# hallicrafters

## COMMUNICATIONS EQUIPMENT

DESIGNED TO GOVERNMENT SPECIFICATIONS

## the hallicrafters inc.

# New 1941 Super Skyrider SX-28

There is a definite reason for Hallicrafters supremacy in the amateur communications field. The same reason that made THE HALLICRAFTERS the "world's largest builders of amateur communications equipment"—that reason is top quality performance at lowered prices.

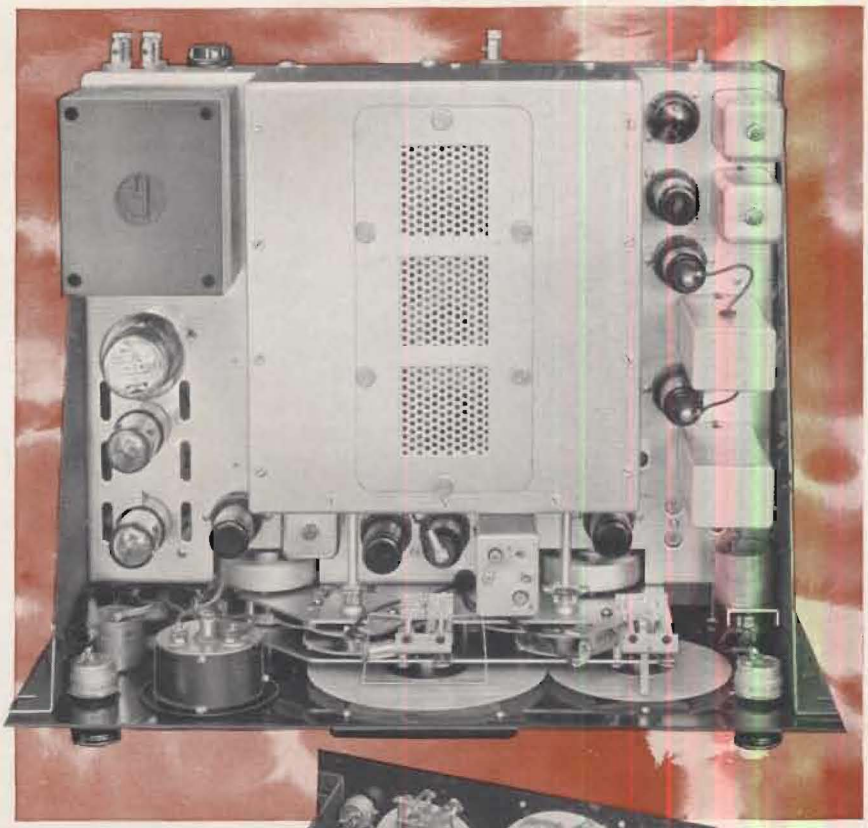
The new 1941 Super Skyrider Model SX-28 sets a new high in quality performance at a moderate price. This 15 tube, 6 band communications receiver delivers praiseworthy results no matter what the operating circumstance. Each control performs a definite function that contributes to the outstanding reception capabilities of the unit, and all the controls are conveniently arranged for effortless tuning. Model SX-28 has an image ratio of 45 to 1 at 28 mc.—350 to 1 at 14 mc., and a proportionately increasing ratio as the frequency is lowered. While the two RF stages are principally needed to obtain such image ratios, they also perform two other useful functions —more favorable signal noise ratio and increased selectivity. The IF Amplifier has been designed for permanency of adjustment under conditions of extreme changes in temperature and humidity as well as unusual mechanical vibration.

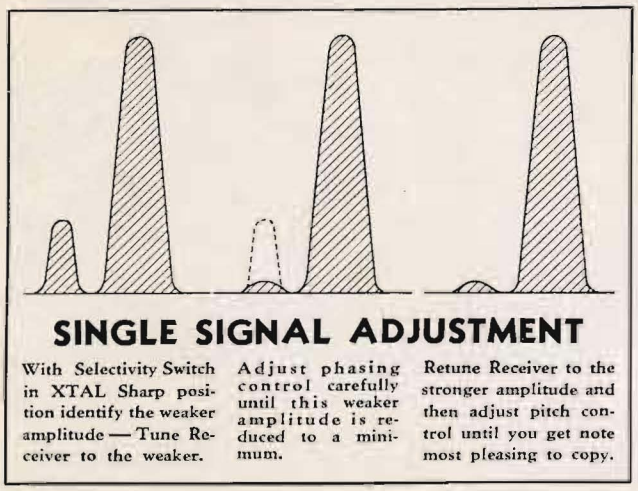



**USED BY 33 GOVERNMENTS**

## FEATURES OF THE SX-28

15 Tubes—Two Stages preselection —Calibrated band-spread inertia controlled—Micrometer scale tuning inertia controlled—Tone and AC On-Off—Beat Frequency Oscillator—AF Gain—RF Gain—crystal phasing — adjustable noise limiter — send-receive switch—AVC-BFO switch—Bass boost switch—Phono jack—80, 40, 20 and 10 meter amateur bands calibrated—Wide angle "S" meter—Band pass audio filter — Improved signal to image and noise ratio—Push-pull high fidelity, audio output —6 step wide range variable selectivity—Improved headphone output.





### SINGLE SIGNAL ADJUSTMENT

With Selectivity Switch in XTAL Sharp position identify the weaker amplitude — Tune Receiver to the weaker.

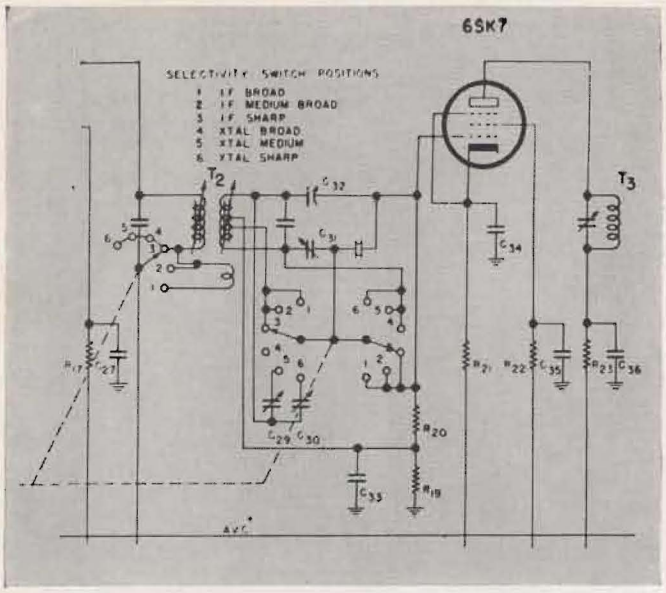
Adjust phasing control carefully until this weaker amplitude is reduced to a minimum.

Retune Receiver to the stronger amplitude and then adjust pitch control until you get note most pleasing to copy.

It is extremely simple to attain single signal reception with the SX-28. First, turn on the BFO to the desired Beat Note and turn the selectivity switch to the XTAL SHARP position. Pick a good solid CW signal, preferably a commercial station because a commercial is likely to stay on long enough for you to complete the phasing adjustment for single signal reception.

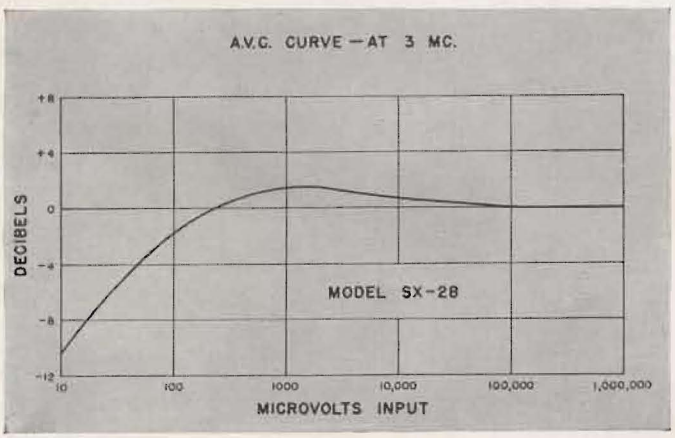
You will find on tuning across this signal that it has two amplitudes. Tune first to the weaker of these two amplitudes. Now, turn the PHASING control until this weaker of the two amplitudes is reduced to a minimum. (If the weaker amplitude appears on the right the above procedure still holds.) Then tune to stronger of the two amplitudes and adjust the BFO control to a tone most pleasing to you. This adjustment for single signal selectivity will hold with no further adjustment unless you change the phasing control.

