


INSTRUCTION MANUAL
Catalog Number 12-747

REALISTIC®

“Patrolman-10”®

10-Band Portable Radio



CUSTOM MANUFACTURED FOR
RADIO SHACK  A TANDY CORPORATION COMPANY

Your **REALISTIC PATROLMAN-10** is a high-quality, sensitive 10-band superhetrodyn radio which can tune to all of the most wanted frequencies from 540 kHz up to 470 MHz. Of course it includes the standard AM and FM Broadcast bands, but it also has a special Marine Band for tuning 1.6 to 4 MHz, plus three Short Wave Bands, three VHF Bands and the UHF Band.

The **PATROLMAN-10** will operate either from batteries (six type "D" batteries) or standard AC power (120 volts, 60 Hz). If the AC power should fail, an automatic circuit switches over to battery power with no interruption of sound.

The circuitry is all solid-state, built on rugged printed circuit boards. This insures maximum reliability. The combination of hi-fi circuit design and top-quality 5" permanent magnet dynamic speaker provides superior sound reproduction. Flip-type switches, linear sliding Volume and Tone controls, plus push-button band selection gives you easy, finger-tip control of all functions.

GENERAL SPECIFICATIONS

FREQUENCY COVERAGE:

AM	Standard Broadcast	540 to 1600 kHz
MB	Marine Band	1.6 to 4.0 MHz
SW1	Short Wave Band	4 to 10 MHz
SW2	Short Wave Band	10 to 18 MHz
SW3	Short Wave Band	18 to 24 MHz
VHF LO	Public Service Band	30 to 50 MHz
FM	Standard FM Band	88 to 108 MHz
VHF AIR	Aeronautical Services Band	108 to 136 MHz
VHF HI	Public Service Band	144 to 174 MHz
UHF	Public Service Band	450 to 470 MHz

SEMICONDUCTOR COMPLEMENT

1 Integrated Circuit
 24 Silicon Transistors
 15 Diodes
 1 Thermistor
 1 Varistor
 3 Rectifier Diodes
 2 Varicaps
 1 Zener Diode

SPEAKER

5", 8 ohm, permanent magnetic, dynamic type

Power Requirements

120 volts, 60 Hz AC or 9 volts DC (6 type "D" batteries)

FEATURES

- * Push-button Band selection
- * World Map/Time Zone built into the cover
- * Dual purpose meter — battery condition and signal strength
- * Automatic power switch-over from AC to batteries in case of AC power failure
- * Linear sliding Volume and Tone controls
- * Fine Tuning for precise tuning on the Short Wave Bands
- * Automatic Frequency Control (AFC) for drift-free FM reception
- * Squelch Control to eliminate background noise between messages on VHF and UHF Bands
- * BFO switch for reception of Code (CW) and Single Sideband (SSB) signals
- * Moveable station location indicators to aid in returning to frequently-listened-to-stations
- * Telescoping antenna for SW, FM and VHF Bands, plus separate telescoping antenna for UHF Band (both swivel-mounted for superior reception)
- * Two built-in high-efficiency ferrite loopstick antennas for AM, MB and SW1 Bands
- * External Antenna jack
- * Headphone jack for communications type headphones (1/4" plug)
- * Tape Out jack permits taping of SWL stations or other off-the-air signals
- * Aux In jack permits playing external signals through the radio

CONTROL LOCATION AND FUNCTION

This brief description of each control and its function will help you understand and operate your radio.

Band Selection Push-Buttons --- are used to select the desired band of operation. Only one button can be pressed in at one time (pressing a second button automatically pops out the first).

TUNING/FINE TUNING --- use to tune to the desired station as indicated on the slide rule tuning dial. Read the dial scale associated with the Band Selection Button which is pressed down. The outer knob is the main tuning which moves the dial pointer. The inner knob is for Fine Tuning and functions only for the Short Wave Bands (it does not move the dial pointer).

Slide Rule Dial Scale --- provides frequency markings for each band of operation. The scale to read depends on which Band Selection Button is pressed down.

