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**Midland 13-871 Owner's Manual**

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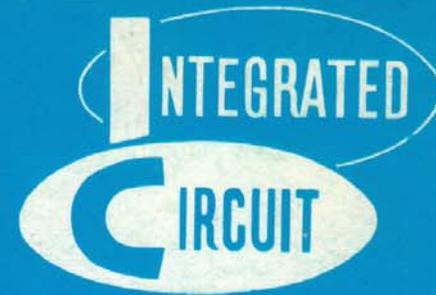
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**MIDLAND**  
COMMUNICATIONS COMPANY<sup>®</sup>



**MODEL 13-871**

**23 CHANNEL AM CITIZENS BAND TRANSCEIVER**

**OWNER'S GUIDE**



## **FEDERAL COMMUNICATIONS COMMISSIONS REQUIREMENTS**

Your new Midland 13-871 is a combination receiver-transmitter designed and built for licensed Class D operation on any of the 23 frequencies designated as citizens band channels by the Federal Communications Commission. You are required to read and understand Part 95 of the F.C. C. rules and regulations prior to operation of this unit. Part 95 regulations are available for \$2.00 from the Superintendent of Documents, Government Printing Office, Washington, D. C. 20402. You are also required to complete F.C.C. form 505 and submit it to the F.C.C. in order to receive your license to operate this unit. F.C.C.regulations will be violated if you transmit with this unit prior to receipt of your license.

### **NOTE**

The technical information, diagrams, and charts provided in this manual are supplied for the use of a qualified holder of a first or second class radiotelephone license in servicing this transceiver. It is the users responsibility to see that this unit is operating at all times in accordance with the F.C.C. citizens Radio Service regulations.

If you install or service your own transceiver, do not attempt to make any transmitter tuning adjustment. Transmitter adjustments are prohibited by the F.C.C. unless you hold a first or second class radiotelephone license or are in the presence of a person holding such a license. A Citizens Band or Amateur license is not sufficient.

MIDLAND COMMUNICATIONS COMPANY HEREBY CERTIFIES THAT THIS UNIT HAS BEEN DISIGNED AND MANUFACTURED IN ACCORDANCE WITH VOL. 6, PART 95 OF THE CURRENT FCC RULES AND REGULATIONS AS OF THE DATE OF MANUFACTURE.

### **OWNERS GUIDE**

Your 13-871 is a versatile, professional quality transceiver and we strongly suggest that you read this Owners Guide carefully before operation so that you may recieve full benefit from its many features.

