LIMITED WARRANTY

This Bearcat® receiver is warranted to the original consumer purchaser to be free from defects in material and workmanship for a period of one (1) year from the date of purchase as shown on purchaser's receipt.

Electra will repair or replace, AT ITS OPTION AND FREE OF CHARGE, during the warranty period, any part which proves defective in material or workmanship under normal installation, use, and service, provided the receiver is returned to our factory (address below) or to one of our authorized Service Centers (list enclosed), TRANSPORTATION CHARGES PREPAID. Receivers returned to our factory or authorized Service Center must be accompanied by a copy of purchase receipt. In the absence of such purchase receipt, the warranty period shall be one (1) year from the date of manufacture as indicated by the serial number on your unit.

Any damage to this receiver as a result of misuse, abuse, neglect, accident, improper installation, destruction or alteration of the serial number, repair or alteration outside our factory or Service Center, or any use violative of instructions furnished by us WILL VOID THE WARRANTY. THIS WARRANTY IS LIMITED TO DEFECTIVE PARTS REPAIR AND/OR REPLACEMENT ONLY AND EXCLUDES ANY INCIDENTAL AND CONSEQUENTIAL DAMAGES CONNECTED THEREWITH.

Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state. In the event of a problem with warranty service or performance, you may be able to go to a small claims court, a state court, or a federal district court.

Electra Company
Division of Masco Corp. of Indiana
300 East County Line Road
Cumberland, Indiana 46229

International Business Office
Suite 102 • 1828 Swift
North Kansas City, Missouri 64116
Telex 426145 ELECTRA NKSC

PO58000

OWNERS MANUAL

Bearcat® 20/20

40 Channel Crystalless Scanner

Aircraft • Marine • Public Service

SEVEN BAND SCANNING RECEIVER

Low Band	High Band
Aircraft	UHF Band
2-Meter Amateur	UHF (T) Band
	70 CM Amateur

MONITORS VHF and UHF RADIO SERVICES

Hams	Utility services	Special Emergency
Police	Industry	Disaster Relief
Government	Business	School Buses
Forestry	Hospitals	Transportation
Conservation	Ambulances	Taxicabs
Mobile telephones	Automobile Emergency	Railroads
Press	Marine	Paging
Fire	Manufacturers	Trucks
Aircraft		

MANUFACTURED UNDER ONE OR MORE OF THE FOLLOWING PATENTS

3,961,261 3,962,644 4,027,251 4,082,594 4,100,497 4,123,715
and patents pending

Electra Company
Division of Masco Corp. of Indiana
300 East County Line Road
Cumberland, Indiana 46229

International Business Office
Suite 102 • 1828 Swift
North Kansas City, Missouri 64116
Telex 426145 ELECTRA NKSC

TABLE OF CONTENTS

UL® UNDERWRITERS LABORATORIES LISTED

Certified in accordance with FCC Rules and Regulations Part 15.63 as of date of manufacture.

CAUTION

TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

For future reference, write the model number and serial number below. You will find them printed on the bottom of your radio.

Model No. BEARCAT 20/20 Serial No. 27796

Purchased from: R.C. Date JAN 15 '83

TECHNICAL SPECIFICATIONS*

Size:	10 5/8" W x 3 ½" H x 8" D
Weight:	5 lbs.
Cabinet:	Embossed Steel
Power:	117 Vac, 50/60Hz, 20W, 13.8Vdc, 9W
Antenna:	Telescoping antenna (supplied) Connector provided for external antenna (50-70 ohms)
RF Sensitivity:	0.4uV 30-50MHz 0.4uV 144-174MHz 0.8uV 421-~~512~~MHz 490 MHz (±5KHz deviation 12db SINAD) 1.0uV for 10db S/N Aircraft 60% mod.
IF Selectivity:	-55db @ +25kHz
Frequency Coverage:	Low Band 30-50MHz Aircraft 118-136MHz 138-144 MHZ 2-Meter Amateur 144-148MHz High Band 148-174MHz 70 CM Amateur 421-450MHz UHF Band 450-470MHz UHF-T Band 470.0125-~~512~~.45MHz 490.0
Scan/Search Speed:	Selectable 5 or 15 channels per second
Audio Output:	2 Watts RMS, 8 ohms, 10% THD (max.)
Front Panel:	Volume (ON/OFF) Squelch (Auto. Squelch) Display Keyboard Speaker Position A & B
Rear Apron Connectors:	13.8Vdc External Antenna External Speaker Jack 117Vac Receptacle

***Specifications are typical and subject to change without notice.**

SAFETY PRECAUTIONS

Although your Bearcat 20/20 is listed with Underwriters Laboratories for complying with standards of safety, a review of common precautions is recommended.