Moveable Station Location Indicators --- or logging markers as some might prefer to call them, can be used to indicate the position of the Tuning pointer when tuned to a station you want to be able to return to later on. Use them to mark your favorite Short Wave station, a local Police station or other stations you constantly listen to.

Meter --- provides two functions: when operating from batteries **and not tuned to a station** it indicates the condition of the batteries (if reading in the blue area, the batteries are OK --- if reading outside the blue area, in the silver area, the batteries must be replaced).

When tuned to a station, the meter provides a relative indication of the strength of the signal (adjust Tuning for maximum meter reading).

VOLUME Control --- is used to control the level of sound from the speaker or headphones.

TONE Control --- is used to adjust the tonal quality of sound. In the center position "0", the tone response is "flat." Moving this control to the right "1 through 5" emphasizes the high frequency tones. Moving it to the left "1 through 5" emphasizes the low frequency tones. Use the position which provides the most pleasing tone and best sound for understanding the signals you are tuned to.

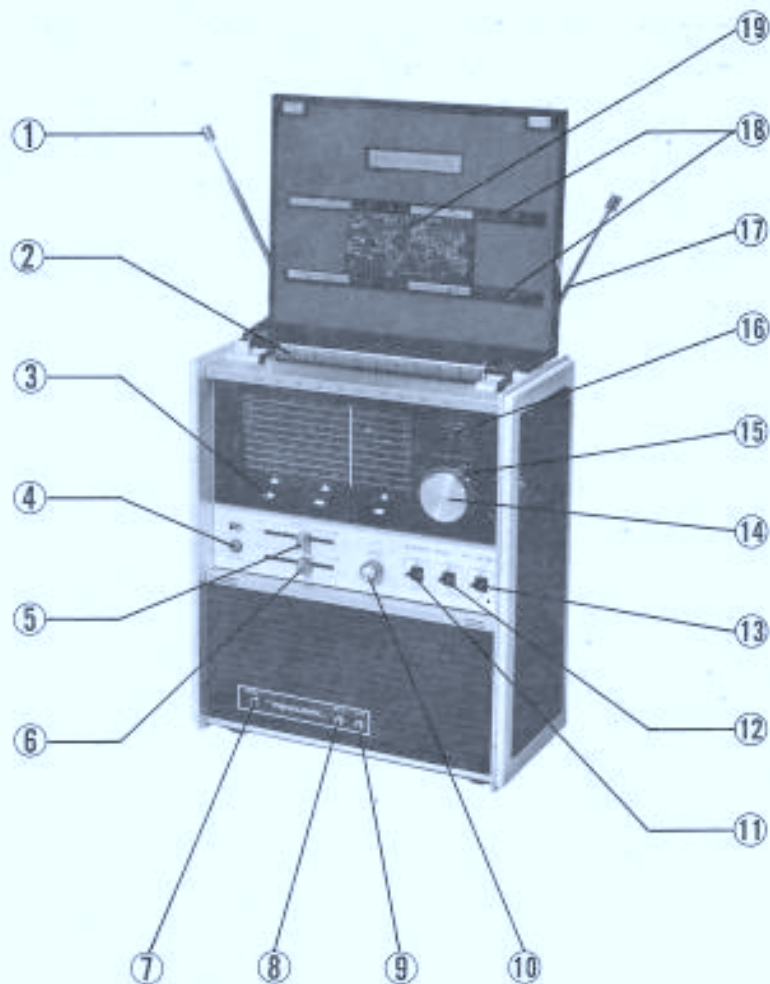


FIGURE 1.

- | | |
|--------------------------------|--------------------------------|
| 1. Telescopic Antenna | 12. BFO Switch |
| 2. Band Selector Buttons | 13. Power Switch |
| 3. Station Location Indicators | 14. Fine Tuning Knob |
| 4. Dial Light Button | 15. Tuning Knob |
| 5. Slide Volume Knob | 16. Meter |
| 6. Slide Tone Knob | 17. Telescopic Antenna for UHF |
| 7. Headphone Jack | 18. World Time Dial |
| 8. Tape Out Jack | 19. World Time Map |
| 9. Aux In Jack | 20. External Antenna Jack |
| 10. Squelch Control Knob | 21. Battery Compartment Lid |
| 11. AFC Switch | |

DIAL LIGHT Button --- when operating on batteries, press this button to illuminate the Dial Scale. Use sparingly to conserve batteries.

