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Midland 13-866 Owner's Manual

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MIDLAND
ELECTRONICS COMPANY

MODEL 13-866

**5-WATT 23-CHANNEL
MOBILE TRANSCEIVER**

OWNER'S GUIDE



FEDERAL COMMUNICATIONS COMMISSION'S REQUIREMENTS

Your new Midland 13-866 is a combination receiver-transmitter designed, built, and F. C. C. type accepted 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 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 user's 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 radio-telephone license or are in the presence of a person holding such a license. A Citizens Band or Amateur license is not sufficient.

When service is performed by an authorized and licensed person, care must be taken in the replacement of parts to use only authorized parts, in order not to void the type acceptance of this model.

Midland Electronics Company hereby certifies that this unit has been designed, manufactured and F. C. C. type accepted in accordance with Vol. 6, Part 95 of the current F. C. C. rules and regulations as of the date of manufacture.

UNDERSTANDING YOUR NEW 13-866

RECEIVER:

Sensitive dual conversion circuit with all crystals supplied for 23-channel reception. One microvolt sensitivity, built-in controlled squelch circuit and noise limiting give noise-free operation. Active AGC circuit eliminates fading and over driving.

TRANSMITTER:

Precision crystal-controlled oscillator circuit with all 23 Citizens Band channels built in. A maximum of TVI filtering is employed. Pi-network matching for exact loading to any standard CB antenna.

SIGNAL-TRANSMIT POWER METER:

A combination meter on the front panel provides a constant visual monitor of incoming "Signal Strength" when receiving and "Relative Output Power" when transmitting.

CONTROLS:

A full set of controls is employed including volume ON-OFF switch 23-channel selector switch, full variable squelch, public address switch and Automatic Noise Limiter switch.

PUBLIC ADDRESS SWITCH:

In the "PA" position, your transceiver is converted to a public address system. A convenient pin jack on the back panel is provided for connection to any standard 8 ohm PA speaker.

POWER SUPPLY:

The 13-866 is designed to operate on 12 volts DC. Any 12-volt automobile system is adequate. For base station application, use Midland 18-802 (optional extra) power supply which plugs into 110 volts AC and delivers 12 volts DC to your transceiver.

ANTENNA REQUIREMENT:

This transceiver will operate with any standard 52 ohm ground-plane, vertical, mobile whip, or other CB antenna. A standard SO 239 type connector is provided on the back panel for use with popular PL 259 antenna plug. An adjustable loading network is provided to match antenna impedance exactly.

FREQUENCY:

Each unit is completely equipped with crystals for operation on any of the 23 Citizens Band channels. It is not necessary to purchase any additional crystals for this unit. Refer to part 95 of the F. C. C. rules and regulations to determine which channels may be used for various kinds of communication.

MOBILE INSTALLATIONS

A location in the car or truck should be chosen carefully for convenience of operation and non-interference with normal driving functions. Mounting may be under the dash or instrument panel or any place a secure installation can be made.

GROUND INFORMATION:

NOTE

This transceiver may be installed and used in any 12 volt DC negative or positive ground system vehicle.

Most newer U.S. and foreign made cars and small trucks use a negative ground system while some older cars and some newer large trucks may use a positive ground system.

A negative ground system is generally identified by the -battery terminal being connected to the vehicle motor block, but if you cannot determine the polarity system of your vehicle, it is suggested that you contact your vehicle dealer for definite information.

NEGATIVE GROUND SYSTEM:

In the case of a negative ground system connect the red DC power cord from the transceiver to the positive or +battery terminal or other convenient point and connect the black power lead to the chassis or vehicle frame or –battery terminal.

POSITIVE GROUND SYSTEM:

In the case of a positive ground system connect the black DC power cord from the transceiver to the negative or –battery terminal or other convenient point and connect the red power lead to the chassis or vehicle frame or +battery terminal.

With regard to the connection of the power cords, it may be possible or desirable to connect the (red lead for negative ground system) or (black lead for positive ground system) to the ignition switch accessory terminal so that the transceiver is automatically turned off when the ignition switch (key) is turned off.

Alternately, the power lead may be connected to an available terminal on the fuse block or even to a point in the wiring harness. Care must be taken, however, to guard against a short circuit condition so when in doubt, please contact your vehicle dealer for specific information for your vehicle.

IGNITION INTERFERENCE:

Engine ignition interference should not be a problem and vehicles equipped with standard broadcast radios will have enough suppression to eliminate ignition interference. If interference is present, any skilled auto radio repairman should be able to eliminate it for you.

BASE STATION INSTALLATIONS

For base station use, the Midland model 18-802 power supply is recommended. When this power supply is used, simply connect the red (+) and black (−) terminals on the power supply to the (+) and (−) leads on your 13-866. Do not attempt to operate this transceiver by connecting directly to 110 Volts AC.