**OPERATION OF CONTROLS**

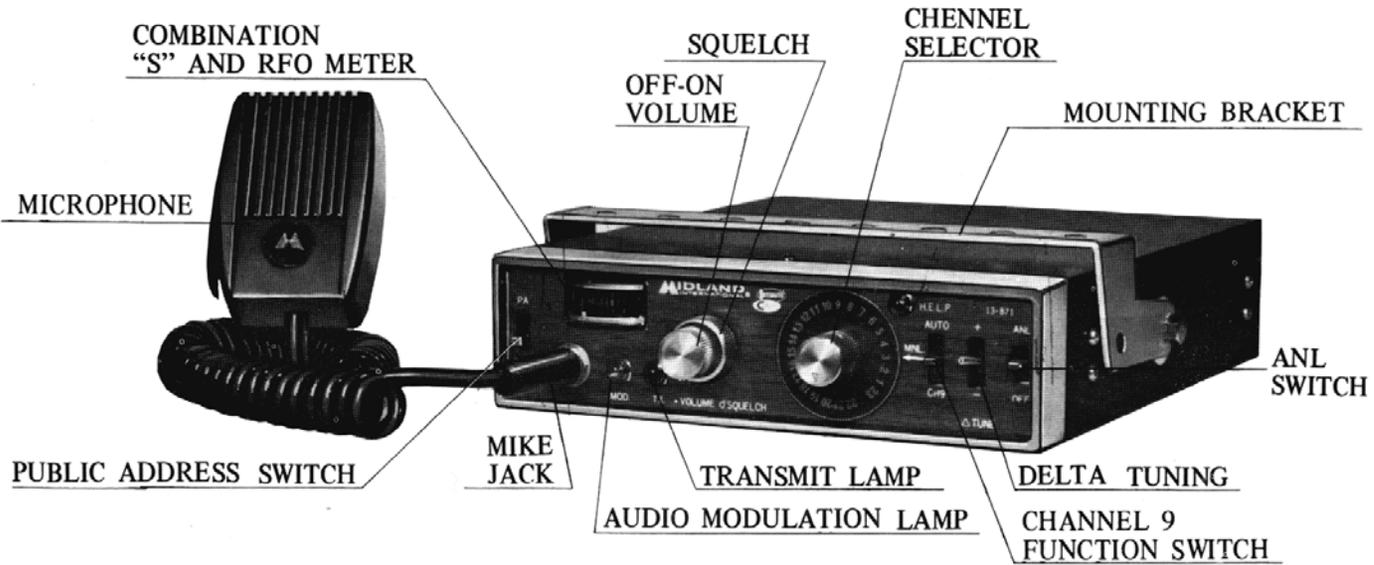


FIGURE 1

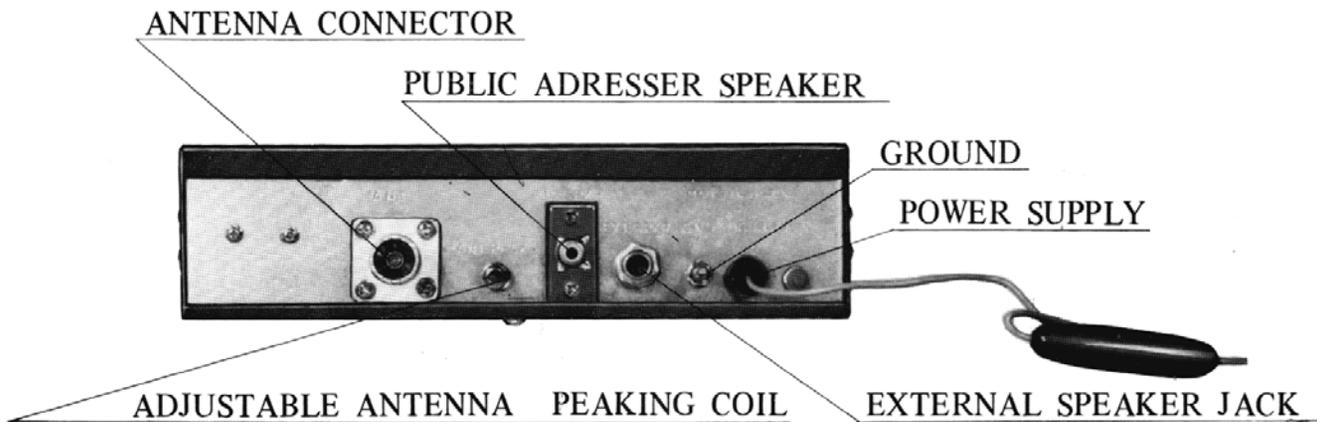


FIGURE 2

## OPERATING CONTROLS AND FUNCTIONS (FIGURES 1 & 2)

### VOLUME-ON/OFF

This is the power on/off switch and speaker volume control. Rotate to the right to turn the set on and increase the volume. This control does not affect the transmitting output.

### CHANNEL SELECTOR

Controls both transmitter and receiver frequencies simultaneously and may be set to any of the 23 positions dictated. All necessary crystals are supplied for full 23 channel operation.

### SQUELCH

Quiets the receiver when signals are not being received and allows a quiet standby operation. It functions only in the receive mode and does not affect the 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. Careful adjustment is necessary, as settings too far to the right will not allow weaker signals to release the squelch.