SQUELCH Control --- functions on the three VHF and the UHF Bands. When properly set it will silence the radio between station transmissions. Use it as follows: Tune to the desired frequency; then, between transmissions, adjust in a clockwise direction until the noise just ceases --- do not rotate past this point. Now, when a transmission is made, you will hear it, but will not be annoyed by the background noises between messages.

NOTE: Too "high" a setting will block reception of weaker signals. When not in use, leave this control set to the "Out" position.

AFC (Automatic Frequency Control) Switch --- functions only when operating on the FM Band. When "In", it "locks in" the station, eliminating any tendency to drift off-frequency. Use it as follows: Tune in the desired FM station with the switch in the "Out" position; then switch "In".

NOTE: When two FM stations are located close together on the dial, the stronger one may be picked up when AFC is "In"; if you wish to listen to the weaker station, leave AFC in the "Out" position.

BFO (Beat Frequency Oscillator) Switch --- functions only when operating on AM, MB or one of the SW Bands. When in the "In" position you can receive Morse Code signals (CW) or Single Sideband signals. Both of these are explained later on in this manual. For normal use, leave in the "Out" position.

POWER Switch --- turns power "On" and "Off" for the radio.

World Map/Time Zone --- helps you determine the time of day in any part of the world. Locate your position and time zone on the map; then, slide the map to the left or right to match up your time zone with your present time. Now, you can read the time of any time zone around the world (the numbers 13 through 24 refer to the PM hours 1 through 12).

PHONES Jack --- plug in communications-type headphones for private listening; which also provides more precise sound for listening to hard-to-understand signals. We recommend Radio Shack Catalog Number 279-200. When the headphone plug is inserted into the jack, the built-in speaker is automatically disconnected.

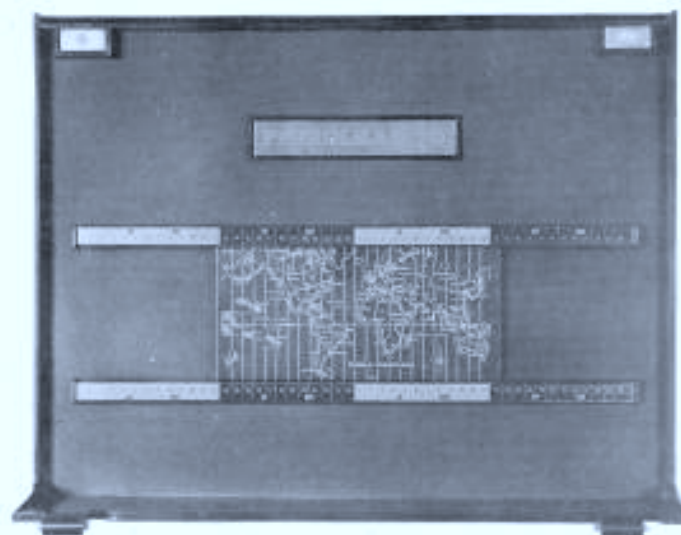


FIGURE 2.

