

# Midland 77-104XL Operating Instructions.

Having properly installed and wired your CB and antenna, you are now ready for the six steps designed to get you into effective, satisfactory operation:

**Step 1:** Screw the plug from the microphone into the microphone jack on the front side panel and check for secure fit. Clockwise rotation tightens.

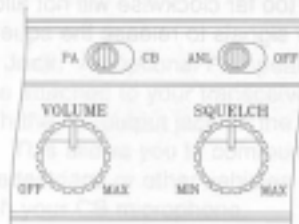


**Step 2:** Make sure your antenna is securely connected to the antenna connector.

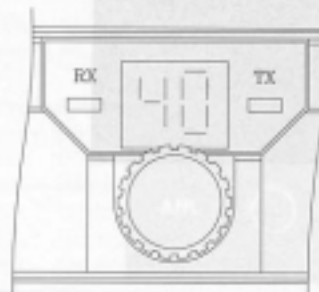
**Step 3:** Make sure the Squelch control is in the 9 o'clock position.

**Step 4:** Put PA/CB switch in "CB" position.

**Step 5:** Turn the power on and adjust the "Volume" control for a satisfactory sound level.



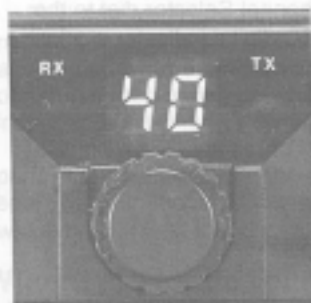
**Step 6:** Select your desired channel by turning the Channel Selector dial to the right of the LED digital indicator clockwise (up) or counter-clockwise (down).



**Step 7:** To transmit, press the Push-to-talk bar on the microphone. To receive, release the bar.



## Operating controls, connectors: Their functions and uses.



### A. High Intensity Modern Green Lighted LED Digital Channel Indicator.

Clearly displays the channel selected by use of the selector dial just below.

Turn the dial to the right to select a higher-numbered channel spectrum, left to select channels below the number indicated.

Separate visual indicators for transmit and receive tell you the status of transmit and receive modes.

**B. Off/Volume Control.** Turns your CB on and adjusts the sound level for comfortable reception.

**C. Squelch Control.** Turned clockwise, it quiets the receiver when signals are not being received and allows a quiet standby operation.

The Squelch Control functions only in the receive mode and does not affect receiver volume when signals are being received.

To adjust, when no signals are present, rotate the Squelch Control clockwise until the receiver is quieted. Incoming signals will automatically release the squelch action.

Careful adjustment is necessary as a setting too far clockwise will not allow weaker signals to release the squelch action.



6. Exercise care to prevent damage.



**D. Microphone connector.** Securely links your microphone to the main unit during use.



**E. ANL/Off Switch.** When turned on it operates in the receiver to reduce atmospheric and ignition noise.



**F. Microphone Push-To-Talk Bar.** Simply push this bar in to transmit; release when receiving.



**G. External Speaker Jack.** Allows you to attach an external speaker that will override the unit's internal speaker. Connection is made through the External Speaker Jack, also on the back panel.



**H. PA Jack.** An optional PA speaker may be attached to your transceiver through the PA output jack on the back panel. This allows you to communicate with pedestrians or other vehicles through your CB microphone.

## Operating controls.

Midland International corporation hereby certifies that this unit has been designed, manufactured, FCC type accepted and certified in accordance with Part 95 and Part 15, Subpart C, of the current FCC rules and regulations as of the date of manufacture.

## NOTICE

**EFFECTIVE IMMEDIATELY YOU ARE NO LONGER REQUIRED TO OBTAIN A F.C.C. LICENSE FOR OPERATION OF YOUR CITIZENSBAND TRANSCEIVER.**

**YOU MAY NOW USE YOUR CITIZENSBAND EQUIPMENT RIGHT AWAY WITHOUT FILLING OUT A FORM OR CONTACTING THE FCC.**

## General CB information.

In 1958, The Federal communications Commission approved the use of 23 channels by duly licensed Citizens Band radio operators. The authorization was expanded to 40 channels in 1977.

A simple, basic means of communication, CB requires no more skill or knowledge than the operation of a standard AM or FM receiver.

Still, there are certain facts, procedures and "rules of the road" you'll need to know in order to make the most of your CB experience.