## CRYSTAL FILTER CIRCUIT



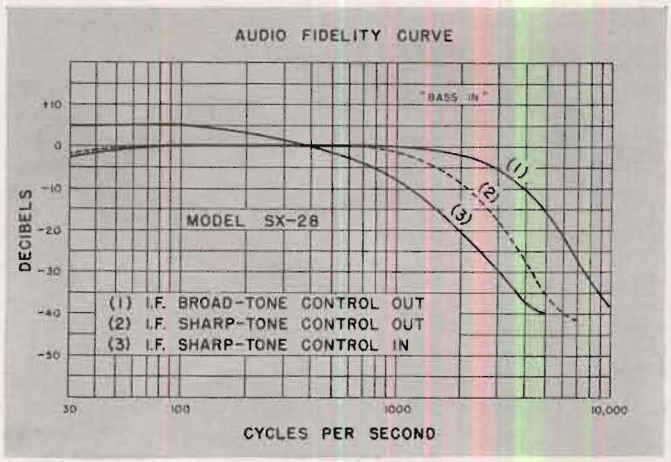

In positions 1, 2, 3 the crystal is short circuited. In position 4 the short across the crystal is opened and the iron core in the secondary of the transformer is adjusted for Broad Crystal Action and at this point is accurately tuned to the crystal frequency. Due to the close coupling of the secondary crystal, the sharply rising resonance curve of the crystal causes, in contrast, a sharply falling resonance curve in the secondary. The combined action of these two characteristics results in a relatively broad resonance curve for the CRYSTAL BROAD selectivity setting. In the MEDIUM CRYSTAL No. 5 position, $C_{29}$ is adjusted for selectivity midway between the BROAD and CRYSTAL SHARP settings. In position 6, or CRYSTAL SHARP, the trimmer $C_{30}$ is adjusted for the sharpest crystal action. Under this condition, the Secondary is slightly detuned from the resonant crystal frequency sufficiently so that its resonance curve is not greatly affected by the crystal but still coupled tightly enough so that it can transfer energy to the crystal circuit. When this point is reached it is indicated by a rise in the output. Two such points of increased output will normally occur—one for each adjustment of the secondary on either side of the resonant frequency of the crystal.

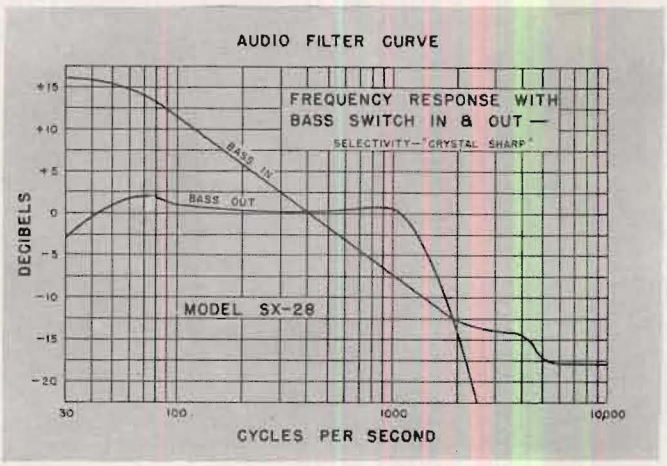
## A.V. C. CURVE—AT 3 MC.




## AVC ACTION

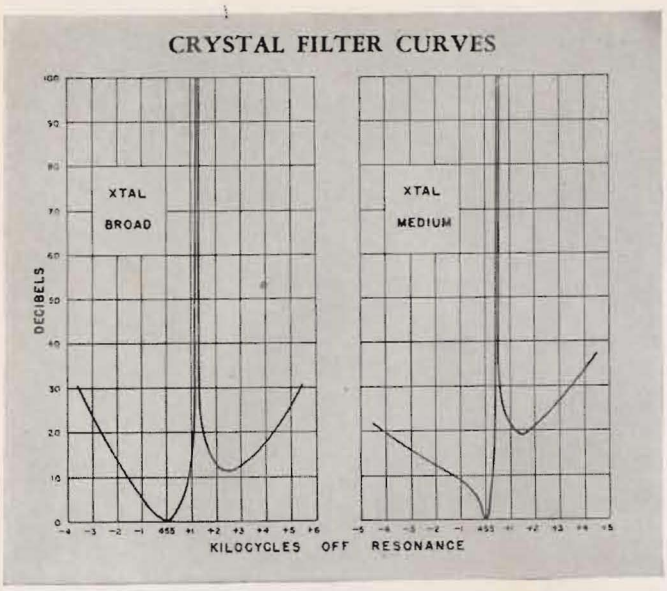
A double AVC system is used. The RF and mixer tubes are operated by the broadly tuned carrier coming through only three tuned IF circuits. The final signal, however, passes through six-tuned IF circuits. As a result, when the signal is slightly detuned, the receiver output has dropped considerably while the AVC action has dropped but very little. This results in a reduction of between-station noise and a more sharply defined aural tuning action.

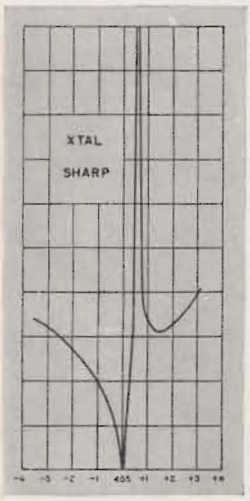



## THE AUDIO AMPLIFIER

The second or output stage of the audio amplifier in the Model SX-28 receiver uses two 6V6GT tubes connected in push-pull. These tubes are driven by the 6SC7 double triode. One of the triode sections of the 6SC7 tube is used as the inverter to the 6V6GT tubes. A portion of the signal from the plate circuit of the first 6SC7 triode is fed to the grid of the other 6SC7 triode Section, thereby giving two output voltages in opposite phase suitable for exciting the push-pull 6V6GT output amplifier.

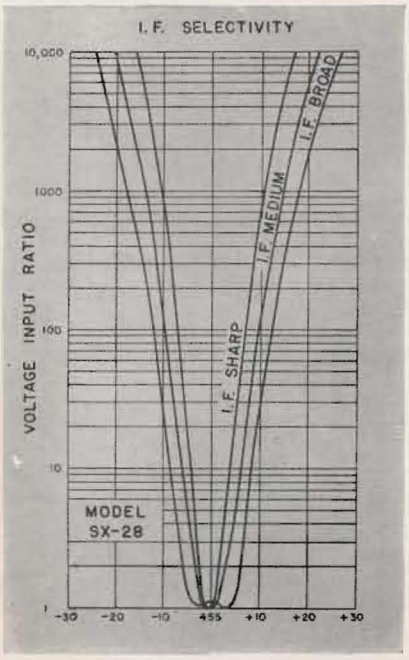



The CRYSTAL FILTER and holder are wired directly into the receiver and do not plug in as heretofore. In this manner exceptional crystal filter action is obtained because of the elimination of the capacity and losses of a socket. So mounting the crystal prevents possible change in polarity which would occur if the crystal were improperly inserted in the circuit. The size of the crystal has been carefully determined to allow the BROAD CRYSTAL position to tune as broadly as possible. The capacity of the crystal holder has been reduced to a minimum through the use of a specially designed polystyrene holder.

**SELECTIVITY CURVE**

will show, graphically, how the control trims the width of the signal so that what interference might be present in the signal's skirts or sidebands is effectively clipped off. Should an interfering signal lap over into the desired signal, adjustment of the SELECTIVITY control will reduce that interference.




**KILOCYCLES OFF RESONANCE**

Please once more refer to the SELECTIVITY CURVE and recognize the fact that with the control set in the BROAD IF position, the signal proper and all its parts, which are combined in the side bands, or skirts, will be passed to the 2nd detector, audio amplifier, and then Speaker. As the selectivity of the receiver is increased from BROAD IF to XTAL SHARP, the gate, or admittance path, is so narrowed that only the main portion of the signal is allowed to pass through. This fact and its effect on the quality of reproduction is readily appreciated by listening to a signal and noting the reduction in higher frequency response in the more selective settings of the switch.

## SPECIFICATIONS

| Tubes: | |
|---|---|
| 1—1853 | 1st RF Amplifier |
| 1—6SK7 | 2nd RF Amplifier |
| 1—6SA7 | HF Oscillator |
| 1—6SA7 | 1st Detector-Mixer |
| 1—6L7 | 1st IF Amplifier-Noise Limiter |
| 1—6SK7 | 2nd IF Amplifier |
| 1—6B8 | 2nd Detector and S meter tube |
| 1—6B8 | AVC Amplifier |
| 1—1853 | Noise Amplifier |
| 1—6H6 | Noise Rectifier |
| 1—6J5 | Beat Oscillator |
| 1—6SC7 | 1st Audio Amplifier |
| 2—6V6GT | Push-Pull Output Amplifiers |
| 1—5Z3 | Rectifier |

Power Consumption — at 117 volts — 60 cycles — 138 watts.

Power Consumption — DC operation — 18 amp. at 6 volts or 108 watts.

Power Output—8 watts undistorted.

Sensitivity—(for .05 watts output) Bands 1 to 5—2 MV and under; 6th band 4 MV.

| | 2x | 1000x |
|---|---|---|
| Selectivity—IF broad (high fidelity) | 12 kc | 36 kc |
| IF Sharp | 4.1 kc | 22 kc |

Frequency Range RF—Note: These are the actual frequencies covered corresponding to nominal figures indicated on the front panel.

| | | | |
|---|---|---|---|
| 550 | to | 1,620 | kilocycles |
| 1.5 | to | 3.1 | megacycles |
| 2.9 | to | 5.9 | megacycles |
| 5.75 | to | 11.5 | megacycles |
| 10.3 | to | 21.5 | megacycles |
| 20.4 | to | 42 | megacycles |

Frequency response AF—audio filter out Broad IF —tone control high—70 to 3000 cycles—2½ DB.

Speaker Output Impedances—5000 and 500 ohms

Intermediate Frequency—455 kc.

Table cabinet dimensions—20½" long x 10" high x 14¾" Deep.

Relay Rack dust cover dimensions—14¾" deep x 17⅜" long x 8¾" high.

Panel dimensions—19" x 8¾".

