



**1 MODEL SX-110 FREQUENCY COVERAGE:** Broadcast Band 538-1600 kc plus three short-wave bands—1550 kc-34 mc. **FEATURES:** Slide rule bandspread dial calibrated for 80, 40, 20, 15 and 10 meter amateur bands, 11 meter citizens' band and logging scale. Separate bandspread tuning condenser, crystal filter, antenna trimmer, "S" Meter, one r-f, two i-f stages. **INTERMEDIATE FREQUENCY:** 455 kc. **TUNING ASSEMBLY AND DIAL DRIVE MECHANISM:** Ganged, 3 section tuning capacitor assembly with electrical bandspread. Main tuning dial calibrated in megacycles, has 0-100 logging scale. **AUDIO OUTPUT IMPEDANCE:** 3.2 and 500 ohms. **TUBE COMPLEMENT:** Seven tubes plus one rectifier: 6SG7, r-f amplifier—6SA7, converter—6SG7, 1st i-f amplifier—6SK7, 2nd i-f amplifier—6SC7, BFO and audio amplifier—6K6GT, Audio output—6H6, ANL-AVC-detector—5Y3GT, rectifier. **AUDIO POWER OUTPUT:** 2 watts. **POWER SUPPLY:** 105/125 V. 50/60 cycle AC. **PHYSICAL DATA:** Gray steel cabinet with brushed chrome trim. Size 18 3/4" wide x 8" high x 10 1/4" deep. Shipping weight approximately 32 lbs.

**2 MODEL SX-100 Receiver FREQUENCY COVERAGE:** Standard Broadcast; 538-1580 kc; plug three S/W bands, 1720 kc-34 mcs. Band spread calibrated for 80, 40, 20, 15, 11, 10 meter bands. **SELECTIVITY:** Five steps. 1. (Broad) 6 db-5 kc 60 db-15 kc-2. (Broad) 6 db-3 kc 60 db-12 kc-3. (Broad) 6 db-2 kc 60 db-10 kc-4. (Broad) 6 db-1.3 kc 60 db-7 kc-5. (Sharp) 6 db-5 kc 60 db-5 kc. **FEATURES:** Selectable side band operation. "Tee-Notch" filter—This new development provides a stable non-regenerative system for the rejection of unwanted heterodyne. Notch depth control for maximum null adjustment. Antenna trimmer. Plug in laboratory type evacuated 100 kc quartz crystal calibrator. Logging dials for both tuning controls. Full precision gear drive dial system. Second conversion oscillator crystal controlled. **FRONT PANEL CONTROLS:** Pitch control. Reception. Standby. Phone jack. Response control (upper and lower side band selector). Antenna trimmer. Notch frequency. Notch depth. Calibrator on/off. Sensitivity. Band selector. Volume. Tuning. AVC on/off. Noise limiter on/off. Bandspread. Selectivity. **TUBES AND FUNCTIONS:** 1 6CB6 R.F. amplifier. 1 6AU6 1st converter. 1 6C4 H.F. oscillator. 1 6BA6 2nd converter. 1 12AT7 dual crystal second converters. 2 6BE6 50 kc. i.f. amplifiers. 1 6AL5 AVC-noise limiter-detector. 1 6SC7 1st audio and BFO. 1 6K6 Power output. 1 5Y3 Rectifier. 1 OA 2 Volt-

age regulator. 1 6C4 i.f. amplifier—(50 kc.). 1 6AU6 100 kc. XTAL marker. **AUDIO POWER OUTPUT:** 1.5 watts with 10% or less distortion. **POWER SUPPLY:** 105/125 V. 50/60 cycle AC. **PHYSICAL DATA:** Gray and black steel cabinet, silver trim, piano hinge top 18 3/8" wide x 8 1/2" high x 10 3/8" deep. Shipping weight approximately 43 pounds.