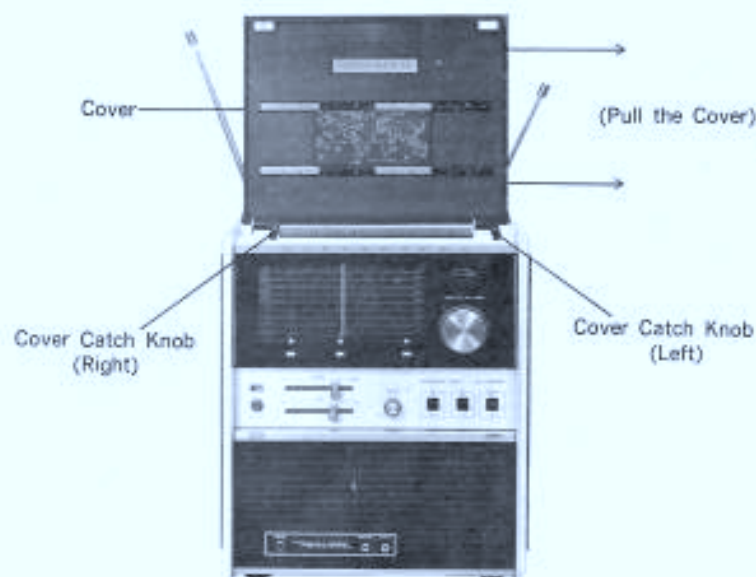


FIGURE 3.

" Removing the cover "

Simultaneously pull the Cover Catch Knobs on both sides toward you. Then move the cover to you right and remove it. Reverse the process to replace.



FIGURE 4.

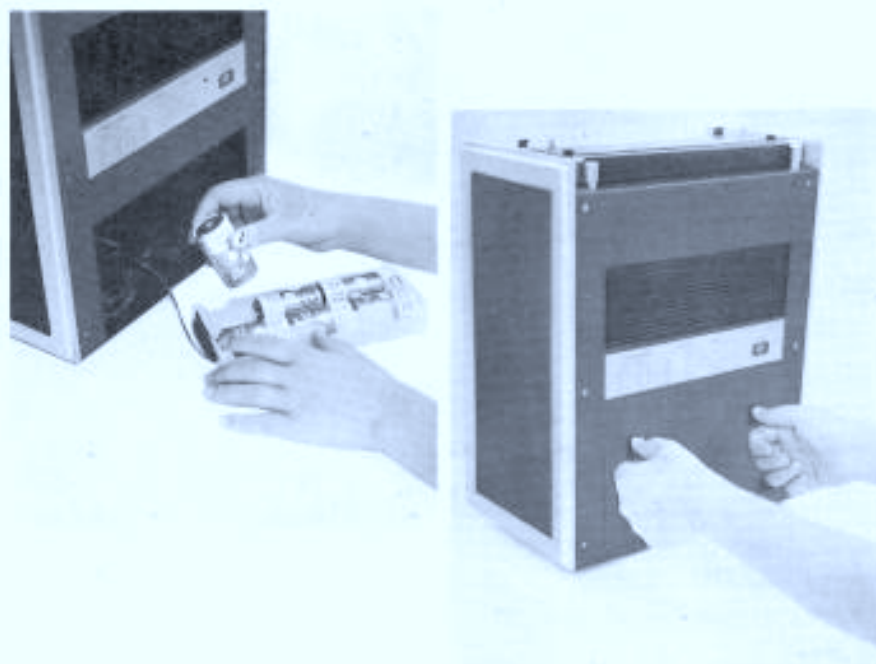


FIGURE 5.

TAPE OUT Jack --- provides an output for recording the signal being received by the radio. This is particularly useful for Short Wave Listeners who make recordings of their monitoring activities. You can also make off-the-air recordings of FM broadcasts, etc.

AUX IN Jack --- permits you to play an external signal through the radio. Use a tape recorder or other high-level signal source for such an external signal.

Short Wave, FM and VHF Telescoping Antenna --- the antenna at the left rear of the radio is for the Short Wave, FM and VHF Bands. Pull it up and extend it to its full length; it is swivel-mounted so you can rotate it for best reception.

UHF Telescoping Antenna --- the antenna at the right rear of the radio is for the UHF band only. Pull it all the way up, extend it to its full length and swivel it for best UHF reception.

The Cover is not only hinged and provided with magnetic latches, but it also is removeable. Refer to Figure 3 for instructions on how to remove the cover.

The Handle swings back and out of sight when the radio is in use. It swings up for easy carrying when you want to move your radio.