- Do not operate this unit if it is wet.
- Never touch an electrical appliance while standing in water or on wet ground.
- Do not tamper with the internal circuitry.
- Do not connect or disconnect the rear-apron power connector when the line cord is plugged in to an ac receptacle.

SAFETY INSTRUCTIONS

Read SAFETY INSTRUCTIONS before operating the radio. Save the SAFETY INSTRUCTIONS for future reference.

Warnings on the radio and instruction manual are for your safety. Operating and use of instructions should be followed to achieve full satisfaction from your radio.

The radio should be connected only to a power source of the type described in the instruction manual and as marked on the radio. Power cords should be routed so that they are not likely to be walked on or pinched. The ac power cord is provided with a gripper for ease in removal from the wall outlet. The power cord should be inspected occasionally for damage.

The radio should be situated so that its location does not interfere with its proper ventilation, and placed away from heat sources such as radiators, heat registers, and other appliances that produce heat. The radio should be used only with a cart or stand recommended by the manufacturer. The radio should be mounted to a wall or ceiling only as recommended by the manufacturer.

The radio should not be operated near water - for example, a wet basement, kitchen sink, or near a swimming pool.

The power cord should be unplugged from the outlet when left unused for a long period of time. Also remove batteries (if used).

Care should be taken so that objects do not fall and liquids are not spilled into the radio.

Damage Requiring Service - The radio should be serviced by qualified service personnel when:

A. The power supply cord or the plug has been damaged; or

B. Objects have fallen, or liquid has been spilled into the radio; or

C. The radio has been exposed to rain; or

D. The radio does not appear to operate normally or exhibits a marked change in performance; or

E. The radio has been dropped, or the enclosure damaged.

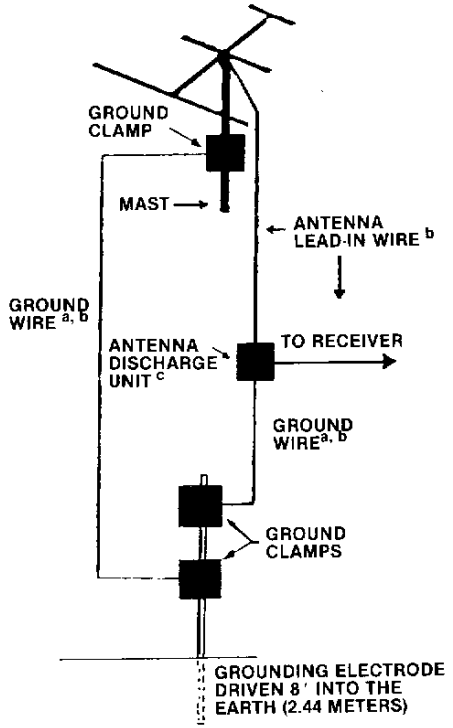
Servicing - The user should not attempt to service the radio beyond that described in the operating instructions. All other servicing should be referred to qualified service personnel.

Cleaning - The radio should be cleaned using a damp cloth.

SAFETY INSTRUCTIONS (Cont'd.)

Outdoor Antenna Grounding - If an outside antenna is connected to the receiver, be sure the antenna system is grounded so as to provide some protection against voltage surges and built up static charges. Section 810 of the National Electrical Code, ANSI/-NFPA No. 70—1981, provides information with respect to proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna discharge unit, size of grounding conductors, location of antenna-discharge unit, connection to grounding electrodes, and requirements for the grounding electrode.

EXAMPLE OF ANTENNA GROUNDING AS PER NATIONAL ELECTRICAL CODE INSTRUCTIONS



[a] Use No. 10 AWG (5.3 mm²)copper, No. 8 AWG (8.4 mm²) aluminum or No. 17 AWG (1.0 mm²) copper-clad steel or bronze wire, or larger as ground wire.