### PA-CB SWITCH

This unit may also be used as a paging amplifier by connecting a suitable 8–16 ohm speaker to the P.A. output jack (Figure 2) and setting the PA-CB switch to the PA position. Press and hold the push-to-talk bar on the microphone and speak into the microphone in a normal tone of voice.

### ANL (AUTOMATIC NOISE LIMITER) SWITCH

This switch controls the noise limiter circuit which has been designed to reduce excessive electrical interference, ignition noise, etc. Generally, in mobile operation with the engine running, the ANL should be on.

### TX LIGHT

This is a transmit indicator light and will glow red when the push-to-talk bar on the microphone is pressed.

### MOD (MODULATION) LIGHT

This is a modulation (speech level) indicator light and will glow with varying intensity as you speak into the microphone.

### **DELTA TUNE**

Provides a slight plus or minus variation of the receiver frequency. Normally it is set to the center position but may be set to the plus or minus position to help tune in another station transmitting slightly off frequency.

### **CHANNEL 9 SCANNING FUNCTION**

This provides the unique feature of allowing you to monitor Channel 9 for emergency calls even when the channel selector is set to any other channel.

When all other controls are adjusted for normal operation and the channel selector is set to any position, set this switch to the automatic position (top) and the operation is as follows.

The receiver will sample Channel 9 two times per second as indicated by the flashing of the red light. When a signal is found on Channel 9, the receiver will automatically lock on Channel 9, the red light will stay on and the call or message will be heard. When this Channel 9 message is ended, the receiver will automatically switch back to whatever channel was originally selected on the channel selector and resume scanning Channel 9.

**NOTE:** The squelch control must be adjusted for quieting for automatic scanning. (See paragraph on squelch control operation.) Also, the channel selected by the channel selector, however, is the priority channel and the scanning function and automatic switch-over will not occur while a call is being received on the originally selected channel. This prevents interruption of a conversation in progress.

If a Channel 9 emergency call is received and you want to respond without changing the channel selector, you may do so by setting the Channel 9 function switch to the bottom position. This will lock the transmitter and receiver on Channel 9 regardless of where the channel selector is set.

If Channel 9 scanning is not desired, the function switch may be set to the center position to disable the scanning circuit.

### **S-RFO METER**

This is a dual purpose meter that measures the relative strength of incoming signals when receiving and the relative power output when transmitting.

## **MOBILE INSTALLATION**

Safety and operating convenience are the primary factors to consider when mounting any piece of equipment in an automobile. Be sure that the transceiver controls may be easily reached by the operator. Also be sure that connecting cables do not interfere with the operation of the brake, accelerator, etc.

## **POWER CONNECTION**

When used in mobile operation, the vehicle's battery supplies the power.

**CAUTION:** The 13-871 is designed to be used in a 12 volt DC negative ground system only. If you are unsure of your vehicle's polarity, ask your dealer or local service station.

The red wire from the 13-871 is positive and may be connected directly to the positive or + battery terminal or to a fuse block or ignition switch or other convenient point.

The black wire is negative or ground and should be connected to a metal part of the vehicle body or frame or - battery terminal.

