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**Cobra 89XLR**  
**40-Channel**  
**Solid State Citizens Band**  
**2-Way Radio Base Station**



Cobra Communications Product Group

DYNASCAN CORPORATION

6460 W. Cortland Street  
Chicago, Illinois 60635

**INSTRUCTION MANUAL**  
for  
**Cobra 89XLR**  
**40-Channel**  
**Citizens Band Solid State**  
**2-Way Radio**  
**Base Station**



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## TABLE OF CONTENTS

	Page
Section I: Introduction	
Frequency Range .....	4
FCC Warning .....	5
Section II: Specifications .....	6
Section III: Installation	
Location .....	8
Base Station Antenna .....	8
Mobile Operation/Emergency Power Operation .....	9
Public Address .....	9
Remote Speaker .....	9
Alternate Microphones and Installation .....	10
Section IV: Operation	
A. Control Functions .....	14
B. Indicator Functions .....	17
C. Operating Procedure to Receive .....	17
D. Operating Procedure to Transmit .....	18
Section V: Maintenance and Adjustment .....	19
Appendix	
Ten Code .....	20
A Few Rules That Should Be Obeyed .....	21
How Your CB Can Serve You .....	22
Use Channel 9 for Emergency Messages Only .....	23
Warranty Service Instructions .....	24
Limited 90-Day Warranty .....	24

## THE CB STORY

The Citizens Band lies between the shortwave broadcast and 10-meter amateur radio bands, and was established by law in 1949. The Class D two-way communications service was opened in 1959. (CB also includes a Class A business band and Class C remote control frequencies.) Acquiring the Class D license requires no detailed technical or Morse-code knowledge that is required for a "Ham" license.

In March, 1975, the FCC reduced the cost of a CB license from \$20 to \$4. One license can be good for any number of sets used by a given family or business. Once you receive your Class D license for your equipment, anyone may use it.

For example, though the equipment must be licensed to someone over 18 years of age, a child can use the equipment to talk to another child, or an employee can use the equipment as part of his or her routine services. However, final responsibility of legal operation rests with the CB licensee.

### NOTE

FCC regulations permit only "transmissions" (one party to another) rather than "broadcasts" (to a wide audience). Thus, advertising is not allowed on CB channels because it is *broadcasting*.

HAVE  
A GOOD DAY  
TODAY  
AND  
A BETTER DAY  
TOMORROW!

# Section I

## Introduction

### FREQUENCY RANGE

The COBRA 89XLR provides high level trouble-free performance in the Citizens Radio Service which is comprised of the following frequency assignments:

<b>Channel</b>	<b>Channel Frequency in MHz</b>	<b>Channel</b>	<b>Channel Frequency in MHz</b>
1	26.965	21	27.215
2	26.975	22	27.225
3	26.985	23	27.255
4	27.005	24	27.235
5	27.015	25	27.245
6	27.025	26	27.265
7	27.035	27	27.275
8	27.055	28	27.285
9	27.065	29	27.295
10	27.075	30	27.305
11	27.085	31	27.315
12	27.105	32	27.325
13	27.115	33	27.335
14	27.125	34	27.345
15	27.135	35	27.355
16	27.155	36	27.365
17	27.165	37	27.375
18	27.175	38	27.385
19	27.185	39	27.395
20	27.205	40	27.405

To obtain maximum performance from your COBRA 89XLR, please read carefully the following descriptions and operation instructions.

These frequencies are generated and accurately controlled by a phase lock loop (PLL) circuit, comprised of the latest state-of-the-art integrated circuit technology, thereby ensuring high reliability and excellent frequency stability on the above channels.

### FCC WARNING\*

1. Operation of this equipment requires a valid Station License issued by the Federal Communications Commission. Do not transmit with your equipment until you have received your License. Illegal operation can result in severe penalties. Be certain you have read Part 95 of the FCC Rules and Regulations, before operating your station.
2. License applications are to be made on FCC Form 505, available from your nearest field office. (A copy of this form is included with your new COBRA transceiver.)
3. You are required to maintain a current copy of Part 95 of the FCC Rules, as part of your Station records. Copies of Part 95 are available from the Superintendent of Documents, GPO, Washington, D.C. 20402.
4. Your Station License is to be posted in accordance with paragraph 95.101 of the Rules and an executed Transmitter Identification Card (FCC Form 452-C) is to be attached to each transmitter. (A copy of this form also is included with your new COBRA transceiver.)
5. FCC Rules require that ALL transmitter adjustments other than those supplied by the manufacturer as front panel operating controls, be made by, or under the supervision of, the holder of an FCC-issued 1st or 2nd Class Radio Operator License.
6. Replacement or substitution, of crystals, transistors, regular diodes or any other part of a unique nature, with parts other than those recommended by Dynascan, may cause violation of the technical regulations of Part 95 of the FCC Rules, or violation of the Type Acceptance requirements of Part 2 of the Rules.