[b] Secure antenna lead-in and ground wires to house with stand-off insulators spaced from 4 feet (1.22 m) to 6 feet (1.83 m) apart.

[c] Mount antenna discharge unit as close as possible to where lead-in enters house.

GENERAL DESCRIPTION

The Bearcat 20/20 uses a microprocessor to make scanning easy. Its versatile keyboard is divided into a Program Section that will allow you to program any frequencies within the stated VHF/UHF ranges on its 40 channels; and an Operation Section that controls scan, lockout of unwanted channels, direct channel access, service search, selectable speed control for both scan and search, priority and programmed search.

The solid state circuits include 2 custom designed integrated circuits that give it unique features. It operates on either 117Vac or 13.8Vdc.

OPERATING INSTRUCTIONS

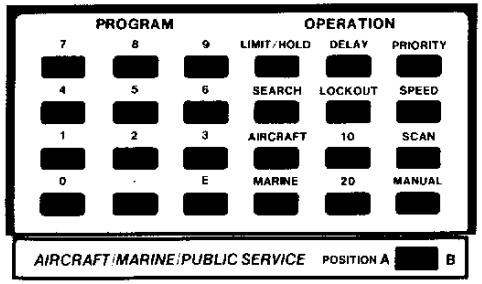
Read the following instructions carefully and enjoy listening to your scanner in minutes.

1. Unpack the unit from the carton (save the carton for possible future use). Check your scanner for shipping damage; if damage has occurred, contact your dealer immediately.
2. Install two AA batteries. See picture on bottom of radio or battery details page 11.
3. Attach the power cord to the radio and then into a 117Vac outlet.
4. Insert the threaded end of the antenna into the hole on the top of the scanner. Screw it finger-tight and extend it fully.
5. Turn your scanner ON by turning the volume control clockwise 1/3 of its rotation.
6. Rotate the squelch control clockwise until you hear background noise; then turn it back counterclockwise until the noise disappears.
7. You are ready to program frequencies in your scanner. It is **scanning** at **fast speed** as indicated by the rolling display.

FRONT PANEL CONTROLS

1. ON/OFF-VOLUME: Turns the receiver ON and OFF and adjusts the sound level.
2. SQUELCH: Allows the radio to scan or search for signals, and keeps radio quiet unless a signal is being received.
3. AUTO SQUELCH: A convenient, fixed squelch setting.
4. KEYBOARD: Simply punch in the desired frequencies you wish to monitor. It also controls automatic scan or manual channel select, bank select, service search, search limits, starts or holds the radio searching, programs the delay and lockout features into any desired channel.
5. POSITION A AND B SWITCH: Allows user to switch between two alternate sets of 20 channels each.

KEYBOARD



PROGRAM KEYS:

Numeric keys [0] thru [9] and decimal point [·] are used to program the frequencies into your scanner. [E] enters frequencies into scan channels from keyboard or from search display.

OPERATION KEYS:

Scan — Starts scan of all displayed channels.

Manual — Stops scan; single steps your scanner through 20 channels.

Lockout — Locks out displayed channel during scan only.

Delay — Delays 2 seconds to receive a reply transmission when on the same channel.

Search — Starts searching for signals between two selected frequencies. Restarts after "hold".

Limit/Hold — Enters two selected frequencies as upper and lower limits; also stops search.

Speed — Selects scan or search rates of 5 or 15 channels per second.

Priority — Samples channel 1 every two seconds and automatically switches to any signal on channel 1 regardless of any other signals.

Aircraft — Provides a single key-press Search of the Aircraft Band (118-136MHz)."Image" interference from nonaircraft signals may be received in this mode. See page 10 for explanation and suggestions.

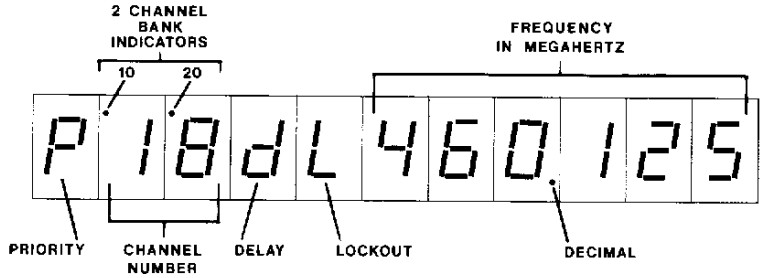
Marine — Searches the marine band (156.05-157.480, 160.625-162.025 MHz).