**3 MODEL S-118 FREQUENCY COVERAGE:** Standard Broadcast plus 185 kc—420 kc, 495 kc—31 mc in 5 bands. Intermediate frequency 455 kc. **CONTROLS:** Main tuning. Separate electrical bandspread with logging scale. Band selector. Volume AC On/Off. Sensitivity—Rec/Stby BFO On/Off. ANL On/Off. **FEATURES:** Front panel—headphone jack. 4" PM speaker. Loopstick antenna for low frequency and broadcast band. Phono jack can be used either for tuner output or phono input. Plug for use with external power supply. Universal impedance headphone output. **TUBES AND FUNCTIONS:** 6BL8 converter and oscillator 12BA6 IF amp. 6BL8 IF amp and BFO. 6T8A detector, AVC, ANL and 1st audio, 6AQ5A audio output. Plus 2 silicon power diodes. **POWER REQUIRED:** 105 - 125 V, 50/60 cycles AC. 33 watts. **PHYSICAL DATA:** Gray steel cabinet with bright chrome trim. Black sliderule dial. Size: 14 1/2" wide, 8 1/2" deep by 5 3/4" high. Shipping weight 17 1/2 lbs.

**4 NEW! S-120 Receiver** The clean, compact beauty of this new, precision-engineered receiver is more than skin deep! Newly designed throughout, the S-120 brings you superlative performance on three short wave bands plus standard broadcast, and a new three-way antenna system for maximum flexibility. The finest buy available in a low-cost receiver! **FEATURES:** Coverage of 540-1650 kc. plus short wave from 1650 kc. through 31 mc.; Electrical bandspread; slide-rule dial with imprinted guide to frequencies of foreign, gov't, aviation, etc.; Three-way antenna system—built-in, high-gain ferrite loop for AM, 45" collapsible whip, plus terminals for long wire or doublet antenna, all bands; Front panel B.E.O./sensitivity control; built-in 5" speaker; front-panel headphone jack (disables speaker). **FRONT PANEL CONTROLS:** Main Tuning; Bandsread Tuning; Band Switch; Audio Vol. AC Off; B.F.O./Sensitivity. **TUBES AND FUNCTIONS:** 12BE6 converter; 12BA6 I.R. amplifier, B.E.O.; 12AV6 1st audio AVC and detector; 50C5 power amplifier. Selenium rectifier. Two dial lamps. 105-125V AC/DC at 30 watts. U/L listed. **PHYSICAL DATA:** Gray steel cabinet with bright chrome trim, black dial. Size: 13 1/2" wide by 5 7/8" high by 8 3/4" deep. Shipping wt.: 11 3/4 lbs.

**5 MODEL SX-62A FREQUENCY COVERAGE:** Standard Broadcast from 550 kc through 1620 kc, three short wave bands, 1.62 mc-32 mc and FM or AM from 27 mc to 109 mc.

**FEATURES:** Single tuning control covers wide-vision dial with one band lighting at a time. A 500 kc crystal calibration oscillator built-in to check dial pointer accuracy. Temperature compensated, voltage regulated. Audio flat 50-15,000 cycles, 10 watt push-pull audio output. Automatic Noise Limiter; Series diode.

**TYPE OF SIGNALS:** Bands 1, 2, 3, and 4; AC/CW. Bands 5 and 6; AM/FM/CW.

**CONTROLS:** Band selector 550 kc-1620 kc, 1.62 mc-4.9 mc, 4.9 mc-15 mc, 15 mc-32 mc, 27 mc-56 mc, 54 mc-109 mc. Receive/standby, calibration osc. on/off, noise limiter, tuning, AF gain, Phono/FM/AM/CW, six-position selectivity, four-position tone, r-f gain, calibration reset.

**INTERMEDIATE FREQUENCIES:** Bands 1, 2, 3, and 4; 455 kc. Bands 5 and 6; 10.7 mc.

**ANTENNA INPUT IMPEDANCE:** 52 to 600 ohms.

**AUDIO OUTPUT IMPEDANCE:** 3.2/8/500.

**TUBE COMPLEMENT:** Fourteen tubes plus voltage regulator and rectifier. (2) 6AG5, r-f amp.-7F8, conv.-6SK7, (i-f amp.-6SG7, i-f amp.-6SG7.), FM limiter and AM det.-6H6, FM det.-6J5, BFO-6H6, ANL-6SL7, phase inverter-(2) 6V6, push-pull audio output-6C4, calibration osc.-VR-150, regulator-5U4G, rectifier.

**POWER SUPPLY:** 105/125 V., 50/60 cycles AC.

**BAND CHANGE MECHANISM:** Six-pos. ganged rotary wafer switch. **TUNING ASSEMBLY AND DIAL DRIVE MECHANISM:** Ganged, 8 section ball bearing tuning capacitor assembly. Smooth acting inertia tuning control. Thirteen inch slide rule dial, each band individually illuminated. Crystal calibration switch and dial pointer reset on front panel.