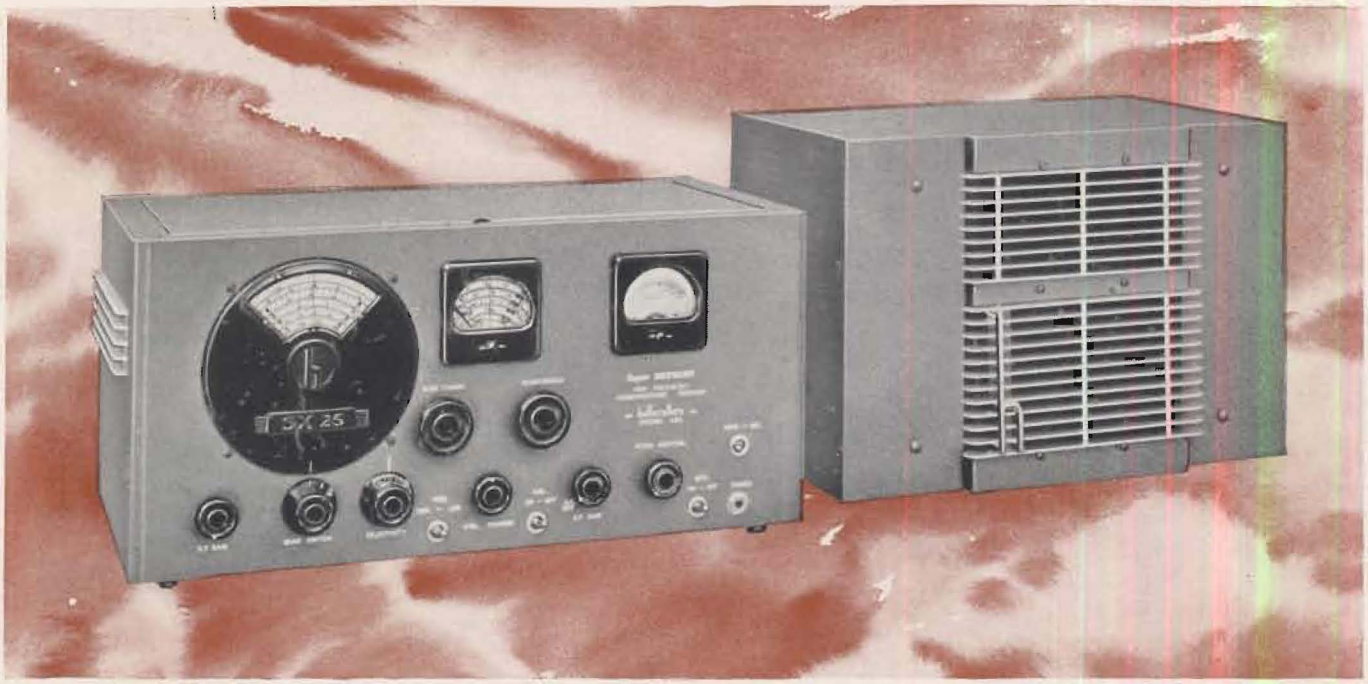
Chassis dimensions—17⅜" x 13½".

Weight—(unpacked)—75 lbs.—packed 87 lbs.

The MODEL SX-28 Receiver with crystal and tubes, less speaker
(SKYER) NET ..... **$159.50**

Hallicrafters Jensen bass-reflex enclosure including 12" speaker 30" high—16" deep—22½" wide—Model R12 (SPTWE) **$29.50**

Hallicrafters Jensen bass-reflex enclosure 8" speaker 23½" high—1¼" deep—17½" wide—Model R8 (SPEIG) **$19.50**




## SX-25

Embodying every worthwhile advancement that has been made in the communications field, the engineers of the Hallicrafters assure the user of the SX-25 the complete answer to good reception requirements.

The SX-25 tunes from 540 kc. to 42 mc. in 4 bands. The frequency coverage per band is as follows: Band 1—540 kc. to 1,700 kc.: Band 2—1.7 mc. to 5.1 mc.: Band 3—5.0 mc. to 15.7 mc.: Band 4—15.2 mc. to 42 mc.

## SPECIFICATIONS OF THE SX-25

Twelve tubes—2 stages of preselection—Separate calibrated bandspread dial for the 10, 20, 40, and 80 meter amateur bands provides frequency meter tuning—Compensation in oscillator circuit for frequency stability—Automatic noise limiter—Six-step variable selectivity covering wide range from high fidelity to extreme CW crystal—S meter calibrated in "S" and "DB" units—Push-pull output stage furnishes 8 watts of audio—Front panel controls: RF Gain, Selectivity Switch, Crystal Phasing, Audio Gain, Pitch Control, Main Tuning Control, Bandspread Tuning Control, ANL Switch, Hi-lo Tone, Send-Receive Switch and BFO Switch. External provision for: Break-in Relay; Headphones: 5000 or 500 ohm output: Single Wire or Doublet Antenna—Laboratory checked, piezo quartz crystal included as standard equipment. Ten-inch heavy duty PM dynamic speaker in matching metal cabinet included as standard equipment—Dimensions of receiver cabinet only: 19½" long, 9½" high, 11⅛" deep—110 volt 50-60 cycle AC operation, DC operation socket provided for battery or vibrapack.

**COMPLETE WITH SPEAKER, CRYSTAL AND TUBES $99.50**


## SX-24

The Model SX-24 represents the best value in the communications field. A 9 tube, 4 band receiver with a frequency range of from 540 kc. to 43.5 mc. as follows: Band 1—540 kc. to 1.730 kc.: Band 2—1.7 mc. to 5.1 mc.: Band 3—5.0 mc. to 15.7 mc.: Band 4—15.2 mc. to 43.5 mc.

## SPECIFICATIONS

Controls are: RF Gain, Band Switch, Selectivity AVC, Main Tuning, Tone, Crystal Phasing, Band Spread, ANL, AF Gain, Pitch Control, BFO OFF-ON, and Send Receive. Frequency stability throughout a wide range of line-voltage humidity and temperature variations. One stage of preselection. Single-signal crystal filter standard equipment. DC operation socket—battery or vibrapack. Complete with 9 tubes and crystal (no speaker) (SKYFY) ..... **$69.50**

### PM-23 DYNAMIC SPEAKER

A 5000 ohm ten inch PM Dynamic speaker with transformer housed in a crackle finish battleship gray sturdily constructed cabinet. Shipping weight 22 pounds.
Jensen-Hallicrafters price (SKYVO) ..... **$12.00**

# the hallicrafters inc.

# Frequency Modulation / Amplitude Modulation

## (MODEL S-27)

The first general-coverage U. H. F. communications receiver to incorporate Frequency Modulation reception. Amplitude modulation has been the accepted and usual form of impressing intelligence upon the transmitted radio signal. When a radio signal is amplitude modulated, the modulating or audio signal—speech or music—is combined with the radio signal which causes it to alternately increase and decrease in AMPLITUDE, these variations taking place at a frequency, or rate, determined by the frequency of the modulating sound.

By direct contrast, a frequency modulated signal consists of a carrier which remains CONSTANT IN AMPLITUDE. When modulation takes place under this system the frequency, and not the amplitude, of the radiated signal is varied—the rate, or speed, of variation being determined by the frequency of the audio modulating signal. In addition, the stronger the audio modulating signal the greater will be the change in frequency of the radio signal. Under such an arrangement the band width (that through which the carrier of the FM signal is swing) is determined by the maximum shift in frequency which is occasioned by the amplitude, but not the frequency of the modulating signal.

In general, a frequency-modulation receiver has practically all the same components that an amplitude modulation receiver has with the exception of the detection systems.


## SPECIFICATIONS

This Frequency Modulation communications receiver covers 3 bands: 27 to 46 mc: 45 to 84 mc: 81 to 145 mc. Switch changing from FM to AM reception. Acorn tubes in RF and converter system. High gain 1852 tubes in Iron Core IF stages. Beam power tubes in AF amplifier. Controls are: RF gain control, Band switch, Antenna trimmer, IF selectivity control and power switch, Volume control, Pitch control, Tone control, S-meter adjustment, AVC on-off switch, Send-receive switch, phone jack, amplitude of frequency modulation switch. 15 tubes. 110 volt 50-60 cycle AC Dimensions: 19" long, 9" high, 14" deep. Shipping weight 75 lbs.

MODEL S27 Am/Fm Receiver complete with tubes (FREMO) ..... **$175.00**


# FM/AM Model S-31

High Fidelity Tuner for Frequency Modulation and Amplitude Modulated Broadcast Reception.

Now you can hear music actually as the band plays it, then you will know why frequency modulation is becoming so popular. The noise and static-free reception obtained is much superior to that of the old accepted standard of amplitude modulation.

The No. 1 band covers all frequencies used by amplitude modulated broadcast stations. The dial reads kilocycles by the addition of a zero to the numbers shown. Thus, 100 would be 1000 kilocycles.

The No. 2 band covers frequencies used by high fidelity frequency modulated broadcast stations. The dial is calibrated in megacycles.

Fundamentally, amplitude modulation (AM) consists of adding and subtracting power from a carrier in accordance with the modulating voice or music. With frequency modulation (FM), however, the carrier is kept constant in amplitude and is shifted back and forth in frequency in accordance with modulation. The circuits involved in the reception of the two types are much different—usually requiring two separate receivers. The Model S-31 tuner combines both circuits and changes from FM to AM with the bandswitch.