Position A[ ]B — Selects between two alternate sets of 20 channels each.

10 **20** — Two banks (10 channels each) are each included or excluded.

DISPLAY FEATURES

The display consists of 11 spaces or "windows" in which lighted characters indicate the programming commands of the keyboard and scanning status.



PRIORITY is selected in first space.

CHANNEL 18 is selected in second and third space.

10 Channel bank selected as indicated by dot at upper left of second space.

20 Channel bank selected as indicated by dot at upper left of third space.

DELAY selected in fourth space.

LOCKOUT selected in fifth space.

AIRCRAFT selected in fifth space. [A]

MARINE selected in fifth space. [-]

FREQUENCY 460.125MHz is selected (6th thru 11th spaces) and programmed in channel 18.

PROGRAMMING FREQUENCIES INTO THE RECEIVER

You can program your radio with forty different frequencies, one in each of two alternate sets of 20 channels.

EXAMPLES

To program 162.55MHz in desired channel (for example channel 14):

PRESS:	[Manual]	step to desired channel 14
PRESS:	[1] [6] [2] [·] [5] [5] [E]	
READ:	1 4	162.550
PRESS:	[Manual]	steps for next channel (15)

To program 471.1375MHz in next channel (for example channel 15):

PRESS:	[4] [7] [1] [·] [1] [3] [7] [5] [E]	
READ:	1 5	471.137 (rounded off to 3 places)

If you attempt to program a frequency that is outside the tuning range of the receiver, "Error" appears on the display. If this happens, simply enter a new frequency.

If you made a mistake programming a frequency on a channel, just:

PRESS:	[E]	then program correct frequency

DIRECT (MANUAL) CHANNEL ACCESS

To display any channel manually (for example channel 14) when scanning is stopped, just:

PRESS:	[Manual] [1] [4] [Manual]	
READ:	1 4	in second and third spaces followed by the frequency

If you want to advance from channel 14 to 15, just press [Manual] then read 15 followed by the frequency.

SCANNING

To put your receiver in the "Scanning Mode", adjust the squelch properly (see Page 5). Then:

PRESS:	[Scan]
READ:	Rolling Zeros in the 10 right-most spaces of the display.
	The Bank Indicator Dot for the bank being scanned at that instant.
	Lockout symbols (L) (instead of zeros) representing the channels being skipped.

POSITION A AND B

Your scanner can be programmed for up to 40 different frequencies in two separate sets of 20 channels each.

POSITION A☐B	Selects which of the 20 channels are active at anytime.

PRIORITY

This selectable feature will permit you to hear Channel 1 any time it is active, regardless of any other signals being received at that time. Program most important frequency in Channel 1. Then:

PRESS:	Priority	"P" is displayed
To de-select Priority		
PRESS:	Priority	again. "P" disappears

LOCKOUT

You may wish to lock out certain frequencies and skip over them when scanning.

To program Lockout

PRESS:	Lockout	While on desired channel, the symbol "L" appears in the fifth space of the display.

To remove Lockout

PRESS:	Lockout	again and the "L" will disappear

SPEED

To scan slowly or rapidly (5 or 15 channels per second)

PRESS:	Speed	For slow scan
PRESS:	Speed	For fast scan

SCAN DELAY

Your scanner may be programmed to pause for about two seconds after a transmission on any selected channel. This is useful when both sides of a conversation are transmitted on the same frequency.

To program Delay

PRESS:	Delay	While on desired Channel, the symbol "d" appears in the fourth space of the display.

To remove Delay

PRESS:	Delay	The symbol "d" will disappear from this channel.

SEARCH

To Search for unknown signals between two frequencies in the same band, manually step to the channel you desire to use, (for example Channel 8), then, for example, to Search from 146.500 to 146.950MHz:

PRESS:	Manual	step to Channel 8 (or use Direct Access)
PRESS:	1 4 6 · 5	Limit/Hold (for limit)
READ:	8 146.500	(One limit is entered)
PRESS:	1 4 6 · 9 5	Limit/Hold (for limit)
READ:	146.950	(Other limit is entered) If "ERROR" appears, limits were out of band limits.
PRESS:	Search	If "ERROR" appears, limits were valid but not in the same band.