\*Excerpted from Part 95 of the FCC Rules and Regulations.

# Section II

## Specifications

### GENERAL

Channels	40.
Frequency Range	26.965 to 27.405 MHz.
Frequency Control	Phase Locked Loop (PLL) synthesizer.
Frequency Tolerance	0.005%.
Operating Temperature Range	-30°C to +50°C.
Microphone	Plug-in type; dynamic.
Power Source	117 VAC nominal; 13.8 VDC nominal. (Positive or negative ground.)
Power Consumption (117 VAC)	<i>Transmit:</i> AM full mod., 55 watts. <i>Receive:</i> Squelched, 25 watts. Full audio, 25 watts.
Current Drain (13.8 VDC)	<i>Transmit:</i> AM full mod., 1.5A DC (nominal). <i>Transmit:</i> AM full mod., 60VA AC (nominal). <i>Receive:</i> Full audio output, 1.2A DC (nominal; no signal 0.5 A DC (nominal).
Size	5 <sup>3</sup> / <sub>4</sub> "H x 13-3/8"W x 12-5/8"D.
Weight	10 pounds.
Antenna Connector	UHF, SO239.
Semiconductors	24 transistors, 30 diodes, 6 integrated circuits.
Meter 1	Illuminated; indicates relative power output and received signal strength.
Meter 2	Illuminated, indicates standing wave ratio and level of modulation.

## TRANSMITTER

Power Output	4 watts.
Modulation	High- and low-level Class B amplitude modulation.
Frequency Response	300 to 3000Hz.
Output Impedance	50 ohms, unbalanced.
Output Indicators	Meter indicates relative RF output power, standing wave ratio and level of modulation.

## RECEIVER

Sensitivity	Less than $1\mu\text{V}$ for 10 dB (S+N)/N.
Selectivity	6 dB @ 7KHz, 60 dB @ 10KHz.
Image Rejection	50 dB.
IF Frequencies	Double conversion, 1st: 10.695MHz. 2nd: 455KHz.
Adjacent Channel Rejection	-70 dB.
RF Gain Control	Variable type.
Automatic Gain Control (AGC)	Less than 10 dB change in audio output for inputs from 10 to 500,000 microvolts.
Delta Tune Range	$\pm 1.5\text{KHz}$ continuously adjustable.
Squelch	Adjustable, threshold less than $1\mu\text{V}$ .
Audio Output Power	4 watts.
Frequency Response	300 to 3000Hz.
Distortion	Less and 10% @ 3 watts @ 1000Hz.
Built-in Speaker	8 ohms, round.
External Speaker (Not Supplied)	8 ohms; disables internal speaker when connected.

## PA SYSTEM

Power Output	4 watts into external speaker.
External Speaker for PA (Not Supplied)	8 ohms; when PA-CB switch is in PA, the PA speaker also monitors the receiver, separate jack provided.

# Section III

## Installation

### LOCATION

Prior to beginning operation of the transceiver, a basic installation must be prepared. Installation of the transceiver itself is a rather simple procedure.

In selecting the location for the unit, two basic factors must be considered.

1. Access to a 120V, 60 Hz power source.
2. The location must be convenient for running the antenna lead-in cable if an outside antenna installation is proposed.

### BASE STATION ANTENNA

Since the maximum allowable power output of the transmitter is limited by the FCC, the antenna is the most important factor affecting transmission distance. Only a properly matched antenna system will allow maximum power transfer from the 50-ohm transmission line to the radiating element.

The recommended method of antenna tuning is to use an in-line watt-meter or VSWR bridge to adjust the antenna tuning for minimum reflected power on channel 21.

The radio may be used with any type of 50-ohm base station antenna. A ground plane vertical antenna will provide the most uniform horizontal coverage. This type of antenna is best suited for communication with a mobile unit. For point-to-point operation where both stations are fixed, a directional beam will usually increase communicating range since this type of antenna concentrates transmitted energy in one direction. The beam antenna also allows the receiver to "listen" in only one direction thus reducing interfering signals.