To appreciate the full capabilities of this tuner a high fidelity audio system should be incorporated. A high fidelity audio system consists of not only a high fidelity amplifier but also a high fidelity speaker system.

## SPECIFICATIONS

8 tubes—Frequency range, band one: 540 to 1650kc., band two: 40 to 51mc.—Power output 130 milliwatts undistorted—Power consumption 120 watts—Controls, Band switch, Phone switch, Main tuning, Audio gain, Tone Control, "S" Meter adjustment — Operates on 115-125 volts, 60 cycles AC.

Model S31 Tuner. Complete with 19"x8¾" rack panel, metal cabinet and tubes.
(TUNER) ..... **$69.50**

Model S31A. High fidelity, 25 watt amplifier, complete with cabinet and tubes.
(TRAAM) ..... **$49.50**

## THE SKYRIDER (Model SX-23)

We have achieved in the SKYRIDER model SX-23, new standards of communications receiver performance—in selectivity, low image ratio, improved crystal action, and numerous other qualifications which have been prerequisites of the receiver you have wanted.

The SX-23 is a truly fine example of outstanding engineering design, offering for the first time compensated frequency stability, eliminating drift. The main feature of the new band-spread system is its reset accuracy. There is no bandset dial to fuss with. The same station always comes in at the same place on the dial. The band indicator harmonizes with the S-DB meter, and is direct reading. Tubes — 3-6SK7, 1-6SA7, 2-6SJ7, 1-6SQ7, 1-6B8, 1-6H6, 1-6F6G, 1-80. Controls, RF gain, pitch control, tone control, selectivity switch, ANL switch, band switch, send-receive switch, audio gain, crystal phasing control, main tuning control and phone jack. Cabinet size—19″ long, 9¼″ high, 12½″ deep. For operation from 110 volt 50-60 cycle AC. For 110 volt AC operation from 6 volts DC use No. 302 Electronic Converter.

The SKYRIDER 23 (Model SX-23) — Complete with tubes and crystal. Shipping weight 56 lbs. **$115.00**

The SKYRIDER 23 (Model SX-23) — Complete with tubes, crystal, 10″ PM 23 Speaker **$127.00**

Extra for Univ. 110-250 volts, 25-60 cycles **5.00**

## FEATURES

8 bandswitch position. Bands 1-2-3-4 cover 545 kc. to 44 mc. continuously. Bands 5-6-7-8 are pre-set band-spread for the amateur 10, 20, 40 and 80 meter bands. —Six-step variable selectivity—Improved noise limiter circuit — Frequency stability, both from temperature humidity effects and from line voltage variations.— "Venetian Blind" dial, band indicator and S-DB meter —Completely shielded crystal circuit and phasing control—permeability tuned coil—with separate shield compartment for crystal.

## THE SKYRIDER 5-10 (Model S-21)

The Skyrider "5-10" is a two band, 8 tube superheterodyne receiver designed to give the maximum in performance throughout its ultra high frequency tuning range.

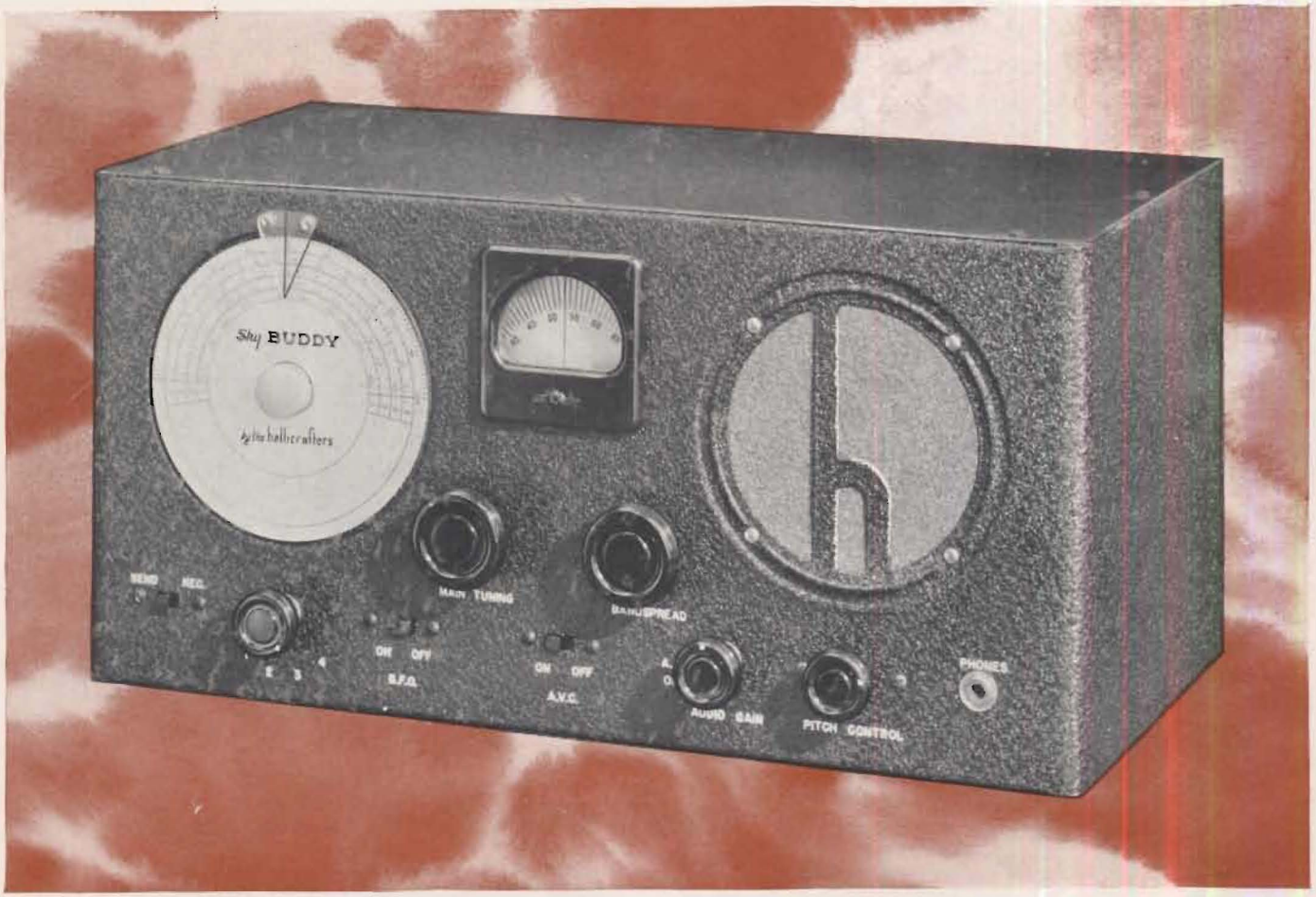
Covers the radio spectrum from 27mc. to 68mc. in two bands with a degree of sensitivity and selectivity that is unparalleled. Band 1—27mc. to 42mc. Band 2—40mc. to 68mc. Sensitivity of BETTER THAN 1 MICROVOLT. Socket on chassis for 6 volt mobile operation with the addition of a vibrapack or other suitable power supply. IF amplification — 1600kc. Tubes used — one each 1852, 6L7, 6J5, 6K7, 6P7G, 6Q7G, 6F6G, 6H6, 80. Built-in speaker.

Terminals are provided for an SM21 meter. For operation from 110 volts. 50-60 cycles, AC. Dimensions: 18½″ x 9¼″ x 8½″ high.

The SKYRIDER 5-10 (Model S-21) — Complete with tubes and speaker. Shipping weight 34 lbs. (SKYRI) **$69.00**

SM-21 carrier level meter **10.00**

For 110 to 250 volt operation, 25 to 60 cycles, additional cost **5.00**




# The Sky Buddy (S-19R)

The Hallicrafter engineers designed the Sky Buddy with the thought of producing an amateur receiver that could be sold at a moderate price yet produce superior performance for that type of receiver. The Sky Buddy covers everything on the air from 44mc. to 545kc., including the 10, 20, 40, 80 and 160 meter amateur bands. It now employs the same electrical bandspread system used in the higher priced Hallicrafter models. In no other similar receiver but the Sky Buddy can be found such extremely smooth and satisfactory electrical bandspread action. The stator plates are an integral part of the main condenser and the separate rotor sections are driven by a gearless mechanism through the separate bandspread knob. The Sky Buddy is equipped with conveniently arranged controls enabling the operator to realize the maximum in performance.

Read and check all the outstanding features and carefully compare the Sky Buddy with communication receivers selling at anywhere near this moderate price. When you operate, and know the exceptional sensitivity and selectivity of this unit you too will agree to its superior performance, and amazing ease of operation even under the most trying conditions.