When an active channel is found, the Search stops and the frequency is displayed.

If you desire to stay on that frequency

PRESS:	Limit/Hold	(for hold)

To resume searching without changing Search limits

PRESS:	Search

To enter a frequency found by Searching in that channel

PRESS:	Limit/Hold	then	Enter

To continue searching between the same limits, manually select another channel and press Search .

Search the Aircraft band (118-136MHz): as above, or

PRESS:	Aircraft	The letter "*A*" will appear in the fifth space on the display.

If searching is stopped by a continuous signal or "image" interference, such as ham repeaters or cab dispatch, press Aircraft repeatedly to continue. If interference persists, Search using limits that exclude the interference.

To search the Marine band (156.05-157.48MHz, 160.625-162.025MHz):

PRESS:	Marine	The symbol "–" will appear in the fifth space on the display.

EXTERNAL ANTENNA

The telescoping antenna provided with your Bearcat 20/20 is recommended for most monitoring. For weak-signal reception, or for electrically-noisy locations, an external antenna may be used. Always use coaxial cable for lead-in. RG-58U is recommended for lengths of up to 100 feet.

Your Bearcat 20/20 is equipped with an automotive type external antenna jack, and a mating plug (supplied) must be used.

An outside antenna need only be high enough to clear surrounding obstructions. Above all, STAY AWAY FROM POWER LINES! You may be killed upon contact of the antenna with a power line.

EXTERNAL SPEAKER

Although the internal speaker of the scanner will provide ample room volume, in some applications an external speaker such as the Bearcat B-45 may be desired. The external speaker should be plugged into the rear-apron jack which will cut off the internal scanner speaker.

BATTERY

Your scanner is not supplied with a battery. See label on the bottom of your scanner for battery type and installation instructions. It is recommended that you install the proper battery before you start programming and while the set is unplugged. The battery provides power for the channel memory in the event of a power failure or when the power cord is unplugged. While unplugged, the batteries provide power to the channel memory for about one year.

While the receiver is plugged into 117Vac, the battery is not in use and the memory is activated by the power supply.

NOTE: Anytime the BC-20/20 is turned off or disconnected from its power source, the status of priority banks and the programmed search limits will be lost; however, delay and lockouts are retained. The radio always turns on scanning in the fast condition showing bank 10.

BATTERY INSTALLATION

The battery compartment is held with two screws. Remove the screws and carefully swing the compartment out of the receiver. Clean the terminals with a pencil eraser, if necessary. Insert the proper batteries into the holder. Reassemble the holder and secure it with the screws. (See picture on the bottom of the receiver).

MOBILE INSTALLATION

In some areas, the use of unauthorized mobile police receivers is unlawful; be sure to check with local authorities before installing your unit.

Your Bearcat 20/20 may be installed in any vehicle or boat which has a 12-volt, negative-ground electrical system.

A mounting bracket has been provided for your convenience.

1. Using the mobile mounting bracket, select a location under the dash to hold the scanner in the desired position.
2. Mark and drill two mounting holes using a 7/64 drill bit; secure the bracket with two #6 self-tapping screws (provided).
3. Insert the two plastic T-washers (provided) into the bracket holes, flanges inward, and secure the scanner in place with the two mounting bolts and washers (provided).
4. Connect the dc power cable provided to the insulated terminal on the rear apron of the receiver; attach the other end of the cable to the 12V battery.

   Note: The receiver should be connected to an uninterrupted 12V source in the car in order to hold channels in memory.

   Be sure the radio cabinet is well-grounded to the car metal through the mounting frame; otherwise, connect a piece of wire from the ground screw on the rear apron of the radio to the metal body of the vehicle.
5. Connect an appropriate mobile monitor antenna designed for multiband coverage to the scanner. If necessary, the automotive antenna, extended about 18 inches, can be used with fair results.