**EXTERNAL CONNECTIONS:** Terminals for doublet or single wire antenna on rear. 3.2/8/500 ohm audio outputs. External antenna provided. Phone jack, socket for external power and remote control connections. Phone jack on front panel.

**PHYSICAL DATA:** Satin black steel cabinet with light gray front panel and chrome trim. Piano hinge top. Size 20" wide x 10 1/2" high x 16" deep. Shipping weight approximately 64 lbs.

**6 MODEL S-119 "Sky Buddy II"** a famous old name in radio receivers. Now carried on in a new low cost receiver.

Frequency coverage 3 bands. Standard broadcast 540 kc to 1620 kc. 2 mc to 5.5 mc and 6 mc to 16 mc.

**FEATURES:** Planetary tuning drive mechanism for easy tuning. Built in loudspeaker. Headphone tip jacks with switch for selection of headphone or loudspeaker listening. AM/CW switch for reception of voice or code signals. Ferrite loopstick antenna for broadcast band reception.

**CONTROLS:** On/Off/Volume. Band selector. Tuning dial. AM/CW switch. Headphone/Speaker SW.

PRINTED IN U.S.A.



**POWER TRANSFORMER OPERATED—115V 60 cycle, only 16 watts power consumption.**

**TUBES:** 3 dual function plus separate diode audio detector.

**AUDIO:** Loudspeaker plus headphone tip jacks with universal headset output.

**EXTERNAL CONNECTIONS:** Antenna — ground — headphone tip jacks.

**PHYSICAL DATA:** Two tone gray steel cabinet and front panel. Size 10 1/2" wide, 7 1/2" deep, 5" high. Shipping weight 9 lbs.

**7 MODEL S-108 FREQUENCY COVERAGE:** Broadcast band 538-1600 kc plus three S/W bands 1550 kc-34 mc.

**FEATURES:** Slide rule bandspread dial calibrated for 80, 40, 20, 15 and 10 meter amateur bands, 11 meter citizens' band and logging scale. One r-f, two i-f and separate bandspread tuning condenser. Temperature compensated oscillator and built-in speaker.

**CONTROLS:** Sensitivity, band selector, tuning, bandspread, volume, AVC, noise limiter, AM/CW, on/off/tone, pitch control, standby/receive.

**INTERMEDIATE FREQUENCY:** 455 kc.

**AUDIO OUTPUT IMPEDANCE:** Voice coil impedance 3.2 ohms. Low impedance headset output.

**TUBE COMPLEMENT:** Seven tubes plus rectifier: 6SG7, r-f amplifier—6SA7, converter—6SK7, 1st i-f amplifier—6SK7, 2nd i-f amplifier—6SC7, BFO and audio amplifier—6K6GT, audio output—6H6, ANL, AVC, and detector—5Y3GT, Rectifier.

**EXTERNAL CONNECTION:** Terminals for single or doublet antenna on rear. External antenna provided. Headphone jack on front.