Antenna height is an important factor when maximum range is desired. Keep the antenna clear of surrounding structures or foliage. FCC regulations for base station antenna height are:

1. Omni-directional antennas may not be higher than 60 feet above the ground when using a tower, mast or pole, and no higher than 20 feet above an existing structure.
2. Beam antennas may not be higher than 20 feet above the ground when using a tower, mast, pole, or an existing structure.

These are only general regulations applicable to most but not all parts of the nation. Locations near airports and some military installations are subject to different rules; therefore, it is best to contact your nearest Federal Communications Commission office for information regarding your specific area.

### **MOBILE OPERATION/EMERGENCY POWER OPERATION**

It is possible to operate the COBRA 89XLR from an external 13.8 VDC power supply for emergency power conditions or from an automobile battery for mobile operation. The COBRA 89XLR is supplied with a polarized plug for operation on an external DC supply.

The negative lead is black.

The positive lead is red and has an in-line fuse holder as an integral part of the positive lead.

### **PUBLIC ADDRESS**

An external 8-ohm, 4-watt speaker may be connected to the PA speaker jack located on the rear panel when the transceiver is used as a public address system. The speaker should be directed away from the microphone to prevent acoustic feed-back. Physical separation or isolation of the microphone and speaker must be used when operating the PA at high-output levels.

### **REMOTE SPEAKER**

The external speaker jack (EXT. SPKR.) on the rear panel is used for remote receiver monitoring. The external speaker should have 8 ohms impedance and be able to handle at least 4 watts.

When the external speaker is plugged in, the internal speaker is disconnected.

## ALTERNATE MICROPHONES AND INSTALLATION

For best results, the user should select a low-impedance dynamic type microphone or a transistorized microphone. Transistorized type microphones have a low output impedance characteristic. The microphones must be provided with a four-lead cable. The audio conductor and its shielded lead comprise two of the leads. The third lead is for transmit/receive control and the fourth lead is the speaker return lead which disables the speaker during transmit. The microphone should provide the functions shown in schematic below.

### 4-Wire Mic Cable

Pin Number	Mic Cable Lead
1	Audio Shield
2	Audio Lead
3	Transmit Control
4	Receive Control

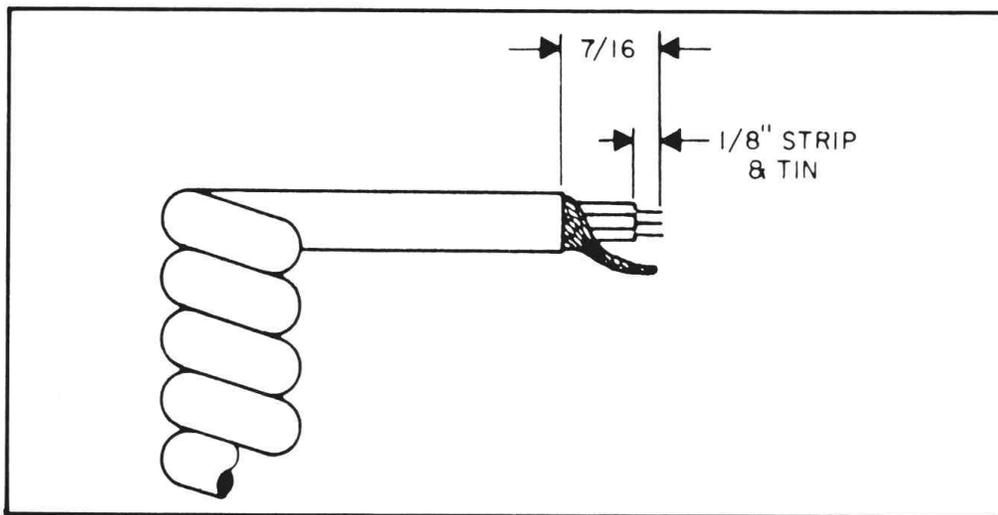


Fig. 1. Microphone cable preparation.

If the microphone to be used is provided with pre-cut leads, they must be revised as follows:

1. Cut leads so that they extend  $7/16''$  beyond the plastic insulating jacket of the microphone cable. (See Fig. 1.)

2. All leads should be cut to the same length. Strip the ends of each wire 1/8" and tin the exposed wire.

Before beginning the actual wiring, read carefully the circuit and wiring information provided with the microphone you select. Use the minimum head required in soldering the connections. Keep the exposed wire lengths to a minimum to avoid shorting when the microphone plug is reassembled.