ANTENNA INSTALLATION

BASE STATION:

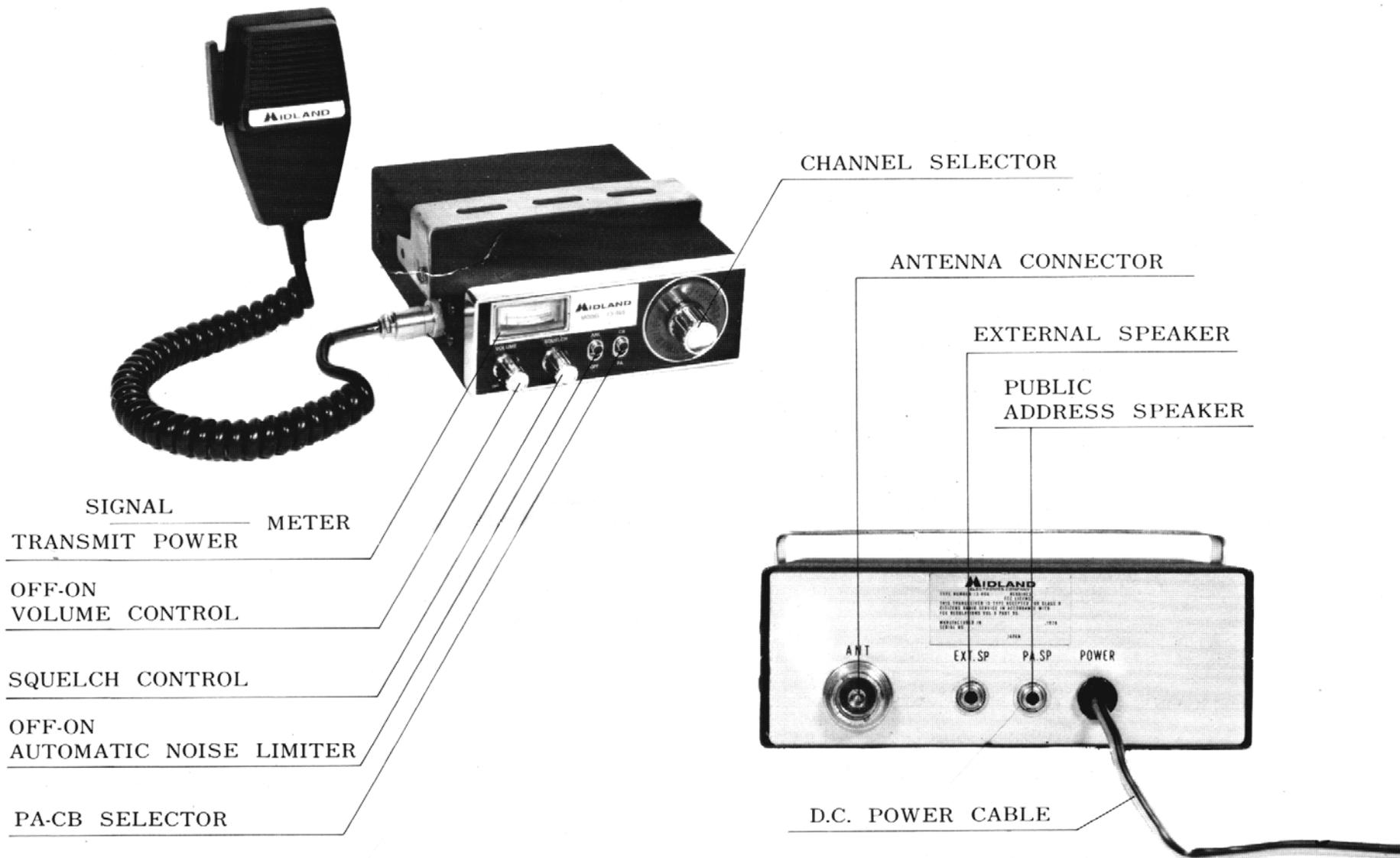
When the 13-866 is used as a base station, any Citizens Band beam, dipole, ground plane or vertical antenna may be used. A ground plane type will provide greater coverage and, since it is essentially non-directional, it is ideal in base station to mobile operation. From base station to base station, or point to point operation, a directional beam will give greater distance even under adverse conditions. The range of the transceiver depends basically on the height of the antenna and, whenever possible, select the highest location within F. C. C. limits.

MOBILE ANTENNAS:

A vertical whip antenna is best suited for mobile use.

A non-directional antenna must be used for best results in any case. The base loaded whip antenna will normally provide effective communication. For greater range and more reliable operation, a full quarter-wavewhip should 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 cable termination.

OPERATION OF CONTROLS



VOLUME CONTROL AND OFF-ON SWITCH:

The volume control varies the sound output of the loudspeaker. It also functions as an OFF-ON switch. Clockwise rotation increases volume.

CHANNEL SELECTOR SWITCH:

Tuning the receiver and transmitter is simultaneous by rotating the 23 channel selector switch. Set the switch to the desired channel 1 to 23 as indicated directly on the switch knob.

SQUELCH CONTROL:

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.

PUBLIC ADDRESS SWITCH:

In the "PA" position, your transceiver is converted to a public address system. A convenient pin jack on the back panel is provided for connection to any standard 8 ohm PA speaker.

A.N.L. SWITCH

The automatic noise limiter is designed to reduce excessive noise such as ignition, motor and electrical interference. At "ANL" position, it operates.