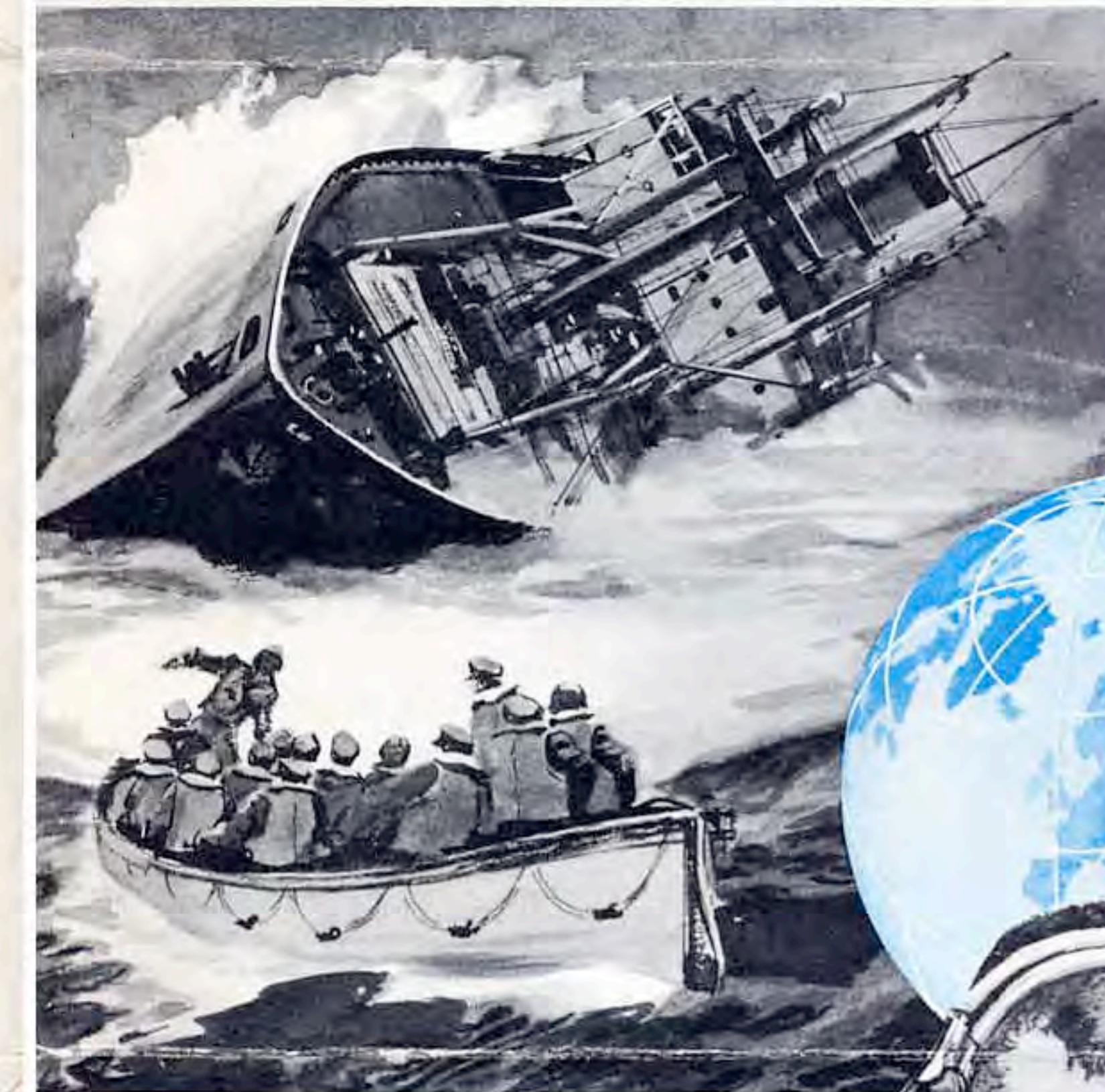
**AUDIO POWER OUTPUT:** 2 watts.

**POWER SUPPLY:** 105/125 V, 50/60 cycle AC.

**PHYSICAL DATA:** Gray steel cabinet with brushed chrome trim. Size 18 3/4" wide x 8" high x 10 1/4" deep. Shipping weight approximately 32 lbs.

**8 R-48 SPEAKER** Latest design uses new 5 1/2" x 7 1/2" elliptical assembly. Alnico V 3.16 oz. magnet has fully saturated air gap for exceptional damping, distortion-free response. Switch at rear for selection of music or voice response. Use with SX-100, SX-110, SX-62A, or any receiver with 3.2 ohm output. Gray steel 6 3/8" high x 13 1/4" wide x 8 1/4" deep cabinet. Shipping weight approximately 9 lbs.

**9 MODEL R-47** Brand new, designed for superior SSB and other voice applications. This compact, handsomely styled speaker has essentially flat response from 300 to 2850 c.p.s., drops off rapidly in output beyond cut off points. Perfect match for SX-100, SX-110 receivers. Input impedance: 3.2 ohms. Dimensions: 5 1/2" x 5 1/4" x 3 1/2"—ideal for mobile installations, too. Shipping weight: approximately 2 1/2 lbs.



your guided tour of  
**THE AMAZING  
WORLD OF SHORT WAVE LISTENING**

conducted by



**hallicrafters**

# EXCITING ADVENTURES OUT OF THIN AIR

—and you are there!