The External Antenna jack on the rear of the radio is for connecting an external antenna for improved reception on the Short Wave, FM and VHF Bands (it has no effect on the UHF band). Select an antenna for the desired band of operation. Your local Radio Shack store carries antennas specifically designed for Short Wave, FM or specific VHF Bands; follow the instructions provided with each for proper installation.

The Battery Compartment holds the line cord and the battery holder. To open, press down on the catches as shown in Figure 5. For AC operation, remove the line cord and feed it out through the slot provided. For Battery operation, install six type "D" batteries in the battery holder -- be sure to observe proper battery polarity as indicated inside the holder. The battery holder slides into the battery compartment with the edges.

with the edges fitting into the slots provided. Be sure the connector is snapped firmly onto the end of the battery compartment. Replace the battery compartment cover and press the catches up to lock in place.

CAUTION:

Never leave weak or dead batteries inside the radio (they can leak and cause permanent damage to your radio). Also, if you do not intend to use your radio for a few weeks or more, remove the batteries.

For best results (and maximum economy) we recommend you use Radio Shack Catalog Number 23-451 or 23-550 type "D" batteries (6 required).

The **Line Cord** is for connecting to a source of 120 volts, 60 Hz, AC power.

USING YOUR RADIO

If you are going to operate your Radio from batteries, be sure to install them as noted previously. For AC operation, remove the AC line cord from the battery compartment and plug it into a source of 120 volts, 60 Hz AC power. Close the battery compartment and lock the cover in place.

1. Turn power "on" using the POWER switch.
2. Choose the band of operation by pressing down on the desired Band Selection Push-button. Extend the appropriate antenna (for AM and MB, a built-in loop-stick antenna is provided --- no need for the external telescopic antenna).
3. Set VOLUME to about "3" and adjust TUNING for the desired station as indicated on the slide-rule dial scale.
4. Set VOLUME and TONE as required.
5. When listening to the VHF and UHF Bands, the SQUELCH control can be adjusted to eliminate the annoying background noise between station transmissions. Adjust this control in a clockwise direction to just cut out background noise when a station is not transmitting. When the station transmits again, the signal will be heard. Experiment with this control a little to get the "feel" of it. NOTE: Too "high" a SQUELCH setting will block out some of the weak stations. **When not in use, leave SQUELCH set to the "Out" position.**

6. When tuning FM stations, leave AFC switch in the "Out" position. Then when you have tuned the station precisely, flip AFC "In"; this will eliminate any tendency for the radio to drift off-frequency. Remember that AFC functions only on the FM Band.
7. When tuning stations on the Short Wave Bands, use the main TUNING knob to tune close to the desired frequency and then use FINE TUNING to tune precisely. The FINE TUNING control does not move the dial pointer and it functions only for one revolution of the control.

NOTE: If you desire to tune to signals being broadcast in Morse Code or Single Sideband, flip BFO switch to the "In" position; in this position, as you tune a signal, you will hear a tone on each side of each signal --- as you tune, the pitch of this tone varies. With Morse Code, tune for the most pleasing tone. With Single Sideband signals, tune for the most natural voice tones (this can be touchy, so adjust FINE TUNING very carefully). BFO functions only on the Short Wave, Marine Band and standard AM Band. Its purpose is limited to the reception of Morse Code and Single Sideband signals.

NOTE: When using your Radio with external signals --- playing external signals through the AUX IN jack --- the SQUELCH control must be set to the "Out" position.

NOTES ON OPERATING ON EACH BAND

To help you understand and appreciate what to expect from each band, here are some helpful notes.

Reception of signals on other than AM and FM Bands varies with many things. On the MB and SW Bands, reception will depend on your location, time of day (and if you use an external antenna). On the VHF and UHF Bands, transmissions are brief and intermittent (long periods of time may elapse between transmissions). On many of these special services frequencies, you may hear only one side of the conversation. The other half of the transmission may be on another frequency or may be too weak or distant for reception from your location.

AM Broadcast Band --- you are most familiar with this band. Reception may be improved by rotating or moving the radio.