USER HINTS

Your scanner is a versatile instrument. The following operating hints will help you use all its features:

1. Always remember when programming, the [E] key must be depressed in order to enter the frequency desired.
2. Never turn the radio OFF by pulling the AC cord from the wall socket. Always turn the ON/OFF volume control OFF first, then disconnect the line cord when you must move the radio.
3. When memory is lost, it is corrected simply by reprogramming the desired frequencies.
4. When searching, a strong signal may cause the scanner to "lock-on" just prior to the actual frequency. (e.g. weather may be received on 162.545 rather than the correct frequency 162.550). This is easily corrected by pressing the Search button again.
5. This receiver has high noise immunity because of the quieting squelch system. However, in cases of strong interfering noise or signals, it may be desirable to reduce the length of the antenna to reduce noise pick-up below a critical level. This may be very effective in medium and strong signal areas.
6. When programming, be sure to press each key firmly in the center — this assures registering each desired number and avoid errors.
7. When moving or shipping the radio, remove the telescoping antenna to avoid damage to it or to the internal circuit assemblies.

SERVICE

If your scanner does not seem to be functioning properly:

1. Refer to operating instructions to confirm that the proper procedure for operation has been followed.
2. Be sure the radio is plugged into a working ac outlet.
3. Is it turned ON?
4. Check that the telescoping antenna is properly installed.
5. If memory is lost after a power failure, check for a dead battery.
6. If "Error" appears on readout, you have entered an invalid frequency.
7. While using the single key-press **Aircraft** search, "image" interference from ham repeaters, cab dispatch, mobile telephone, etc. may stop search. This may be unavoidable in your area and does not indicate failure of the radio.
8. If it is then determined that the receiver requires servicing, refer to the warranty instructions enclosed with your unit for the proper repair facility.
9. When preparing the receiver for shipment, **remove the telescoping antenna, batteries and ac power cord**.
10. Pack the unit in its original packing carton and include a brief, concise description of the observed problem you are having along with your name, address, phone number and a copy of your purchase receipt.

BIRDIES

All scanners using frequency synthesized circuits generate signals called "Birdies". Those signals may interfere with the search frequencies on your scanner. The BC-20/20 is relatively free of this problem.

If during Search the receiver encounters a "birdie", the scan will most likely stop. In order to resume searching just press the Search button.

The following is a list of "birdie" frequencies:

32.55
33.37
38.13

FREQUENCY ALLOCATIONS

The electromagnetic (Radio) frequency spectrum is considered a natural resource and the use and pollution of this public-owned communication medium is regulated by the Federal Communications Commission. Channel allocation to various services and the assignment, licensing and operational regulation of qualified users are all administered by the F.C.C.

As few as a dozen or as many as 600 of these channels may be in use in your community. Some channels are shared — usage is mixed and changing. You can learn about most of the active frequencies in your area by searching with your receiver.

Because of the short-range nature of VHF and UHF FM communications, frequencies allocated to services in one geographical location will not be heard more than 25-50 miles distance (an exception is "skip", when signals bounce back to earth from the ionosphere). For this reason, a separate frequency directory must be compiled for each monitoring area.

Approximate block allocations . . . and even some discrete frequencies . . . covered by your receiver are shown below. Only the first and last frequency in each group is shown. These are not necessarily active in your area.

ABBREVIATIONS

Police	P.D.
State Police	St. P.D.
Fire Department	F.D.
Special Emergency	Sp. Emer.
Highway Maintenance	Hwy.
Automobile Emergency	Auto. Emer.
Government	Govt.
Local Government	L. Govt.
Business Radio	Bus.
Manufacturers	Mfg.
Special Industrial	Sp. Ind.
Broadcast Remote	BC. R.
Mobile Telephone	Mob. Tel.
Radio Paging	Page.
Motion Picture	Mot. P.
Power Utilities	Power
Petroleum	Pet.
Forestry-Conservation	For. Cons.
Forest Products	For. Prod.
Railroad	R.R.
U.S. Weather Bureau	U.S.W.B.
U.S. Coastal & Geodetic Survey	U.S.C.G.S.
National Parks	Nat. Pk.
Bureau of Reclamation	Bur. Recl.
Department of Agriculture & Forestry	Agr. & For.
Land Transportation	Land Tr.