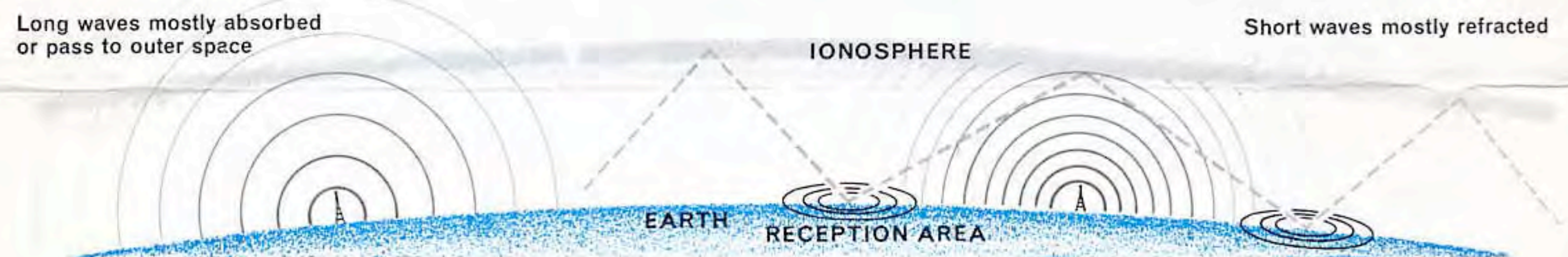
From Australia . . . from outer space . . . from a ship in distress far at sea, or a police squad car in your own home town—the great events of history and excitement of the moment are yours with the twist of a dial through Hallicrafters Short Wave Radio!

The world we live in is vastly more complex than it was just a few short years ago. Today, it is possible to travel between continents *faster than news can reach you*

through your newspaper.

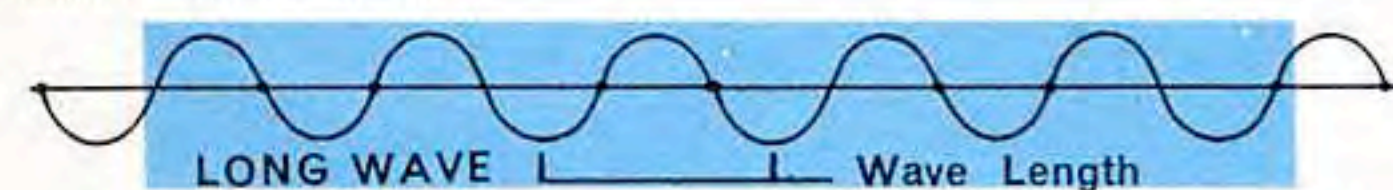
Every moment of every day and night, the *voices of adventure* are around you, ready to bring into your home an absorbing new interest . . . a thrilling new way to keep up with events, to be informed and *stay* informed.

Now, more than ever before, Hallicrafters Short Wave Radio can keep you in tune with the world.

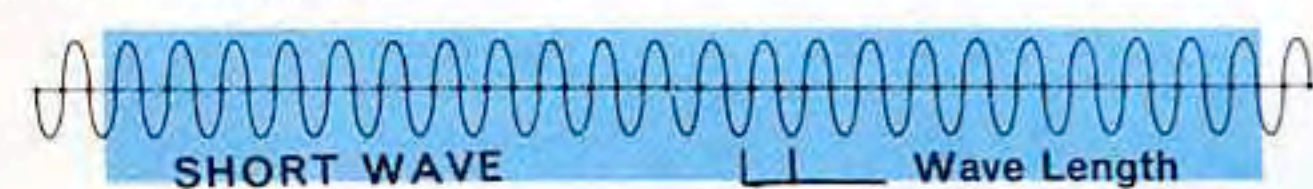


## HOW DOES SHORT WAVE DIFFER FROM STANDARD BROADCAST?

You may often hear the term "wave length" applied to the radio signals transmitted by a broadcasting station. The signals travel, of course, in "waves"; the wave length being the distance between the "crests" of the waves.



The total number of complete waves (or cycles) that a station can send out *per second* is referred to as "frequency". The broadcasting frequency, therefore, is determined by the wave length on which a particular station is transmitting. The shorter the wave length, the higher the frequency.



Every radio station in the world is licensed to broadcast on certain assigned frequencies or bands of frequencies.