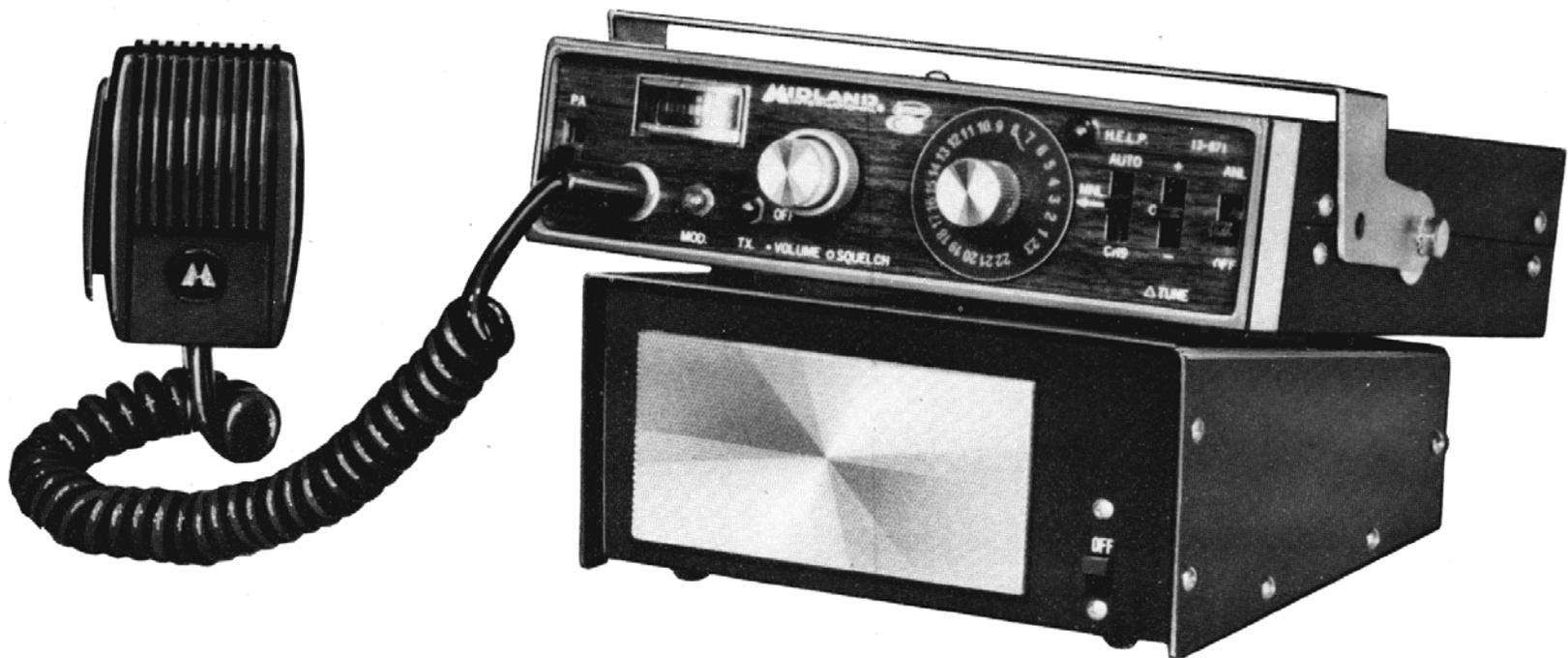
To insure proper operation, care should also be taken in attaching the transceiver and mounting bracket to the vehicle in such a way as to obtain good ground connection at this point.

## **MOBILE ANTENNAS**

A vertical whip antenna is best suited for mobile operation. A nondirectional antenna should be used for best results in any case. The base-loaded whip antenna will normally provide effective communication or for greater range and more reliable operation a full quarter-wave whip may be used. Either of these antennas use the metal car body as a ground plane and the shield of the base lead as well as the metal case of the transceiver should be grounded. A standard antenna connector (type SO-239) is provided on the transceiver for easy connection to a standard PL-259 coax plug. Following the antenna manufacturer's instructions carefully will insure proper operation.

## **BASE STATION OPERATION**

Although the 13-871 is designed for mobile operation, it will work equally well as a base station when connected to a suitable base station power supply such as the Midland 18-805.



When the 13-871 is used as a base station, any Citizens Band beam, dipole, ground plane or vertical antenna may be used. A ground plane type antenna will provide good coverage, and since it is essentially non-directional, it is ideal in base station to mobile operation. From base station to base station or point-to-point operation a directional beam will give greater distance even under adverse conditions. The range of the transceiver also depends on the height of the antenna so whenever possible, select the highest location within F.C.C. limits. (These regulations limit the antenna height to 20 feet above an existing structure). Generally, a maximum of 26 feet of coax lead-in cable should be used to minimize line losses, however, a desirable antenna location may justify the slight loss developed by longer cable lengths.