Marine Band (MB) --- in this band you will find Maritime Services (ship radio and navigational information), Coast Guard, pleasure craft, Amateur Radio and International Short Wave radio stations. If you are near an ocean, one of the Great Lakes or a large river, you should find considerable activity on this band (especially 2 to 2.8MHz). Once again, reception may be affected by the positioning of the radio (rotate or move for best reception).

Short Wave Bands (SW1, SW2, SW3) --- on these bands you will find numerous services: International Short Wave, Amateur Radio, navigational and some industrial and governmental agencies. We have given a very abbreviated listing of Short Wave International Radio Stations later on. For a more complete discussion of Short Wave Listening, we urge you to obtain a copy of Radio Shack's publication *Introduction to Short Wave Listening* (available in your local Radio Shack store).

VHF LO Public Service Band --- here you will find many interesting stations: Armed Forces, Police, Fire, Highway, Emergency Services, many industrial services, taxis, Trucks, Railroads, etc. Activity will depend on your location; the closer you are to centers of such services, the greater the possibility of hearing these types of signals.

FM Broadcast Band --- is the standard FM band. Range of reception is about 100 miles under good conditions. Most activity will be near large cities.

VHF AIR Aeronautical Services Band --- is primarily for aircraft communications: navigational aids, air traffic control, control tower, aircraft, airport utility, emergency, etc. Activity will be most noticeable near traffic control stations, airports and large cities.

VHF HI Public Service Band --- here again you will hear many interesting stations: aeronautical mobile, Civil Air Patrol, Amateur Radio, various agencies of the Federal Government, Police, Fire, Highway, Conservation, Emergency, many industrial services, Maritime Mobile, U.S. Weather Service (162.40 to 162.55 MHz marked "WX" on the dial scale), Radio Navigation Satellites to name just a few. Activity will depend on your location; the closer you are to the center of such activities, the greater the possibility of receiving such signals.

UHF Public Service Band --- here you will monitor Police, Fire, Highway, Conservation, various industrial services, taxis, trucks, radio paging and maybe even some broadcast station remote pickup signals.

This is a band of service that is relatively new --- it is becoming more and more active especially in large metropolitan areas.

NOTE

On the VHF and UHF Bands many of the special services use very brief and intermittent transmissions. Also, they may be multi-frequency (you may hear only one side of the conversation, the other side may be on another frequency). Thus, you may have to listen for some time before you hear stations. Don't give up, these frequencies are used, but you must wait until a station comes on.

Your location has a great bearing on the activity and the type of signals received. In metropolitan areas you will monitor many aircraft, public service and transportation transmissions. In rural areas, you will pick up more utilities, conservation and others. Near the Great Lakes or costal regions you will hear much Maritime activity. Be on the look-out for special types of broadcasts in your area.

Many areas in the USA now have a special National Weather Service broadcast at 162.40 or 162.55 (tune to "WX" on VHF HI).

For additional information, we recommend Radio Shack's publication *How to Listen to Police, Fire and Aircraft Radio*.

SHORT WAVE LISTENING

This is a fascinating hobby that many people enjoy. There is a lot to it ... the entire field of Short Wave Listening (SWLing) and other forms of radio listening and monitoring is far too broad for us to attempt to cover even a small portion in this manual. As your interest grows, we know you will want to subscribe to one of the periodicals, purchase books and maybe join one of the SWL clubs or associations.

We can not possibly present a complete list of representative radio stations around the world, but will give a brief listing of some of the more important international radio stations you might hear on the SWL bands.