The *standard* broadcasting stations such as those in your home town are assigned to *lower* frequencies, or "longer" wave lengths. The high frequency bands are reserved for other types of transmitting stations throughout the world known as Short Wave Stations.

### Why short wave is used for long-distance transmission

The chief characteristic of short waves is their amazing ability to span enormous distances.

The drawings above illustrate the manner in which all radio signals travel in "waves" as they leave the transmitter antenna. Some of the signal "hugs" the ground, while the rest travels upward and outward away from the earth.

When they reach the ionosphere, a region of tiny refractive particles 70 to 250 miles above us, the signal may either be "absorbed" into the ionosphere or "bent" back toward earth. Certain higher frequencies will pass right through the ionosphere without being refracted toward earth, or absorbed.

### Longer waves are mostly absorbed

The longer waves of standard broadcast are almost entirely absorbed into the ionosphere; therefore the signals you hear are primarily the short-distance, "ground" waves.

These provide a clear, sharp signal in your local area. Thus two stations several hundred miles apart are able to operate during daylight hours on the same frequency without serious interference.

At night, more of the longer waves are refracted from the ionosphere; this explains why you may occasionally pick up a standard broadcast station clear across the country.

### How short waves use the ionosphere

Short waves, for the most part, are *not* "absorbed" into the ionosphere; they are refracted downward toward the earth. As these waves strike the earth, they are again deflected upward to the ionosphere. Once again they are "bent" back toward earth.

As shown in the diagram, this process is repeated again and again over tremendous distances; in each area where *short wave* signals "bounce" off of the earth, they can be heard on short wave receivers.

Since the ionosphere is constantly changing, it produces varying degrees of refraction and thus better or poorer short wave reception. These ionospheric changes also account for variation in reception from summer to winter and from daylight to darkness.

That is why, on short wave radio, you sometimes experience fading or flutter, and why you may hear Istanbul tonight as clear as your local station, and perhaps not at all tomorrow.

However, each country has many short wave stations, and thus there almost always is something wonderful to hear from anywhere in the world!



## AMATEUR RADIO

In America alone, there are more than 250,000 licensed amateur radio stations operated by individuals from all walks of life—scientists, schoolboys, mechanics, housewives—people with a wonderful spirit of adventure.

Friendships among radio amateurs span borders, oceans and continents. Conversations between amateurs in America and Europe, Asia or Africa are frequent—and make fascinating listening.

Not only is theirs a fascinating hobby, but amateurs every day perform services in the public interest at times of disaster and emergency when normal communications break down—floods, tornadoes, air and sea emergencies, etc.



And for entertainment . . . a disc jockey in Jogjakarta . . . genuine Swiss yodelling . . . the bells of St. Peter's in the Vatican . . . Radio Free Europe . . . a marimba dance orchestra in a Guatemalan night club . . . these and hundreds of other fascinating adventures are yours through the wonder of short wave radio!

The list below is a very small sample of the thousands of short wave stations throughout the world:

## AVIATION, SHIPS AT SEA

A great ocean liner, fogbound in the north Atlantic . . . a giant bomber running low on fuel . . . a fishing fleet heading home in pitch blackness—these are some of the "routine" events that make short wave listening a truly thrilling experience!

Commercial airports and airliners, ship-to-shore radio, the Coast Guard, some military aviation frequencies, and private aviation are among the many commercial and industrial short wave activities you can hear on Hallicrafters short wave receivers.



## POLICE, FIRE, EMERGENCY



Within your own local area, it is possible to pick up many special short wave broadcasts that can provide fascinating listening. Among these are state and local police, taxicab, fire departments and radio telephone.

Since these sources need not be heard outside your locality, they transmit on the type of higher frequencies that can be heard only in the immediate area.