To wire the microphone cable to the plug provided, proceed as follows (see Fig. 2):

1. Remove the retaining screw.
2. Unscrew the housing from the pin receptacle body.
3. Loosen the two cable clamp retainer screws.
4. Feed the microphone cable through the housing, knurled ring and washer as shown in Fig. 2B.

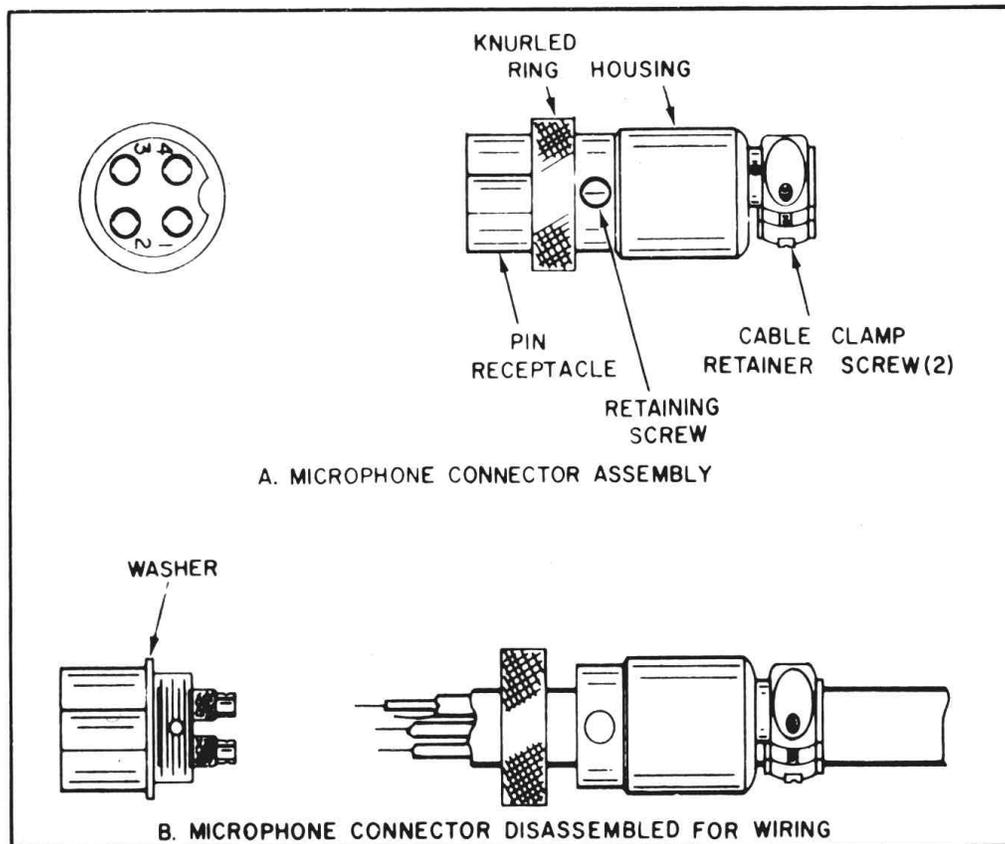


Fig. 2. Microphone plug wiring.

5. The wires must now be soldered to the pins as indicated in the above wiring tables. If a vise or clamping tool is available it should be used to hold the pin receptacle body during the soldering operation, so that both hands are free to perform the soldering. If a vise or clamping tool is not available, the pin receptacle body can be held in a stationary position by inserting it into the microphone jack of the front panel. The numbers of the pins of the microphone plug are shown in Fig. 3, as viewed from the back of the plug. Before soldering the wire to the pins, pre-tin the wire receptacle of each pin of the plug.

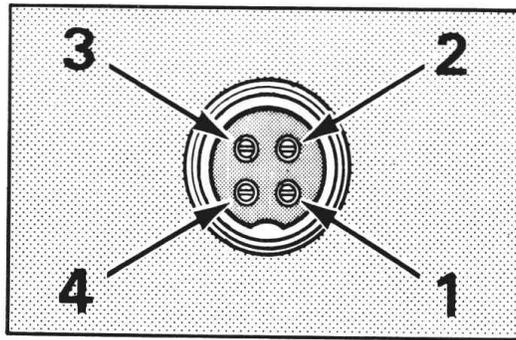


Fig. 3. Microphone plug pin numbers viewed from rear of pin receptacle.