**Make it "short and sweet."** When using your CB, get on and off the air as quickly as possible. Never use profanity — which is against the law and subject to heavy penalties. Follow the FCC rules outlined in Part 95.

**Use Channel 9 in emergencies only.** Emergency channel 9 is designated for this purpose and this purpose alone.

The FCC has given public safety agencies various "call signs" including "0911" numbers, coinciding with the "911" phone numbers these agencies use in telephone communications.

The call signs for state-level agencies use 3 letters and 4 numbers, with the second and third letters being the official Post Office state abbreviation, e.g., "KS" for "Kansas."

**Why and how to use the "10 Code."** Developed over the years by official agencies in order to save time and provide precise, clear messages, the "10-Code" has become a popular tool for CBers.

The table below lists some of the more common codes and their meanings.

Code	Meaning		
10-1	Receiving poorly	10-35	Confidential information.
10-2	Receiving well.	10-36	Correct time is.
10-3	Stop transmitting.	10-37	Wrecker needed at.
10-4	OK, message received.	10-38	Ambulance needed at.
10-5	Relay message.	10-39	Your message delivered.
10-6	Busy, stand by.	10-41	Please turn to Channel.
10-7	Out of service; leaving the air.	10-42	Traffic accident at.
10-8	In service, subject to call.	10-43	Traffic tie-up at.
10-9	Repeat message.	10-44	I have a message for you.
10-10	Transmission completed, standing by.	10-45	All units within range report.
10-11	Talking too fast.	10-50	Bread channel.
10-12	Visitors present.	10-60	What is next message number?
10-13	Advise weather/road conditions.	10-62	Unable to copy; use phone.
10-16	Make pickup at.	10-63	Network directed to.
10-17	Urgent business.	10-64	Network clear.
10-18	Anything for us?	10-65	Awaiting your next message/assignment.
10-19	Nothing for you; return to base.	10-67	All units comply.
10-20	My location is.	10-70	Fire at.
10-21	Call by telephone.	10-71	Proceed with transmission in sequence.
10-22	Report in person to.	10-77	Negative contact.
10-23	Stand by.	10-81	Reserve hotel room at.
10-24	Completed last assignment.	10-82	Reserve room for.
10-25	Can you contact?	10-84	My telephone number is.
10-26	Disregard last information.	10-85	My address is.
10-27	I am moving to Channel.	10-91	Talk closer to mike.
10-28	Identify your station.	10-93	Check my frequency on this channel.
10-29	Time is up for contact.	10-94	Please give me a long count.
10-30	Does not conform to FCC rules.	10-99	Mission completed; all units secure.
10-32	I will give you a radio check.	10-200	Police needed at.
10-33	Emergency traffic.		
10-34	Trouble at this station.		

## Frequency-channel number chart.

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

## Factors affecting effective CB range.

Essentially, they're the same influences that optimize or limit AM, FM and other kinds of performance in moving vehicles:

**Terrain:** Hills and valleys naturally interrupt and shorten CB signals.

**Weather.** You can expect that CB range will be reduced — perhaps drastically — in times of atmospheric disturbance, such as in a thunderstorm or heavy snow. Sunspots, too, are known to adversely affect CB performance.

**Obstructions.** Inside a tunnel, covered parking garage or viaduct, CB sending/receiving capability may be cut off altogether.

In short, you can expect to maintain maximum transmitting/receiving performance in flat, open country in stable (not necessarily clear) weather conditions.

Should effective range be limited in these conditions, check to see that your CB is connected properly and your antenna adjusted correctly. It may be necessary to consult your Midland CB Dealer's service department.

### What causes noise?

If you have an abnormal noise problem, the chances are your vehicle itself is the cause.

A CB receiver is a very sensitive instrument, able to pick up small noise signals and amplify them — particularly if the source of these signals is within a few feet of your CB.

Any noise that comes from your CB almost certainly comes from outside the unit itself. Devices have been designed into your Midland CB (a noise blanker or an automatic noise limiter, for example) to minimize this kind of distraction.

### **Trouble-shooting aids.**

Frequently, there are simple, quick actions you can take to eliminate or minimize such problems as interference and noise.

### **Noise suppression.**

A very common source of excessive noise is the ignition system of a CB owner's vehicle. If you suspect this is true, simply turn off the ignition and set the key in the accessories (ACC) position.