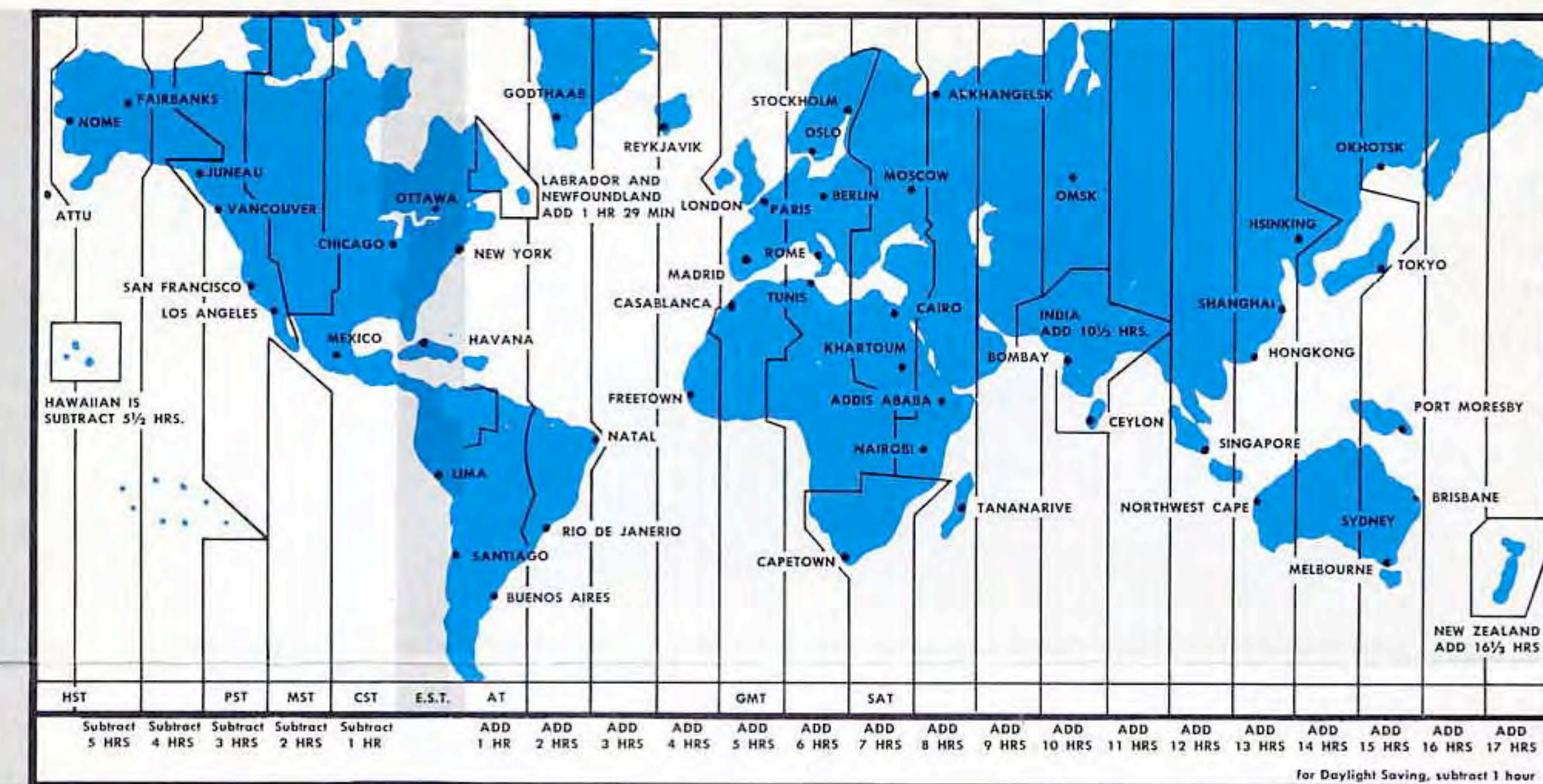
## ADDITIONAL SOURCES

Armed Forces ground communications . . . Civil Defense . . . Government . . . Weather Stations . . . Inland Waterways . . . W.W.V. (Bureau of Standards time signal).

## FOREIGN STATIONS

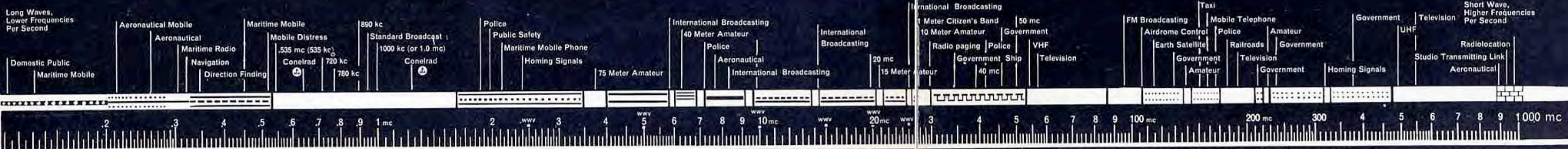
From *every country in the world*, powerful short wave stations beam broadcasts regularly, many of them in English language.