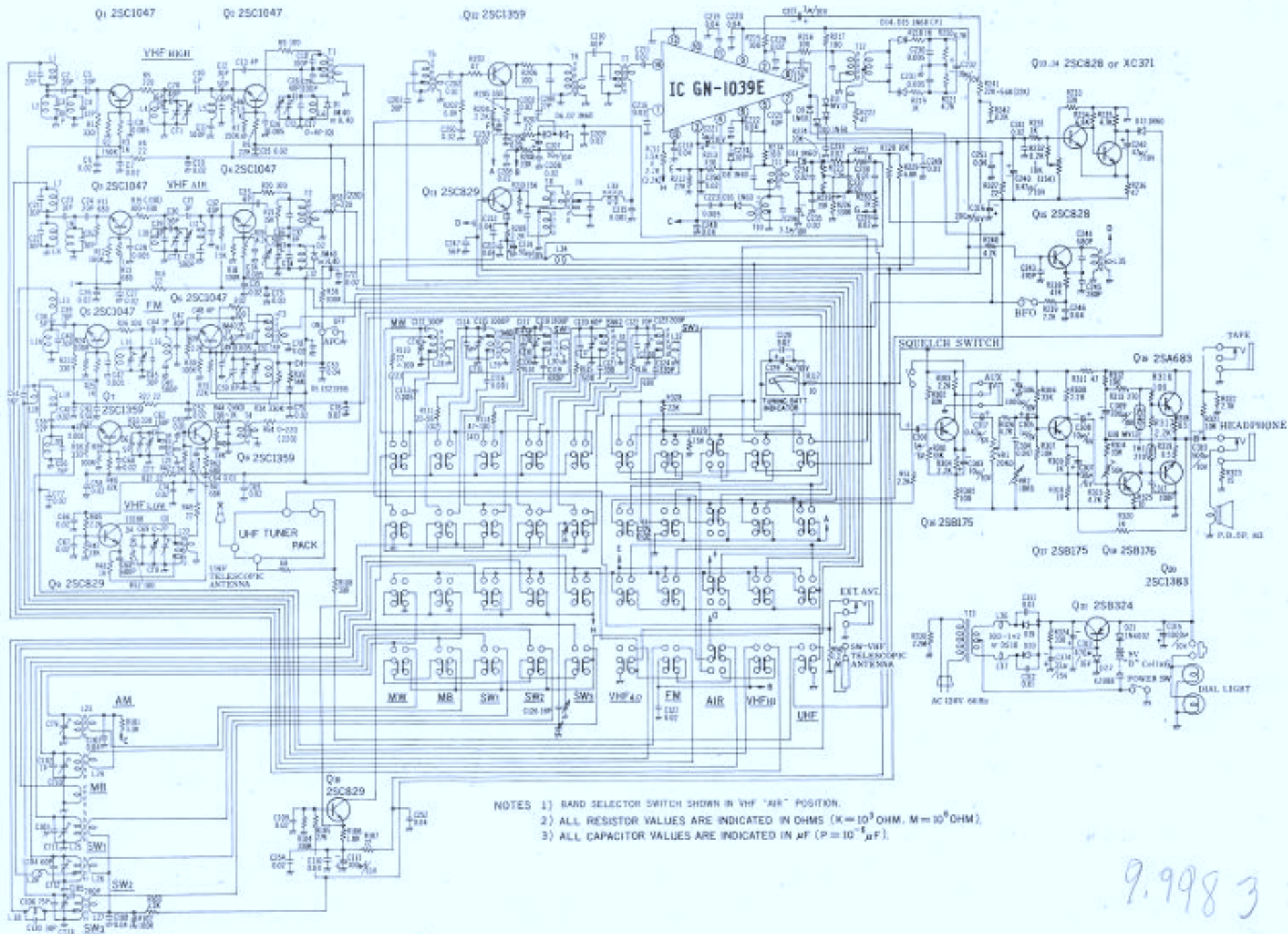
Remember, the Short Wave Bands are not the only frequencies where you can monitor interesting and exciting radio broadcasts. There are many other radio services on other bands. Again, we refer you to the many books and magazines covering this vast subject.

If you intend to follow up on this phase of listening, we urge you to obtain a copy of the Radio Shack *Amateur/ CB-SWL Radio Station Log Book*. It contains additional notes and aids for this hobby.

A brief listing of representative International Short Wave Radio Stations.