Be sure that the housing and the knurled ring of Fig. 2 are pushed back onto the microphone cable before starting to solder. If the washer is not captive to the pin receptacle body, make sure that it is placed on the threaded portion of the pin receptacle body before soldering.

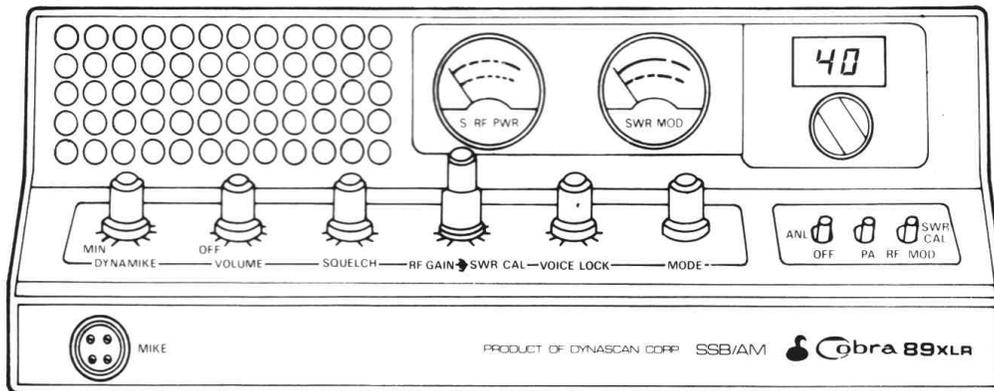
If the microphone jack is used to hold the pin receptacle during the soldering operation, best results are obtained when the connections to pins 1 and 4 are made first and then the connections to pins 2 and 3. Use a minimum amount of solder and be careful to prevent excessive solder accumulation on pins, which could cause a short between the pin and the microphone plug housing.

6. When all soldering connections to the pins of the microphone plug are complete, push the knurled ring and the housing forward and screw the housing onto the threaded portion of the pin receptacle body. Note the location of the screw clearance hole in the plug housing with respect to the threaded hole in the pin receptacle body. When the housing is completely threaded onto the pin receptacle body, a final fraction of a turn either clockwise or counterclockwise may be required to align the

screw hole with the threaded hole in the pin receptacle body. When these are aligned, the retaining screw is then screwed into place to secure the housing to the pin receptacle body.

7. The two cable clamp retainer screws should now be tightened to secure the housing to the microphone cord. If the cutting directions have been carefully followed, the cable clamp should secure to the insulating jacket of the microphone cable.
8. Upon completion of the microphone plug wiring, connect and secure the microphone plug in the transceiver.

# Section IV Operation



## A. CONTROL FUNCTIONS

1. **DYNAMIKE.** Adjusts the microphone gain in the transmit and PA modes. This controls the gain to the extent that full talk power is available several inches away from the microphone. In the Public Address (PA) mode the control functions as the volume control.
2. **OFF/ON VOLUME.** Turn clockwise to apply power to the unit and to set the desired listening level.
3. **SQUELCH.** This control is used to cut off or eliminate receiver/background noise in the absence of an incoming signal. For maximum receiver sensitivity the control should be adjusted only to the point where the receiver background noise or ambient background noise is eliminated. Turn fully counterclockwise then slowly clockwise until receiver noise disappears. Any signal to be received must now be slightly stronger than the average received noise. Further clockwise

rotation will increase the threshold level which a signal must overcome in order to be heard. Only strong signals will be heard at a maximum clockwise setting.