Short wave provides you with the perfect means of keeping up with world events through on-the-spot news broadcasts from the trouble areas of the world—from the Middle East to Alaska . . . from Australia to outer space!



**INTERNATIONAL TIME MAP** The map at the left shows how many hours to add or subtract from Eastern Standard U.S. Time to determine the hour anywhere on earth. It will help you to determine the best listening times, in the world of short wave listening.

mc	city	country	mc	city	country	mc	city	country
3.275	Maracaibo	Venezuela	6.035	Davenport	England	9.620	Beograd	Yugoslavia
3.300	Belize	British Honduras	6.040	Nanking	China	9.640	Caracas	Venezuela
3.360	Santiago	Dominican Republic	6.045	Djakarta	Indonesia	9.650	Paradys	Afghanistan
4.760	Suva	Fiji Islands	6.050	Kiev	Ukraine	9.660	Teheran	Iran
4.765	Santana	Brazil	6.055	Schwarzenbach	Germany	9.690	Gral Pacheco	Argentina
4.865	Ponta Delgada	Azores	6.060	Sacrovill, N. B.	Canada	9.725	Tel Aviv	Israel
4.990	Khartoum	Sudan	6.070	Shepparton	Australia	11.710	Tangier	Morocco
5.010	Grenada	Windward Islands	6.075	Gobi Altai	Mongolia	11.715	Havana	Cuba
5.952	Guatemala City	Guatemala	6.080	Tokyo	Japan	11.850	Guatemala City	Guatemala
5.955	Athens	Greece	6.085	Wavre Oerijse	Belgium	11.880	Lusaka	Rhodesia
5.960	Santa Rosa	Honduras	6.090	Junglinster	Luxemborg	11.895	Diosgyor	Hungary
5.965	Warsaw	Poland	7.130	Minsk	Poland	11.905	Koboo	Mongolia
5.968	Vatican City	Italy	7.135	Monte Carlo	Monaco	11.910	Bangkok	Thailand
5.970	Brazzaville	Congo	7.140	Ankara	Turkey	11.945	Encarnacion	Paraguay
5.975	Delhi	India	7.155	Amman	Jordan	11.960	Pori	Finland
5.980	Jweliich	Denmark	7.160	Karchi	Pakistan	15.105	Tirane	Albania
5.985	Prata Podabrado	Czechoslovakia	7.165	Dar es Salaam	Tangier	15.160	Allouise	France
5.985	Hilversum	Netherlands	7.180	Swwon	Korea	15.175	Shepparton	Australia
5.990	Accra	Ghana	7.255	Sofia	Bulgaria	15.180	Davenport	England
5.995	Omdurman	Sudan	9.505	Ciudad Trujillo	Dominican Republic	15.190	Delhi	India
6.000	Abbu Zabal	Egypt	9.520	Copenhagen	Denmark	15.205	Mexico City	Mexico
6.005	Tamavua	Fiji Islands	9.535	Malolos	Philippine Islands	15.210	Abu Zabal	Egypt
6.010	Roma Prato	Italy	9.540	Rangoon	Burma	15.220	Lopik	Holland
6.015	Lisbon	Portugal	9.550	Tromsøe	Norway	15.225	Tokyo	Japan
6.020	Lopik	Holland	9.555	LaPaz	Bolivia	15.240	Canton	China
6.025	Sao Paulo	Brazil	9.570	Bucharest	Rumania	15.255	Sackville	Canada
6.025	Voice of America	Brazil	9.575	Ulan Bator	Mongolia	15.285	Havana	Cuba
6.030	Bogata	Columbia	9.585	Arganda	Spain	15.315	Caracas	Venezuela
			9.595	Montevideo	Uruguay	15.420	Schwarzenbach	Germany
			9.605	Sabbourra	Syria			



## RADIO FREQUENCY SPECTRUM

The chart at the left shows the useful spectra of frequencies available for various types of broadcasting, and the approximate frequency range assigned by international agreement to each type.

The "bands" shown on the dial of your receiver are greatly enlarged segments of this spectrum.

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