This way you'll provide power to the transceiver, minus and ignition interference that might exist. If the noise goes away, you know instantly that the ignition system is the culprit.

Still, there are a number of places in the ignition system where noise can originate.

**Sparkplugs** and sparkplug wires are probably the worst noise producers. To eliminate this kind of noise, you can take any of four simple measures: (1) Install resistive sparkplug suppressors, (2) resistor sparkplugs or (3) resistance-wire cabling, between plugs and the distributor and also between the distributor and ignition coil. (4) Replace old plugs and sparkplug wiring and properly tune the engine. This generally cures most noise.

Many cars come suppressor-cable equipped. If yours didn't (consult your vehicle owners manual or dealer service department to be sure), you can get it at any auto supply store and, given a moderate amount of mechanical skill, install it yourself.

**Caution: Do not undertake any ignition-system repairs or modifications without either professional help or some automotive service experience.**

**Generator-brush sparking** can create an annoying "whine." It's caused by a dirty commutator, and is eliminated

by polishing its surface with fine-grade emery cloth, and cleaning grooves with a small, sharp tool.

**Voltage regulators** can cause a "hashy" sound in your CB when relay contacts jitter open and closed when the battery is fully charged. To eliminate this noise, mount coaxial feedthrough capacitors at the battery and armature terminals on the regulator box.

**Alternator** slip rings should also be kept clean and good brush contact maintained to minimize CB noise.

In addition, single-contact alternator regulator boxes need a coaxial capacitor at the ignition terminal. Double-contact units should have a second capacitor at the battery terminal. Shielding between the regulator and alternator may be needed as well. Be sure to ground the shield at both ends.

Infrequent, though real, noise generators like your car's heat fan, turn signals, electric-windows and windshield-wiper motors can also be silenced with a coaxial capacitor (consult your serviceman).

**Wheels and tires** can also cause CB noise also. Wheel noise is eliminated by putting static-collector springs between the wheel spindle bolt and grease retainer cup. Tire static can be quieted with antistatic powder applied inside each wheel.

**Antenna corona-discharge noise** — most frequently occurring with sharp-pointed "whip" models — can happen just before or during electrical storms. The only cure is for the storm to blow over or pass.

# SOLUTIONS:

## COMMON CB PROBLEMS:

	Check power cable connection.	Check fuse.	Check Squelch adjustment.	Check on/off switch.	Change to active channel.	Check antenna connection and cable.	Check microphone connection.	Check metal-to-metal ground connection.
No sound or channel light.	•	•	•					•
Channel light but no sound.			•		•	•	•	•
No voice reception.			•	•				
Poor reception.					•	•		
Transmission problems.					•	•	•	•
Unclear reception.				•			•	

**Caution:** The fuse included with this unit is an important safety feature which must not be circumvented. Removal of this fuse or the use of a fuse rated greater than 2 supplied may result in overheating and/or fire and consequential damage to the unit or vehicle. If a replacement fuse burns out, have the unit inspected and repaired by a qualified service technician.

## Midland 77-104XL Mobile CB Transceiver: Technical Specifications.

### General Construction.

1. Unit size: 4-7/8" (W) x 6-1/2" (D) x 1-1/2" (H)
2. Unit weight: 1 lb. 10 oz.
3. Shipping weight: 2 lb. 8 oz.
4. Four-pin SCREW-ON connector for microphone.
5. No mechanical relays. All switching is solid state using diodes and transistors for high reliability.
6. Transmitter output stage is protected from mismatch, no-load or short-circuit conditions.
7. Input power is suitably filtered and bypassed to prevent alternator "whine" on transmit or receive.

### Electrical Specifications.

All test conditions and methods are in accordance with EIA standards RS-382 and RS-424 or applicable government regulations.

### Frequency Control: PLL

**Receiver Sensitivity:** 0.7µV for 10 dB (S+N) /N.

**Receiver Sensitivity:** More than 45dB±10KHz.

**Controls:** On/Off/volume. Variable squelch. Channel selector. RX/TX indicator. LED channel indicator. Push-to-talk bar (on microphone).

### Jack and Connections: Microphone.

50-ohm antenna. 8-ohm external speaker.

**Accessories Included:** Talk microphone with coil cord and plug-in connector.

Microphone clip. Slotted mounting bracket and hardware. Owners manual. Parts 95, Subpart D.