4. **TONE.** This control is used to shape the audio response to the operators preference. Base is increased by counterclockwise rotation and trebel is increased by clockwise rotation.
5. **RF GAIN.** Adjust as required to optimize the signal. This control is used primarily to optimize reception in strong signal areas. Gain is reduced by counterclockwise rotation of the control.
6. **DELTA TUNE.** For normal operation set the control to the center position. This feature has several uses and can greatly enhance receiver operation. First, if a received signal is slightly off frequency, the Delta-Tune control can be operated as required to optimize the received signal level. The effectiveness of the Delta-Tune feature under these conditions can be observed either by listening for a more readable signal at the speaker or by noting the S-meter reading when the Delta-Tune control is operated. Another effective application of this control is in eliminating adjacent channel interference. If it is verified that an exceptionally high level signal from an adjacent channel is creating interference on the channel being used, the Delta-Tune can be used to minimize or eliminate the interference. Operate the control as required to obtain minimum adjacent channel interference.
7. **SWR CAL CONTROL.** In order for you to achieve maximum radiated power and the longest range, it is important that your antenna be in good condition, properly adjusted and matched to your transceiver. The built-in SWR (standing wave ratio) meter lets you easily measure your antenna condition. To operate this function, connect your antenna to the transceiver antenna output connector. Select a channel near the middle of the band such as 21, or the channel you plan to use most frequently. Turn the power on and set the meter function switch to the CAL position. Press and hold the microphone push-to-talk button; using the SWR CAL control, adjust the meter to read the CAL position indicated on the meter face. Then, without releasing the microphone button, switch the meter function switch to the SWR position and read the SWR indicated. The lower the figure, the better, with 1 being ideal. Generally speaking, readings up to 3 are acceptable, but over 3 indicates that you are losing radiated power and antenna adjustment may be advisable.

8. **CHANNEL SELECTOR.** This switch selects any one of the forty Citizens Band channels desired. The selected channel appears on the LED readout directly above the Channel Selector knob. Channel 9 has been reserved by the FCC for emergency communications involving the immediate safety of life of individuals or immediate protection of property. Channel 9 may also be used to render assistance to a motorist.
9. **OFF/ANL SWITCH.** In the ANL position, the noise reduction circuits of the Automatic Noise Limiter are activated.
10. **PA/CB SWITCH.** Selects the mode of operation. In the CB position, the PA function is disabled and the unit will transmit and receive on the selected frequency. The PA function should not be used unless a PA speaker is connected.

To use this PA feature, a speaker having a voice coil impedance of 8 ohms and a power handling capability of at least four watts should be used. This speaker must be plugged into the PA SPKR jack at the rear of the transceiver. With the PA speaker connected as outlined previously, be sure that there is physical separation between the microphone and the speaker itself. If the speaker is located close to the microphone, acoustic feedback will result when the public address system is operated at high volume. Some experimentation will determine the minimum amount of isolation required for a given sound level from the public address system.

#### **NOTE**

PA volume is controlled by adjusting the DYNAMIKE KNOB to the desired volume.

11. **SWR/SWR CAL/RF-MOD SWITCH.** In the RF-MOD position, the S-RF and MOD meters are activated. When in the SWR or SWR CAL positions the SWR meter is activated. In the latter two cases, the operation is described in the above SWR CAL CONTROL description.
12. **PRESS-TO-TALK MICROPHONE.** The receiver and transmitter are controlled by the press-to-talk switch on the microphone. Press the switch and the transmitter is activated; release switch to receive. When transmitting, hold the microphone two inches from the mouth and

Speak clearly in a normal "voice". The radios come complete with a low-impedance 500-ohm dynamic microphone. For installation instructions on other microphones, see next section, "ALTERNATE MICROPHONES AND INSTALLATION."

## B. INDICATOR FUNCTIONS

**S-METER.** Swings proportionally to the strength of the incoming signal.

**RF METER.** Swings proportionally to the RF output power. When transmitting, the RF -% MOD switch must be in the "RF" position and the OFF-CAL-SWR switch must be in the "OFF" position.

**MODULATION METER.** Swings proportionally to the degree of modulation. When transmitting, the RF -% MOD switch must be in the % MOD position, and the OFF-CAL-SWR switch must be in the "OFF" position.

**SWR METER.** Measures the ratio of standing wave voltage of the antenna system. Used to properly adjust the length of the antenna, and to monitor the quality of the coaxial cable and all RF electrical connections. If there is any degradation whatsoever in any of the above, due to humidity, salt spray, vibration or corrosion, the SWR meter reading will rise, thereby indicating that a problem exists.

To calibrate, switch to the "CAL" position transmit by pressing the mike switch, and adjust the SWR control to the "CAL" mark on the meter then switch to "SWR" position for the SWR measurement.

**CHANNEL INDICATOR.** The selected channel appears on the LED readout directly above the channel selector knob.

## C. OPERATING PROCEDURE TO RECEIVE

1. Place the CB/PA switch in the CB position.
2. Turn the set ON by turning the VOLUME control clockwise, until a click is heard.
3. Set the VOLUME for a comfortable listening level.

