to a standard all-wave broadcast receiver in such a manner that it would not upset the receiver, and still be coupled sufficiently tight to give a real gain. The problem finally boiled down to trying to find out how to tightly couple two tuned circuits (the antenna and the first circuit of a receiver, for example) without the tuning of one circuit upsetting that of the other.

At this point, what started out to be antenna investigation had gone far afield, but it produced the desired result, plus the believed new discovery of how to relatively tightly couple two tunable circuits without one reacting on the other, and vice versa. Patent applications have been filed upon this invention, as well as upon the whole R9+ tuned antenna system itself.

R9+ COMES ALL SPLICED, SOLDERED AND CONNECTED

The R9+ antenna consists of a doublet 50 ft. long (25 ft. per side), three special insulators, 131 ft. of weatherproof twisted pair noise rejecting transmission line leadin and the tuner and switch box, as illustrated herewith. It comes with all connections soldered and all insulators in place. To erect it, it is merely necessary to tie a rope to each of the two insulators at the ends of the 50 ft. flat top, uncoil the transmission line leadin and hoist the antenna on its supports, which may be poles on a house, eaves of a house, house and garage, house and tree, or two trees. The higher up it is, the better, and the further away from electrical apparatus, such as motors, and auto roads, the better also. The leadin is carried down to a window near the radio, the tuner box pulled in thru the window, its leads fastened to the antenna binding posts of the set, and the job is done. If too much leadin is left over, it can be coiled and placed out of the way, or exactly 78 feet—no more or no less—can be cut off. If a longer leadin is needed, as many extra 78 ft. lengths of twisted pair as are required may be spliced into the original 131 ft. leadin.

GIVES 5 TO 15 DB. AVERAGE GAIN

Considering practical operation, the net benefits obtained have been measured against the best available competition—a widely used double doublet—and found to be as follows:

Kc.		Db.
1,800	- R9 + antenna up	+ 15.6
4,200	- R9 + antenna up	+ 4.74
6,200	- R9 + antenna up	+ 12.0
7,300	- R9 + antenna up	+ 4.5
9,000	- R9 + antenna up	+ 10.9
12,000	- R9 + antenna up	+ 9.6
14,000	- R9 + antenna up	+ 8.6
15,000	- R9 + antenna up	+ 10.5
18,000	- R9 + antenna up	+ 3.5

These figures show three things—the non-uniformity of the simply semi-tuned antenna against which the R9+ was compared and tested, its poor performance on the short wave broadcast bands for which it was presumably designed, and the outstanding superiority of the R9+ tuned antenna.

In practical reception, the R9+ gave volume three to six times greater on short waves than that obtainable from the double-doublet against which it was compared. This audible increase in volume of three to six times on short wave broadcast and amateur bands results in reception of signals so weak as to be unheard on other antennae, and coupled with the noise elimination benefits of the low impedance noise rejecting leadin, plus ability to tune the antenna exactly to any wave length between 9 and 200 meters, is of inestimable value.

GIVES PRACTICALLY COMPLETE NOISE ELIMINATION

The direct noise elimination benefit of the R9+ tuned antenna is initially equal to that of competitive noise reducing antennae. In practical use it is much greater, due to the longer leadin of 131 ft., permitting antenna flat-top placement well outside local noise fields, to the selective noise rejection attendant upon its tuning, and finally to the 5 to 15 db. signal volume increase, which effectively drops local noise 5 to 15 db. below that obtainable with any other antenna available.

The tuner box contains three balanced non-reactive coupling transformers, the antenna tuning condenser, and the five position selector switch. Three positions of the switch select the three balanced coupling transformers for different wave lengths, the fourth feeds the doublet transmission line directly through the tuning condenser to the receiver, and the fifth position cuts off one-half of the antenna to connect it to the antenna for broadcast reception.