## SPECIFICATIONS

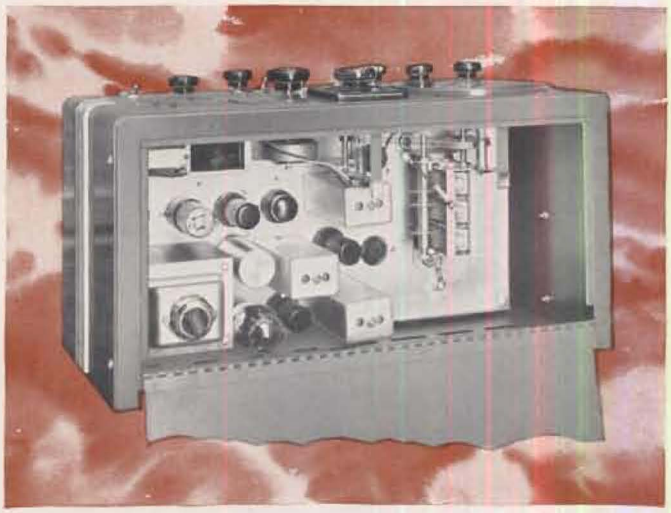
- Continuous Coverage, 44MC to 545KC.
- 10 Meter Band with uniform Sensitivity over the Entire Band.
- Four Bands.
- Electrical Band Spread.
- Illuminated Band Spread Scale Covering 360°.
- Built-in 5" Dynamic Speaker with Floating Rubber Supports.
- Beat Frequency Oscillator.
- Built-in Line Filter.
- Six Tubes with 8 Tube Functions.
- 6K8 Converter Tube Uses Separate Filter Supply for Greater Stability.
- Band Switch.
- AVC Switch.
- Send-Receive Switch.
- Baked Black Crackle Cabinet 17½" x 8½" x 8½".

Amateurs Net Price (SKYBU)..... **$29.50**

# THE 1941 SKY CHAMPION

We believe that, without exception, the new 1941 Sky Champion Model S-20R, represents the best value ever offered in the communication field. This 9 Tube 4 band receiver tunes from 540kc. to 44mc.; Band one 540kc. to 1,770kc. Band two 1.72 mc. to 5.4 mc. Band three 5.3 mc. to 15.7 mc. Band four 15.2 mc. to 44 mc.

Has all the essential controls for good amateur reception as follows: RF gain, four position Band Switch, AVC switch, Main Tuning, BFO switch, send-receive switch, Audio Gain and pitch control. The tube line-up is as follows: 6SK7 RF amplifier, 6K8 first detector-mixer H.F. Oscillator, 6SK7 first IF Amplifier, 6SK7 second IF Amplifier, 6SQ7 second detector, AVC first stage of audio, 6F6G second audio output stage, 6H6 automatic noise limiter, 6J5GT heat frequency oscillator, 80 rectifier.



## SPECIFICATIONS

9 tube, complete coverage (545kc. to 44mc.) in four bands.
Automatic noise limiter.
AVC switch.
Standby switch.
Inertia bandspread tuning.
Separate electrical bandspread.
Beat frequency oscillator.
Battery-vibrapack, DC operation socket.
Dimensions 18½" long, 8½" high, 9⅜" deep.

The Sky Champion (model S-20R). Shipping weight 32 lbs. (SKYCN) ..... **$49.50**

Extra for Univ. 110-250 volts, 25-60 cycles ..... **5.00**

SM-20R Carrier level meter ..... **10.00**

# THE SKY TRAVELER (Model S-29)

A portable designed to communications receiver tolerances. Take it with you wherever you go or, use it at home. The Sky Traveler is truly a universal receiver—operates on either 110 volt AC or DC or from its self-contained batteries. Mounted in an attractive black crackle finished aluminum cabinet with rounded corners.

Frequency coverage from 542kc. to 30.5mc. (553 to 9.85 meters) on four bands. Self-contained antenna with high gain coupling circuit provides truly remarkable reception throughout its tuning range.

## SPECIFICATIONS

FEATURES:

1—Operates on either 110/125 volts AC or DC and in addition from its self-contained batteries.
2—Electrical bandspread.
3—1.4 volt tubes used throughout.
4—Battery life prolonged through a self-contained charging circuit.
5—Automatic noise limiter.
6—Self-contained collapsible antenna which can be extended to nearly 3 feet.
7—An RF stage used on all bands.
8—Sensitivity below two microvolts on all bands.
9—High gain antenna coupling circuit for maximum antenna energy transfer.
10—Approximate battery life 100 hours.
11—Neon lamp to indicate tubes are lighted.
12—Permeability tuned RF and IF circuits.

FREQUENCY RANGE:
Band 1—542 to 1490 kc., Band 2—1.43 to 4.35mc., Band 3—4.12 to 11.9mc., Band 4—11.26 to 30.5mc.

TUBE LINEUP:
1—1T4 RF Amplifier; 1—1R5 Mixer; 1—1P5-GT 1st. IF Amplifier; 1—1P5-GT 2nd. IF Amplifier; 1—1H5-GT 2nd. Detector, AVC, 1st. audio; 1—3Q5-GT Output Amplifier; 1—1G4-GT Beat Oscillator; 1—1G4GT Noise Limiter; 1—50Y6GT Rectifier.

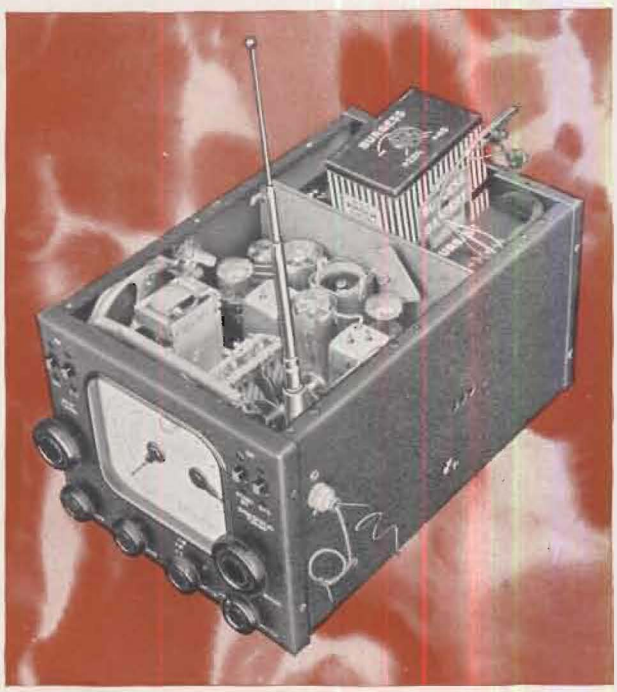
CONTROLS:
Main Tuning, Bandspread, R. F. Gain, A. F. Gain, Band Switch, Power Switch, AVC OFF-ON Switch, BFO OFF-ON Switch, ANL OFF-ON Switch, Send-Receive—Standby Switch.

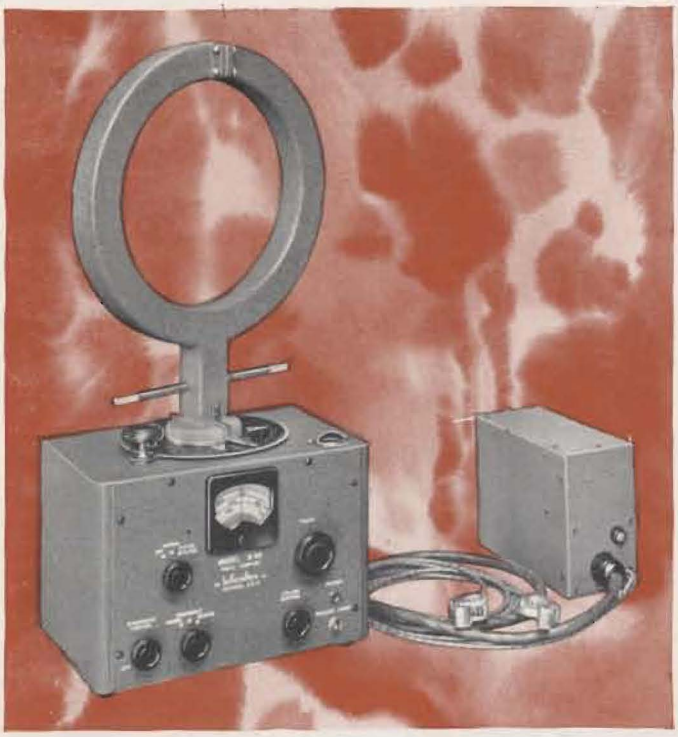
CONNECTORS:
Doublet Marconi Antenna Socket, Phone Jack, Battery Cable with Plugs, AC/DC Outlet Cord.

PHYSICAL CONSTRUCTION:
Attractive black crackle finished aluminum cabinet substantially constructed to withstand hard usage. All corners of the cabinet are rounded for convenience in carrying. The one piece aluminum chassis is so designed for the greatest rigidity consistent with the least weight.

DIMENSIONS:
7" high—8½" wide—13¼" deep.
Weight including all batteries: 18 lbs.

The Model S-29 SKY TRAVELER (SKYER)..... NET **$59.50**





## S-30 RADIO COMPASS

Know your location! The Model S-30 Radio Compass and direction finder enables you to check your position against beacon, broadcast or shore radiophone stations. Coverage from 200 to 3000 kc. (1500 to 100 meters). Sensitive headphones and tuning eye serve as indicators when taking a bearing. Normally used with a 6 volt battery. Has provisions for external speaker, should such an accessory be used. The controls on the Model S-30 Radio Compass have been kept to an absolute minimum consistent with ease and speed of operation. Substantially constructed, attractively finished aluminum cabinet houses the receiver and supports the rotating loop antenna. Power supply is in separate cabinet.

Place a Model S-30 Radio Compass on board and have the assurance of knowing your position anytime.

## SPECIFICATIONS

FREQUENCY RANGE: Beacon Band—220 to 540kc. —Broadcast Band—535 to 1340kc.—Marine Band—1200 to 3000kc.