4. Set the Channel selector switch to the desired channel.
5. Set the RF GAIN fully clockwise.
6. Set the DELTA TUNE control to the center position.
7. Listen to the background noise from the speaker. Turn the SQUELCH control slowly clockwise, until the noise JUST disappears. (No signal should be present.) Leave the control at this setting. The SQUELCH is now properly adjusted. The receiver will remain quiet until a signal is actually received. Do not advance the control too far, or some of the weaker signals will not be heard.

#### **D. OPERATING PROCEDURE TO TRANSMIT**

1. Select the desired channel of transmission.
2. Set the DYNAMIKE control fully clockwise.
3. If the channel is clear, depress the push-to-talk switch on the microphone and speak in a normal voice.

The S-RF meter will indicate relative power output and the modulation meter will indicate percentage of modulation as you speak into the microphone.

#### **CAUTION**

Be sure the antenna is properly connected to the radio before transmitting. Prolonged transmitting without an antenna or a poorly matched antenna could cause damage to the transmitter.

# Section V

## Maintenance and Adjustment

The COBRA 89XLR transceiver is designed specifically for use as a base station and may also be used in mobile installations. The use of all solid circuitry results in light weight and high reliability. Should a failure occur, replace parts only with identical parts. Do not substitute. Refer to the schematic diagram and parts list.

### NOTE

If the performance described in the OPERATION and MAINTENANCE AND ADJUSTMENT section is not obtained, review the operating instructions to insure that proper procedures were followed. If a problem still exists, refer to WARRANTY SERVICE INSTRUCTIONS on the last page of this manual.

### FCC WARNING

Federal law requires that adjustment of the radio frequency section of this transceiver may not be made by a Citizens Band operator. Only a United States licensed First or Second Class commercial license holder may tune the transmitter section of this transceiver, per FCC part 95 section 95.97d.

# Section VI

## Appendix

Citizens Band radio operators have largely adopted the “10-code” for standard questions and answers. Its use permits faster communications and better understanding in noisy areas. The following table lists some of the more common codes and their meanings.

### 10 CODE

Code	Meaning	Code	Meaning
10-1	Receiving poorly	10-29	Time is up for contact
10-2	Receiving well	10-30	Does not conform to FCC rules
10-3	Stop transmitting	10-32	I will give you a radio check
10-4	OK, message received	10-33	EMERGENCY TRAFFIC
10-5	Relay message	10-34	Trouble at this station
10-6	Busy, stand by	10-35	Confidential information
10-7	Out of service, leaving air	10-36	Correct time is
10-8	In service, subject to call	10-37	Wrecker needed at
10-9	Repeat message	10-38	Ambulance needed at
10-10	Transmission completed, standing by	10-39	Your message delivered
10-11	Talking too rapidly	10-41	Please turn to channel
10-12	Visitors present	10-42	Traffic accident at
10-13	Advise Weather/Road conditions	10-43	Traffic Tie up at
10-16	Make pick up at	10-44	I have a message for you
10-17	Urgent business	10-45	All units within range please report
10-18	Anything for us?		
10-19	Nothing for you, return to base	10-50	Break channel
10-20	My location is	10-60	What is next message number?
10-21	Call by telephone	10-62	Unable to copy, use phone
10-22	Report in person to	10-63	Net directed to
10-23	Stand by	10-64	Net clear
10-24	Completed last assignment	10-65	Awaiting your next message/assignment
10-25	Can you contact	10-67	All units comply
10-26	Disregard last information		
10-27	I am moving to channel	10-70	Fire at
10-28	Identify your station		

## 10 CODE (Continued)

Code	Meaning	Code	Meaning
10-71	Proceed with transmission in sequence	10-91	Talk closer to mike
10-73	Speed trap at	10-92	Your transmitter is out of adjustment
10-75	You are causing interference	10-93	Check my frequency on this channel
10-77	Negative contact	10-94	Please give me a long count
10-81	Reserve hotel room for	10-95	Transmit dead carrier for 5 seconds
10-82	Reserve room for	10-99	Mission completed, all units secure
10-84	My telephone number is	10-200	Police needed at
10-85	My address is		
10-89	Radio repairman needed at		
10-90	I have TV		

### A FEW RULES THAT SHOULD BE OBEYED

1. You must identify your official licensed call sign at the beginning and end of every conversation.
2. You are not allowed to carry on a conversation with another station for more than five minutes at a time without taking a one-minute break, to give others a chance to use the channel.
3. You are not allowed to blast others off the air by over-powering them with illegally amplified transmitter power, or illegally high antennas.
4. You can't use CB to promote illegal activities.
5. You are not allowed to use profanity.
6. You may not play music in your CB.
7. You may not use your CB to sell merchandise or professional services.