Time (GMT)	Frequency (MHz or Mc)	Location (and Call)	Time (GMT)	Frequency (MHz or Mc)	Location (and Call)	Time (GMT)	Frequency (MHz or Mc)	Location (and Call)
0000	7.250	Moscow	0630	4.911	Zambia	1400	11.850	Mongolia
	9.690	Argentina LRA33		7.090	Albania		13.750	North Korea
	15.095	Peking, China	0700	6.050	Ecuador HCJB		17.820	Turkey TAV
0100	6.010	Rome		7.120	Burma XZK4	1500	7.250	Vatican City
	6.160	East Germany	9.505	Czechoslovakia	9.610		Norway LLG	
	9.225	Cuba	9.670	Switzerland	15.125		South Korea HLK41	
0200	17.840	Australia	0730	5.990	Canada CKNA	1600	21.545	Ghana
	6.025	Portugal		7.295	Monaco		9.555	Finland OIX2
	9.715	Philippines DZH7	15.120	Poland	15.220		South Africa	
0300	9.745	Ecuador HCJB	0800	3.205	Solomon Islands VQ03	1700	14.420	Sweden
	4.885	Kenya		6.090	Liberia ELBC		9.535	Angola
	5.808	Peru OAX7L	0830	17.760	Pakistan		9.565	Ethiopia ETLF
6.140	Hungary	9.715		Philippines DZF5	1800	17.735	Cuba	
0400	9.525	Toyko	0900	15.305		Switzerland	11.810	Lebanon
	11.850	Norway		6.080		New Zealand ZL7	1900	5.930
	15.125	South Korea HLK41	1000	9.640	London	9.865	Indonesia YDF8	
15.345	Taiwan BED49	7.240		Kenya	15.155	Liberia ELWA		
0500	6.070	Bulgaria	1100	9.560	India VUD	2000	7.265	Albania
	9.510	London		9.685	Taiwan BED73		11.940	Rumania
	14.520	North Korea	9.620	Sweden	17.740		London	
0530	6.145	West Germany DMQ6	1200	11.715	Indonesia YDF2	2045	9.725	Israel 4XB51
	9.654	South Korea HLK5		15.220	South Africa		15.290	United Arab Republic
	9.670	North Vietnam	1230	3.300	British Honduras		6.070	Bulgaria
11.640	North Vietnam	9.575		Rome	7.125	Poland		
0600	4.985	Malaysia	1300	4.870	Ceylon	2200	6.010	Rome
	5.940	Cambodia		15.165	Denmark OZF4		7.200	Yugoslavia
	7.390	Syria	7.125	Poland	7.260		Taiwan BEC71	
0600	11.975	Liberia ELWA	2215	9.760	North Vietnam	2300	11.965	Moscow
	21.535	Liberia ELWA		11.850	Paris		7.580	North Korea
								15.190

NOTE: Times noted above are listed in Greenwich Mean Time (GMT Time Zone noted on your World Timetable -- World Map/Time Zone chart).



- NOTES
- 1) BAND SELECTOR SWITCH SHOWN IN VHF "AIR" POSITION.
 - 2) ALL RESISTOR VALUES ARE INDICATED IN OHMS ($K=10^3$ OHM, $M=10^6$ OHM).
 - 3) ALL CAPACITOR VALUES ARE INDICATED IN μF ($P=10^{-8}$ μF).

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SCHEMATIC DIAGRAM

SERVICE AND MAINTENANCE

Only the highest quality parts are used in your Radio, therefore it will require little or no service. However, there are a few things you can do to insure maximum life and performance.

Never leave the radio in high temperature areas such as inside your car sitting in the hot sun. Excessive temperatures can damage internal parts. Never clean the case with a strong thinner (nail polish remover, benzine, etc.); a slightly damp cloth normally will be adequate.

Never leave dead or weak batteries in the radio. If you do not intend to use the radio for a few weeks, remove the batteries. Old, weak batteries can leak chemicals (even so-called "leak-proof" types). These chemicals can cause severe damage.

When batteries are weak (reading in the silver area on the meter when tuned off-station), replace them with Radio Shack Catalog Number 23-451 or 23-550 "D" batteries (six required).

If your radio ever should require service, take it to a local Radio Shack store. They have qualified people, equipment and parts to properly service your unit.