TUBE LINEUP: 1—6SK7 RF Amplifier; 1—6K8 Mixer; 1—6SK7 IF Amplifier; 1—6SQ7 2nd Detector—AVC; 1—6U5G Tuning Indicator; 1—6G6G Output Amplifier.

CONTROLS: Main Tuning; RF Gain; AF Gain; Band Switch; Phone Jack; Speaker headphone switch; Compass card adjustment.

POWER: Standard power unit consists of thoroughly filtered vibrapack for 6 volt battery operation.

SPEAKER: A 5″ Permanent Magnet Dynamic Speaker is available as an accessory.

PHYSICAL CONSTRUCTION: The Model S-30 Radio Compass is built in a welded aluminum cabinet with a durable wrinkle finish. A 12″ loop is mounted in an aluminum casting. No magnetic materials are used whenever possible. All magnetic parts such as speaker and vibrapack are separate units for mounting at a distance from the compass itself.

DIMENSIONS: 11″ wide—10⅝″ deep: 7½″ high—overall height: Including loop—23½″.

Model S-30 RADIO COMPASS: Complete with tubes, headphones and 6 volt vibrapack power supply. NET PRICE (RADCO) **$99.50**

Separate Emergency Battery Box complete—NET PRICE (BATBX) **19.45**

## RADIOTELEPHONES

Since the days of the first "CQD" for help, radio has played an important part in communications on the high seas. For years it required thousands of dollars for equipment and trained professional telegraph operators. Hallicrafters engineers spent several years simplifying powerful transmitting and receiving apparatus to make radiotelephones practical for use on small craft by yachtsmen without technical radio training.

The Federal Communications Commission opened the way in recent years for an entirely new technical development—the Marine Radiotelephone. Now you can use on your boat, without knowledge of radio, a Radiotelephone.

All around our sea coasts and the Great Lakes, privately owned shore radio stations have been opened. From your boat you can "telephone" one of these stations, and they in turn will connect you by regular phone land line to any telephone anywhere. The service is now simplified so a Radiotelephone on your boat is as necessary as the telephone in your home.

The Federal Communications Commission requires two licenses for the boat owner, but they are easy to obtain. The station license, which carries with it a set of call letters, is applied for by filling out FCC form No. 501 with a statement as to the ownership of the boat and the type of marine equipment to be installed. The second license needed is a Third Class Commercial Operators License which may be held by any member of the crew—a citizen of the United States. This license requires no technical knowledge but merely an understanding of simple radio law. Information for obtaining this license can be procured from the local FCC inspector. Other persons besides the operator are perfectly free to use the Radiotelephone as long as the one holding the license is in attendance. Any kind of business, personal or emergency conversations can be carried on.

## TYPE OF EQUIPMENT

There are three classifications of Radiotelephones. They differ very little except in the range of the transmitter. A small FLOTILLA type model should cover under normal conditions a 50 mile radius, usually sufficient for inshore and flotilla work. The receiver section has the broadcast band, too, for entertainment.

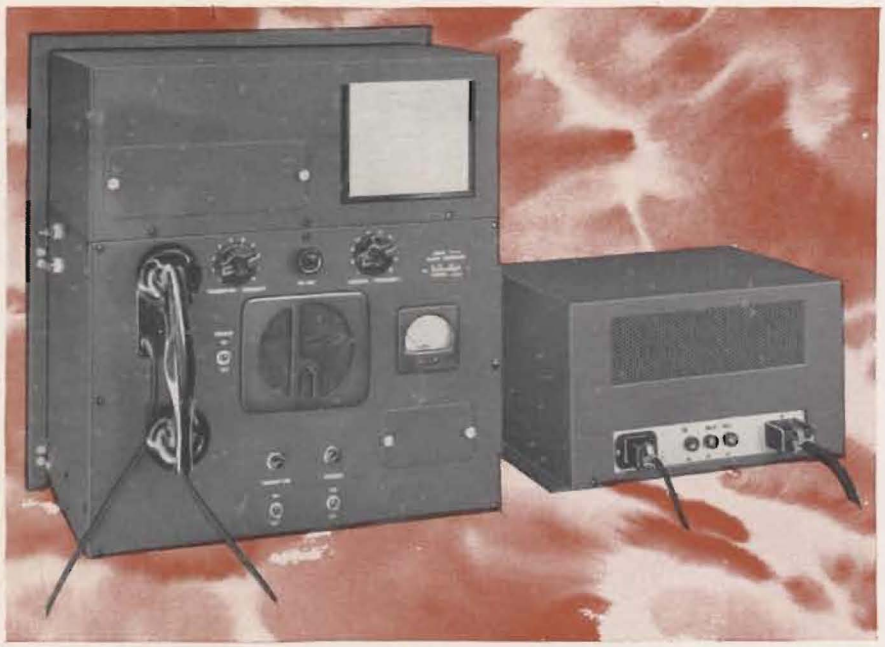
A very practical model is the CRUISING type. Its range is about 125 miles in the daytime and twice that far at night—depending entirely on conditions, height of antenna, etc.

The SEAGOING model will supply all the power you need for anything up to a world cruise. Under most conditions its transmitting range is greater than 250 miles. With ideal conditions it could easily reach 1000 miles. (Each of these models is described in complete technical detail elsewhere in this catalog.)

## RADIOTELEPHONE OPERATION

Operation is very similar to using an ordinary telephone. When you hear your call letters on the loudspeaker, you simply lift the telephone handset from the hook and talk. You speak in a normal tone of voice. There are no tuning operations necessary. (Ringing systems are available for both the CRUISING and SEAGOING Models which ring a bell like a telephone when there is an incoming call for you.)

In making outgoing calls, select the station you wish to talk to, turn the switch on the front panel to their frequency and speak their call letters. Under usual circumstances they will answer immediately. A convenient chart on the front of the instrument shows the switch settings for each channel to be used.



## THE SEAGOING (MODEL HT-12) RADIOTELEPHONE

The Model HT-12—50 watt Radiophone answers every marine radio need! Ten crystal controlled transmitting and receiving channels provide communications with shore stations wherever you cruise.

Power supplies available for operation on 12-32-110 DC and 110 volt-60 cycles AC.

Either press-to-talk or voice controlled operation by merely throwing a switch.

Attractively finished in machine tool gray wrinkle lacquer, the durable rust proofed cabinet is suitable for either table or bulkhead mounting—the HT-12 will provide the maximum in safety and convenience.

Radiotelephones are now a modern necessity—as necessary as the telephone in your home. They give you ship-to-ship, Coast Guard, and ship-to-shore communications wherever you cruise.

POWER SUPPLY: The power supply is a separate unit. A 110 volt 60 cycle AC power supply is standard and is furnished with a rotary converter for 32 or 110 volt DC operation. Where 12 volt DC is used, the power supply consists of a heavy duty vibrapack for the receiver and a dynamotor for the transmitter—both mounted in a single unit.

PHYSICAL CONSTRUCTION: Heavy metal cabinet suitable for table or bulkhead mounting. Corrosion protected treatment throughout. Exterior of unit finished in attractive, durable machine-tool gray wrinkle, after complete rust proofing treatment.

TUNING ADJUSTMENT: Readily accessible controls for resonating transmitter are covered by easily removed protective face plates. Tuning adjustments are made only at time of installation.

DIMENSIONS OF RADIOPHONE: 20½" high—19¼" wide—12" deep. Complete with tubes, less crystals and installation but with power supply for 110 volt 50/60 cycles. NET (TRATW) **$390.00**

MODEL HT-12: Same as above but for 32 or 110 volts DC operation as specified **$470.00**

MODEL HT-12: Same as above but for operation from 12 volts DC **$525.00**

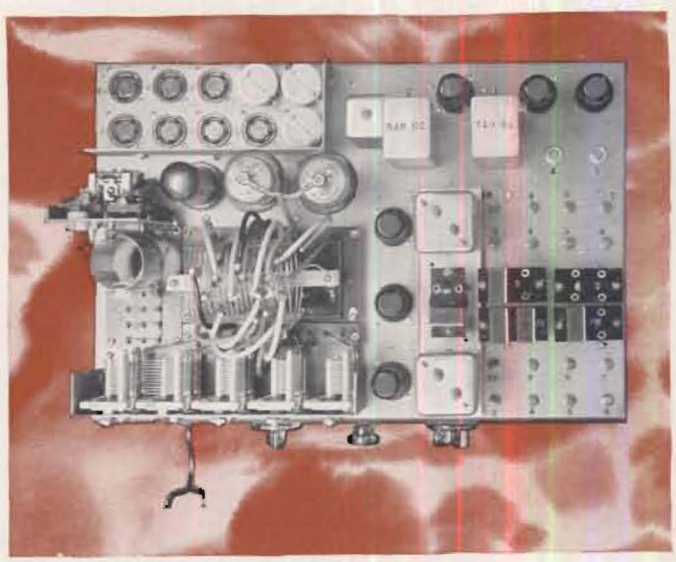
## SPECIFICATIONS

FREQUENCY RANGE: 10 crystal transmitting and receiving channels in range of 2000—3000kc. When specified, two of these channels can be used for operation in the range of 3000 to 6700kc.

TUBE LINEUP: 1—6L6 Oscillator; 2—807 Power Amplifier; 1—6J5 Input Audio Amplifier; 4—6L6G Modulators.