## HOW YOUR CB CAN SERVE YOU

- Warn of traffic tie ups ahead.
- Provide weather and road information.
- Provide help fast in event of emergency or breakdown.
- Suggest good spots to eat and sleep.
- Make long trips more interesting, and help keep you awake.
- Provide direct contact with your office or home.
- Make friends for you as you travel.
- Provide “local information” to find your destination.
- Help law enforcement officers by reporting drunk and reckless drivers.

Colonel Samuel S. Smith of the Missouri Highway Patrol called the number of drunken drivers, wrong-way drivers and speeders reported by CBers as “amazing.” He said, that even the “Smokey Bear” warnings don’t shake their beliefs that “the potential benefits of CB radio to law enforcement are so great that they far outweigh the disadvantages.” In regards to CB radar warnings to other CBers, Colonel Smith said cheerfully that “We’ve overheard warnings being relayed to truckers long after our operations have been discontinued . . . so we actually receive a residual benefit from these warnings.”

## USE CHANNEL 9 FOR EMERGENCY MESSAGES ONLY

FCC gives the following examples of permitted and prohibited types of communications for use on Channel 9. These are guidelines and are not intended to be all-inclusive.

<b>Permitted</b>	<b>Example Message</b>
Yes	“A tornado sighted six miles north of town.”
No	“This is observation post number 10. No tornado sighted.”
Yes	“I am out of gas on Interstate 95.”
No	“I am out of gas in my driveway.”
Yes	“There is a four-car collision at Exit 10 on the Beltway, send police and ambulance.”
No	“Traffic is moving smoothly on the Beltway.”
Yes	“Base to Unit 1, the Weather Bureau has just issued a thunderstorm warning. Bring the sailboat into port.”
No	“Attention all motorists. The Weather Bureau advises that the snow tomorrow will accumulate 4 to 6 inches.”
Yes	“There is a fire in the building on the corner of 6th and Main Streets.”
No	“This is Halloween patrol unit number 3. Everything is quiet here.”

## WARRANTY SERVICE INSTRUCTIONS

1. Refer to the MAINTENANCE section of your Cobra instruction manual for adjustments that may be applicable.
2. Defective parts removed from units which are within the 90-Day Limited Warranty period should be sent PREPAID to the Service Department listed below. Be sure to state the model and serial number of the unit from which the parts were removed and date the unit was purchased. These parts will be exchanged at no charge, under the terms of the Warranty.
3. If the above-mentioned procedures do not correct the problem you are experiencing with your unit, pack it securely (preferably in the original carton or double-packed). Enclose a letter describing the problem and include your name and address. Deliver to, or ship PREPAID (UPS preferred) to the nearest Cobra authorized service agency (see list enclosed with unit).

If your list of authorized Cobra service agencies has been misplaced, contact your local dealer for the name of your nearest service agency, or write to:

### *Service Department*

Cobra Product Group  
DYNASCAN CORPORATION  
2815 West Irving Park Road  
Chicago, Illinois 60618

### 90-DAY LIMITED WARRANTY

DYNASCAN warrants that each COBRA product manufactured by it will be free from defects in material and workmanship under conditions of normal use and service for a period of ninety (90) days from the date of purchase from an authorized COBRA dealer. DYNASCAN will, at its option, repair or replace any product or component not conforming with the foregoing warranty and which is returned, transportation prepaid, to our factory or our authorized service contractor. *DYNASCAN shall not otherwise be liable for any damages, consequential or otherwise.* DYNASCAN makes no other express warranties. *Any implied warranties (including any warranty of merchantability) are limited in duration to ninety (90) days from the date of purchase.* This warranty does not apply to (i) damage resulting from unauthorized alterations and repairs, misuse, negligency or accident; or (ii) damage resulting from improper installation, connection or adjustment otherwise than in accordance with COBRA's authorized Instruction Manual. This warranty is void if the serial number has been altered, defaced or removed. DYNASCAN reserves the right to discontinue any model at any time or change specifications or design without notice and without incurring any obligation. To register this warranty, the enclosed COBRA warranty registration card should be completed and mailed to COBRA COMMUNICATIONS, PO Box 35148, Chicago, Illinois 60635, within ten (10) days after date of purchase.



**Cobra**

Cobra Communications Product Group

**DYNASCAN CORPORATION**

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