30-50 MHz Band

30.01 - 30.56	Govt.
30.58 - 30.64	Sp. Ind.
30.66 - 31.24	Pet. For Cons. Bus., For. Prod.
31.26 - 31.98	Sp. Ind., For Cons.
32.00 - 33.00	Govt.
33.02 - 33.16	Hwy., Sp. Emer., Bus
33.18 - 33.38	Pet.
33.40 - 33.98	F.D.
34.00 - 35.00	Govt.
35.02 - 35.18	Bus.
35.22 - 35.66	Mob. Tel. & Page
35.70 - 35.73	Bus.
35.74 - 35.98	Sp. Ind. & Bus.
36.00 - 37.00	Govt.
37.02 - 37.44	F.D., P.D. & L. Govt.
37.45 - 37.86	Power
37.90 - 37.98	Hwy. & Sp. Emer.
38.00 - 39.00	Govt.
39.02 - 39.98	P.D., L. Govt.
40.00 - 42.00	Govt.
42.02 - 42.94	St. P.D.
42.96 - 43.18	Sp. Ind. & Bus.
43.22 - 43.68	Mob. Tel. Page
43.70 - 44.60	Trucks, Bus.
44.62 - 45.06	St. P.D., For. Cons.
45.08 - 45.66	P.D.
45.68 - 46.05	P.D. Hwy., Sp. Emer.
46.06 - 46.50	F.D.
46.52 - 46.58	P.D., L. Govt.
46.60 - 47.00	Govt.
47.02 - 47.40	St. Hwy.
47.42 -	Red Cross
47.44 - 47.68	Sp. Ind., Sp. Emer.
47.70 - 48.78	Power
48.80 - 49.58	L. Govt., Pet.
49.60 - 50.00	Govt.

146 - 174 MHz Band

146.000 - 148.00	HAM
148.010	MARS
148.150	CAP
148.155 - 148.250	MIL
148.290 - 150.750	USN
150.815 - 150.995	Bus.
151.010 - 151.130	Hwy.
151.145 - 151.475	For. Cons.
151.505 - 151.595	Sp. Ind.
151.625 - 151.955	Bus.
151.985 - 152.240	Mob. Tel. (RCC)
152.270 - 152.480	Taxi
152.510 - 152.840	Mob. Tel. & Page
152.870 - 153.020	Sp. Ind. Mot. P

153.050 - 153.440 ..... Pet., For. Prod.
153.470 - 153.725 ..... Power
153.740 - 154.115 ..... F.D., L. Govt.
154.130 - 154.445 ..... F.D.
154.450 - 154.600 ..... Sp. Ind., Pet., Bus.
154.610 - 155.145 ..... P.D., L. Govt., St. P.D.
155.160 - 155.400 ..... Sp. Emer., P.D.
155.415 - 156.030 ..... P.D., L. Govt.
156.045 - 156.240 ..... L. Govt., Hwy., P.D.
156.275 - 157.425 ..... Marine
157.456 - 157.500 ..... Auto Emer.
157.530 - 157.710 ..... Taxi
157.740 - 158.100 ..... Mob. Tel., & Page
158.130 - 158.460 ..... Power, For. Prod., Pet.
158.490 - 158.700 ..... Mob. Tel. (RCC)
158.730 - 158.970 ..... P.D., L. Govt.
158.985 - 159.210 ..... P.D., Hwy
159.225 - 159.465 ..... For. Cons.
159.510 - 160.200 ..... Trucks
160.215 - 161.610 ..... R.R., Marine
161.640 - 161.760 ..... BC. R.
161.800 - 162.000 ..... Marine
162.026 - 162.175 ..... Bur. Recl.
162.400 ..... U.S.W.B.
162.475 ..... U.S.W.B.
162.550 ..... U.S.W.B.
163.125 ..... Indian Affairs
163.175 ..... Bur. Recl.
163.275 ..... U.S.W.B.
163.388 - 163.538 ..... MIL
163.825 - 163.975 ..... Govt.
164.025 - 164.075 ..... U.S.C.G.S.
164.175 - 165.188 ..... Bur. Recl., Nat. Pk., Govt., Agr. & For.
169.300 ..... F.A.A.
169.450 - 170.075 ..... Nat. Pk., Ind., Data
170.150 ..... F.D., BC. R.
170.200 - 170.220 ..... U.S.C.G.S.
170.225 - 170.325 ..... Ind., Land Tr.
170.425 - 170.575 ..... For. Cons.
170.975 - 171.250 ..... Govt., Sp. Ind. & Land Tr.
171.388 - 172.725 ..... Bur. Recl., For. Cons., Ind., Dept. Ag. & For., Govt.
172.775 ..... Nat. Pk.
173.025 ..... U.S.W.B.
173.075 ..... U.S.C.G.S.
173.204 - 173.375 ..... Press Relay, Mot. P., Pet., Bur. Recl.