RECEIVER: 1—6SK7 RF Amplifier; 1—6SA7 Mixer; 1—6SJ7 HF Oscillator; 1—6SK7 IF Amplifier; 1—6SQ7 2nd Detector—QAVC; 1—6SF5 Audio Amplifier; 1—6K6G Output Amplifier; 1—6X5G Rectifier; 2—5Z3 Rectifiers.

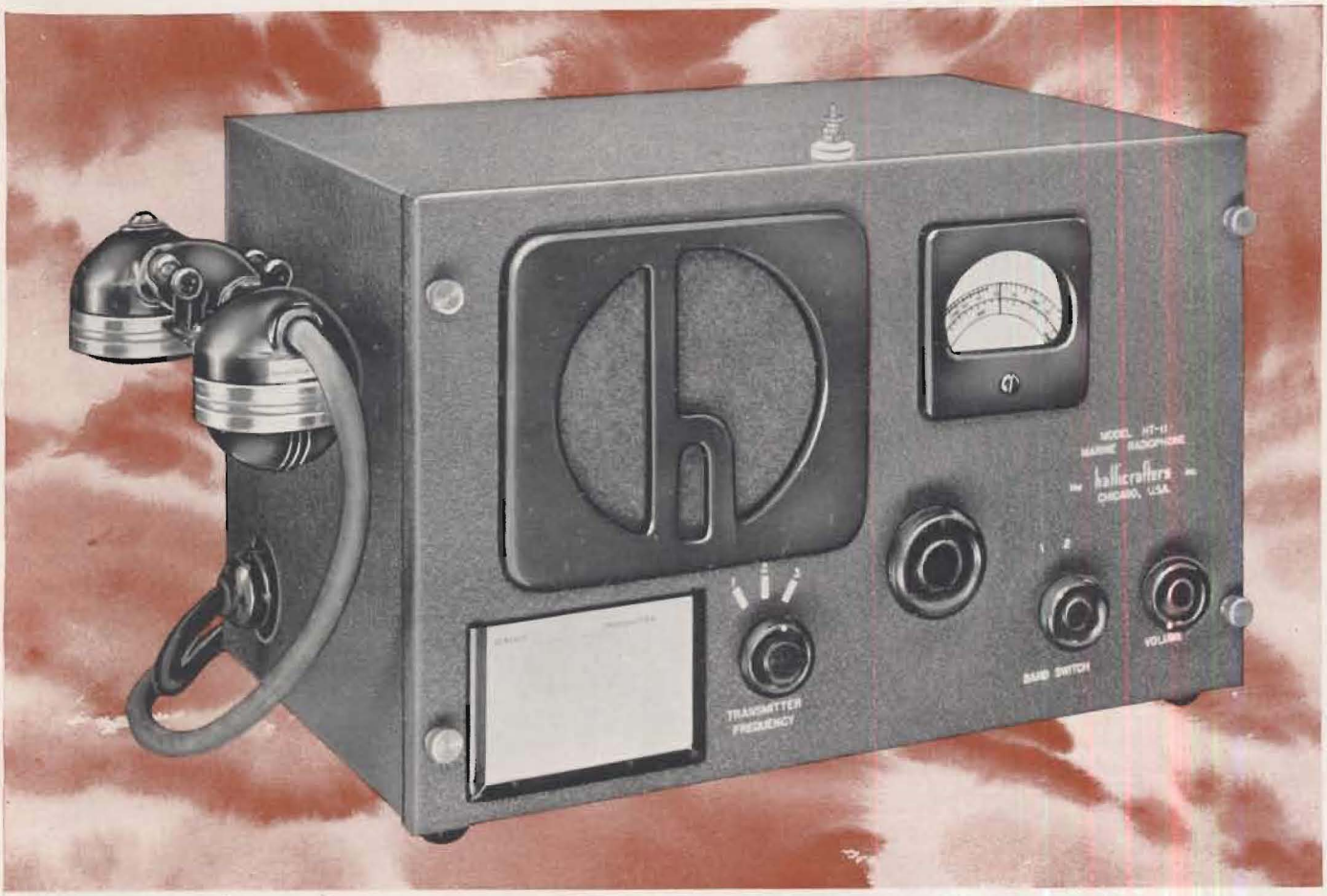
CONTROLS: Only controls which are used by the Operator are accessible on the front panel. Receiver—ON-OFF Switch; Transmitter filaments Switch; Receiver channel Switch; Transmitter channel Switch; Receiver volume control; Speaker ON-OFF Switch. Hand set on Hanger.



# the hallicrafters inc.

# 12 watt Marine Radiophone Unit

## (MODEL HT-11)




The FLOTILLA Model HT-11 Marine Radiophone is a complete moderately priced ship to shore radio transmitter and receiver. The transmitter can be operated on three frequencies in the marine band of 2000 to 3000 kc. The receiver is manually tuned and covers the standard broadcast band on range No. 1. Range No. 2 covers the marine channels. The separate noiseless vibrapack power supply is supplied for 6 or 12 volt DC operation. Other voltages can be used with suitable converter.

## SPECIFICATIONS

FREQUENCY RANGE: Transmitter—3 crystal controlled frequencies in the range of 2000 to 3000 kc. Receiver: Manually tuned with directly calibrated dial. Band 1—550 to 1700 kc. Band 2—2000 to 3000 kc.

TUBE LINEUP: Transmitter 1—6V6 Oscillator; 1—807 Power Amplifier; 2—6V6G Modulators. Receiver: 1—6SK7 RF Amplifier; 1—6K8 Mixer; 1—6SK7 IF Amplifier; 1—6SQ7 2nd Detector—AVC—1st Audio; 1—6K6G Audio Amplifier; 2—6X5G Rectifiers.

CONTROLS: Transmitter channel switch; Receiver Band Switch; Receiver Volume control and ON-OFF switch; Receiver tuning; Standby switch; Speaker headphone switch; Handset with Send-Receive push button.

POWER SUPPLY: The HT-11 power supply is a separate unit connnected to the transmitter-receiver with a cable. The standard power pack is for 6 or 12 volt DC operation as specified. The same power supply is used for both voltages and easily converted from one to the other. Also available is a 110 volt-60 cycle AC power supply which may be used with a rotary converter for 32 or 110 volt DC operation.

PHYSICAL CONSTRUCTION: The small sturdy metal cabinet can be easily mounted on a table or shelf. Rust proofing and corrosion protective used throughout.

DIMENSIONS: 14⅛" wide—8⅝" high—9¼" deep.

MODEL HT-11 RADIOPHONE: Complete with tubes and power supply for 6 or 12 volt DC operation as specified—less crystals and installation NET (TRAEL) ..... **$159.50**

HT-11 same as above but for 110 volt AC ..... **149.50**

32 or 110 volt DC converter for use with above model HT-11 ..... **46.00**

# THE CRUISING
## (MODEL HT-8)

The HT-8 radiotelephone transmitter-receiver is the ideal unit for any type of craft, commercial or pleasure. It is designed to operate equally well on sailboat, power cruiser, large yacht, fishing boat, tug, barge or freighter.

The transmitter covers five frequencies and the receiver six frequencies (all crystal controlled). All are in the 2000-3000 range: or, if desired, two may be in the 3000-6700 range. When the telephone handset is lifted off the hook, the receiver output automatically transfers from the built-in loud speaker to the handset. To transmit, simply press the botton on the handset and speak into the microphone.

### SPECIFICATIONS

25 watts phone carrier. Five marine frequencies. Separate power supply. Quartz crystal controlled transmitter and receiver. Simple to operate. Precision built. 7-tube receiver. Effective squelch circuit. Handset or speaker output. No tuning required after installation. Modern design. Economical to operate. Low in purchase cost.

The very effective squelch circuit prevents static and noise from appearing in the loud speaker output when no carrier is present. Hence, the receiver may be left tuned to any station frequency without annoying bursts of static drumming on the ears.

MODEL HT-8—Bulkhead type. Dimensions 15″ x 10″ x 18″ high. Shipping weight 105 lbs. Complete with tubes, separate power supply for 12, 32, or 110 volts DC as specified (all operate on 110 volt 60 cycle AC). Less crystals and installation.

(TRABL) ..... **$290.00**

# THE SKYRIDER MARINE
## (MODEL S-22R)

Specifically designed for marine service, in the range from 16.2 to 2150 meters (18.5 mc. to 110 kc.). Improved image rejection at the higher frequencies is achieved through the use of 1600 kc. IF Amplifier. The directly calibrated main tuning dial eliminates the use of complicated charts and tables. An efficient mechanical bandspread with separate dial provides easy logging. Frequency range has been extended down to 110 kc. Calling and working frequencies lie in same band. Variable mica condensers are especially treated to maintain adjustment under continuous exposure to salt sea atmosphere.

### SPECIFICATIONS

Built for 110 volt AC-DC operation. Also may be operated from 6 volt battery supply with the addition of a Model No. 302 Electronic Converter. Dimensions 18½″ x 9¼″ x 8½″ high. The SKYRIDER MARINE (Model S-22R). Complete with tubes and speaker. Shipping weight 31 lbs.

(SKYCU) ..... **$64.50**

any three amateur bands (10 to 160) and HT-5 pre-amplifier. Dimensions: 29" x 19" x 37" high.