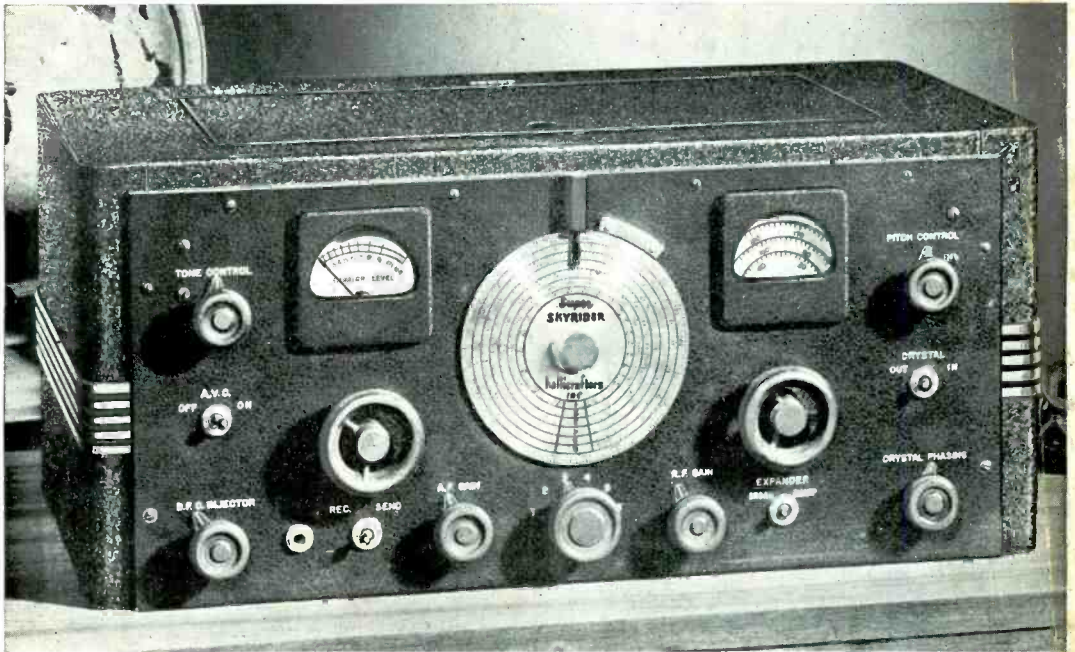
This switching arrangement provides any desired type of antenna for broadcast band or short wave reception, from a fully tuned antenna to simply the usual noise reducing doublet, and finally, a simple L antenna. It is not tuned for broadcast band reception simply because physical dimensions would be excessive, and high power, relatively strong stations and little local noise on the broadcast band do not justify such extra complication and bulk.

EASY TO OPERATE AND NON-CRITICAL

In operation, once erected and tuner box leads connected to antenna binding posts of any all-wave receiver, short wave operation consists only in initially selecting that dial setting, which in conjunction with one of the four switch positions, gives greatest volume on any short wave band. Readings noted down, it is only necessary to reset for maximum results on this band, and similarly on all other short wave bands after noting best settings for each short wave band. It is not necessary to reset the tuner dial for each different station but to only once set tuner and switch knobs for loudest signals or greatest R-meter deflection, on the 16, 19, 25, 31 or 49 meter broadcast bands. In extreme DX-ing, individual station tuning will improve volume a little, however, practically equal results are obtained by one initial setting for the desired band.

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HERE'S THE ONE THEY ALL RAVE ABOUT...



NEW 1938 "SX-16" SUPER SKYRIDER

Here is a receiver tuning from 5 meters to the top of the broadcast band, with high sensitivity on all amateur bands (not merely the 20 or 10 meter band); wide range, variable selectivity (single signal razor sharpness to broad high fidelity); an effective, efficient band spread that would equal or better the standards set by the A.R.R.L. Handbook; improved image and signal to noise ratio, and finally, an "S" meter that will work on weak signals.

1938 Hallicrafters Super Skyrider		Cash	Down Pay't.	6 Mo.	9 Mo.	12 Mo.
New	S-16 SUPER Less Speaker, less Crystal	99.00	18.00	14.25	9.65	7.40
New	S-16 SUPER With Speaker, less Crystal	111.00	20.00	16.10	10.95	8.35
New	SX-16 SUPER Less Speaker with Crystal	111.00	20.00	16.05	11.00	8.50
New	SX-16 SUPER With Speaker and Crystal	123.00	22.00	17.80	12.10	9.10

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