420 - 512 MHz Band

420.000 - 450.000 ..... HAM
450.050 - 450.950 ..... Remote Br.
451.000 - 451.150 ..... Util.
451.175 - 451.750 ..... For. Prod., Pet., Pwr., Tel. Maint.
451.775 - 451.975 ..... Spec. Ind.
452.000 - 452.500 ..... Taxi, Motor Carrier, & R.R.
452.525 - 452.600 ..... Auto Club
452.625 - 452.975 ..... BC. R., Motor Carr. & R.R.
453.000 - 453.975 ..... L. Govt., P.D., & F.D.
454.000 - 454.975 ..... Mob. Tel. & Page
455.000 - 455.975 ..... Remote Br.
456.000 - 458.975 ..... P.D., F.D., Ind., Land Tr.
459.000 - 459.975 ..... Mob. Tel., Page, & Domestic Public
460.000 - 460.625 ..... P.D., F.D.
460.650 - 462.175 ..... Bus.
462.000 - 462.450 ..... Taxi
462.550 - 462.725 ..... C.B.
462.750 - 462.975 ..... Bus.
463.000 - 463.175 ..... Medical
463.200 - 464.975 ..... Bus.
465.000 - 467.500 ..... P.D., F.D., Sp. Ind., & Land Tr.
467.5375 - 467.7375 ..... C.B.
467.750 - 469.975 ..... Pub. Safety, Bus. Sp., Ind., & Land Tr.

In some large metropolitan areas, 1 or 2 channels of the "TV Band" (470 MHz to 512 MHz) are used for communication purposes. **Your receiver is capable of receiving these frequencies if they are active in your area.** Each T.V. station (channels 14 through 20) utilizes 6 MHz:

470-476 T.V.	Channel 14
476-482 T.V.	Channel 15
482-488 T.V.	Channel 16
488-494 T.V.	Channel 17
494-500 T.V.	Channel 18
500-506 T.V.	Channel 19
506-512 T.V.	Channel 20

Where these frequencies are assigned for communication purposes, in lieu of a T.V. station, the 6 MHz segment is allocated as shown here for channel 14 (470 - 476 MHz).

470.0125 - 470.2875 ..... Domestic Public (Base, Mob.)
470.3125 - 471.1375 ..... Public Safety
471.1625 - 471.2875 ..... Reserve Pool A
471.3125 - 471.4125 ..... Pwr., Tel. Maint.
471.4375 - 471.6375 ..... P.D., Spec. Ind.
471.6625 - 471.7875 ..... Reserve Pool B
471.8125 - 472.3375 ..... Bus.
472.3625 - 472.4375 ..... Taxi
472.4675 - 472.7875 ..... R.R., Motor Carrier, Auto Emer.
472.8125 - 472.9875 ..... Pet., For. Prod., Mfg.
473.0125 - 473.2875 ..... Domestic Public
473.3125 - 474.1375 ..... Public Safety
474.1625 - 474.2875 ..... Reserve Pool A
474.3125 - 474.4125 ..... Pwr., Tel.,Maint.
474.4375 - 474.6375 ..... Spec. Ind. (Mobile)
474.6625 - 474.7875 ..... Reserve Pool B
474.8125 - 475.3375 ..... Bus.
475.3625 - 475.4375 ..... Taxi
475.4625 - 475.7875 ..... R.R., Motor Carrier, Auto Emer.
475.8125 - 475.9875 ..... Pet., For. Prod., Mfg.

The same allocation pattern is repeated for each of the TV channels 14 thru 20. For example, if channel 17 is assigned for communications in your area, "Taxi" would be 490.3625 to 490.4375 and 493.3625 to 493.4375 (corresponding to 472.3625 to 472.4375 and 475.3625 to 475.4375 above). Note that in the example, we added three TV channels (18 MHz to the channel 14 frequencies.

LOCAL SERVICES

	Service	Frequency
CH.1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

LOCAL SERVICES

	Service	Frequency
CH.21		
22		
23		
24		
25		
26		
27		
28		
29		
30		
31		
32		
33		
34		
35		
36		
37		
38		
39		
40		