Shipping weight 550 lbs. (TRACO) ..... **$695.00**

Additional set of coils for any one amateur band (10 to 160) ..... **26.00**

## FREQUENCY STANDARD
### (MODEL HT-7)

The HT-7 Frequency Standard consists of a stable crystal oscillator providing either 1000 kc. or 100 kc. output, together with a 10 kc., multi-vibrator and a harmonic amplifier. A switch on the front panel selects harmonics of 1000 kc., 100 kc. or 10 kc. With output fed into any good communications receiver accurate marker frequencies at 1000 kc., 100 kc. or 10 kc. appear across the dial. The Frequency of the 100 kc. crystal is adjustable over a narrow range, so that it is possible to set its frequency to zero beat with either WWV or domestic broadcast stations, and once set will maintain its frequency accurately over long periods of time. Unequalled for checking transmitter frequency, and receiver calibrations. Also for calibrating and bandsetting receivers, locating signals for skeds, and setting ECO frequency. For operation on 110 volt 50-60 cycle. Shipping weight 10 lbs. Dimensions 5½" x 8" x 7½" high.

MODEL HT-7—Complete with tubes and crystal. (TRAFR) ..... **$29.50**

Extra for Univ. 110-250 volts, 25-60 cycles ..... **5.00**

## HT-4 450 WATT

The HT-4 is intended for those who want the BEST in an efficient, high-powered rig. The carrier output is 325 watts on phone and 450 watts on CW. The HT-5 preamplifier, supplied with the transmitter, may be mounted at the operating position, controlling volume, keying and standby. Thus, once adjusted to any band the rig may be operated remotely. The transmitter may be set to any three of the 10, 20, 40, 80, and 160 meter bands. Subsequent selection of any of the three frequencies is by a switch on the front panel.

## SPECIFICATIONS

Tubes: 1—6F6 crystal oscillator, 1—6L6 doubler, parallel RK39's-bufferdriver, 1—RK63 final amplifier, PP-2A3 driver, PP-RK38 modulators, 2—5Z3, 2—866 rectifiers. The HT-5 preamplifier uses 1—6J7, 3—6J5, 1—80. For operation from 110 volts 50-60 cycles AC. Available for special frequencies. Write for prices.

MODEL HT-4—Complete with tubes, crystals, coils for

# the hallicrafters inc.

## HT-9 100-WATT TRANSMITTER

Performance and price of this transmitter made possible by the facilities of the World's Largest Builders of Communications Equipment. Your cost on parts alone would exceed the price we ask for this complete transmitter.

The HT-9 is a 5-frequency phone and CW unit, rated at 100 watts on CW and 75 watts on phone (carrier OUTPUT). Coils are available for all bands from 1.7 to 30 megacycles. Exciter coils for five bands can be plugged in, pretuned, and left in the transmitter. Bandswitch, controls and meters, governing every function of the transmitter, are all on the front panel. 100% modulation with very low distortion is assured. Carrier hum is at least 40 db below 100% modulation. Any medium-level high impedance type of microphone can be used.

### SPECIFICATIONS

14 Tubes—1-6F6 Oscillator, 1-6L6 Doubler, 1-814 Power Amplifier, 1-6J7 Audio Input Amplifier, 1-6J5 Audio Amplifier, 4-6L6G PP Parallel Modulators, 2-866 High Voltage Rectifier, 1-5Z3 Exciter Rectifier, 1-5Z3 Audio Rectifier, 1-80 Audio Rectifier. For operation from 110 volts, 50-60 cycles AC. Dimensions: 28" wide, 18½" deep, 11½" high. Any 5 frequencies in range 1.7 to 30 megacycles. Crystals and tuning units for all circuits up to the grid of the final amplifier are plugged and tuned in for each frequency channel desired. Antenna coil will match any resistive load from 10 to 600 ohms. Frequency response is flat within 3 db from 100 to 7000 cycles.

| | |
|---|---|
| MODEL HT-9—Complete with tubes, but less crystals and coils. Shipping weight 165 lbs. (TRANI) | **$199.50** |
| 160-80-40 meter coils (for operation on crystal frequency) each set | **6.65** |
| 20-10 meter coils (for operation on twice crystal frequency), each set | **8.95** |
| 160-80-40 meter crystals, each | **4.80** |
| 20 meter crystals (for 10 meter operation), each | **5.75** |

## HT-6 25-WATT PHONE AND CW TRANSMITTER

The HT-6 gives you exacting transmitter performance, using an 807 in the final stage. The power output is 25 watts on most bands. Frequency range is 1.7 mc. to 60 mc. Coils for any three bands may be plugged in, pretuned, and then switched at will by a control on the front panel, which properly connects all circuits from crystal to antenna.

Tube complement: 1-6L6 Osc.-dblr., 1-807 final R. F. amplifier, 1-6F5 microphone amplifier, 1-6J5 Audio amplifier, 2-6L6G modulators and 2-5Z3 rectifiers. Power drain about 120 watts CW and 225 watts phone. Size—20" long, 9" high, 15" deep. For operation on 110 volts 50-60 cycle AC.

| | |
|---|---|
| MODEL HT-6—Transmitter with tubes, less coils and crystals. Ship. wt. 67 lbs. (TRANO) | **$99.00** |
| Coils for 160, 80, 40 or 20 meter operation, each set | **4.95** |
| E. C. O. unit for 160, 80, 40 or 20 meter operation for corresponding coils listed above, each | **3.65** |
| Set of coils for 5 or 10 meter operation on twice crystal frequency, each set | **6.95** |
| Random Frequency Crystal for 160, 80, 40 meters, each | **4.80** |

| | |
|---|---|
| Random Frequency Crystal for 20, 10 and 5 meters, each | **5.75** |
| Extra for 220 volt 50-60 cycle operation | **7.50** |

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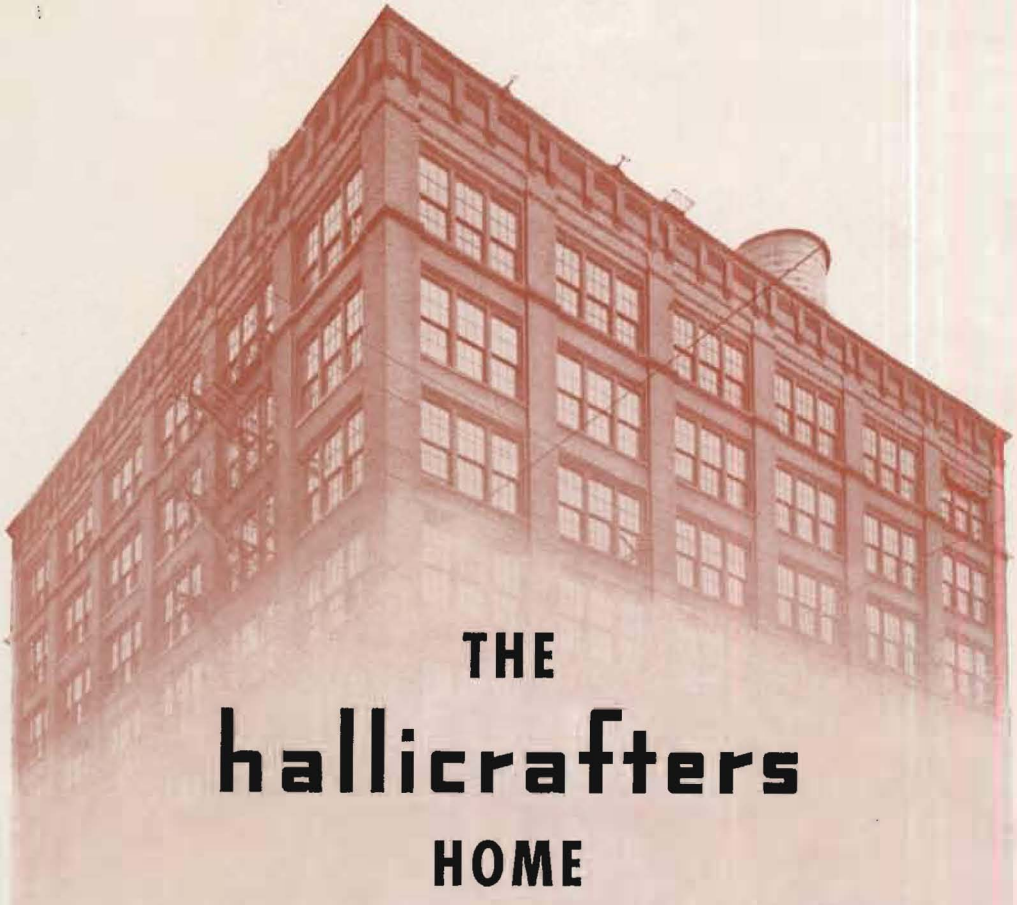

# THE hallicrafters HOME

The Hallicrafters occupy the top three floors of this building in the 2600 block of Indiana Avenue, Chicago. In 1937 one floor was sufficient. The fact that the firm has trebled in size is recognition of the policy of constant engineering progress plus the most scientific production methods. Government requirements and specifications are carefully followed. All radio communications equipment is built for immediate use by amateurs, commercial firms, laboratories or the 33 Governments supplied by the Hallicrafters.

## INDEX

TODAY we have what we honestly believe to be the world's finest communications equipment. The name "Hallicrafters" on the unit you buy will always be a guarantee that you have purchased quality equipment, and we here at Hallicrafters are firm believers that there is no substitute for Quality.

Write for details on how to secure a motion picture film showing how communications equipment is made — there is no charge. Send your inquiry to the factory.

# the hallicrafters inc.

## 2611 INDIANA AVE.
## CHICAGO, U.S.A.