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SSBCO Lancer 23 Owner's Manual

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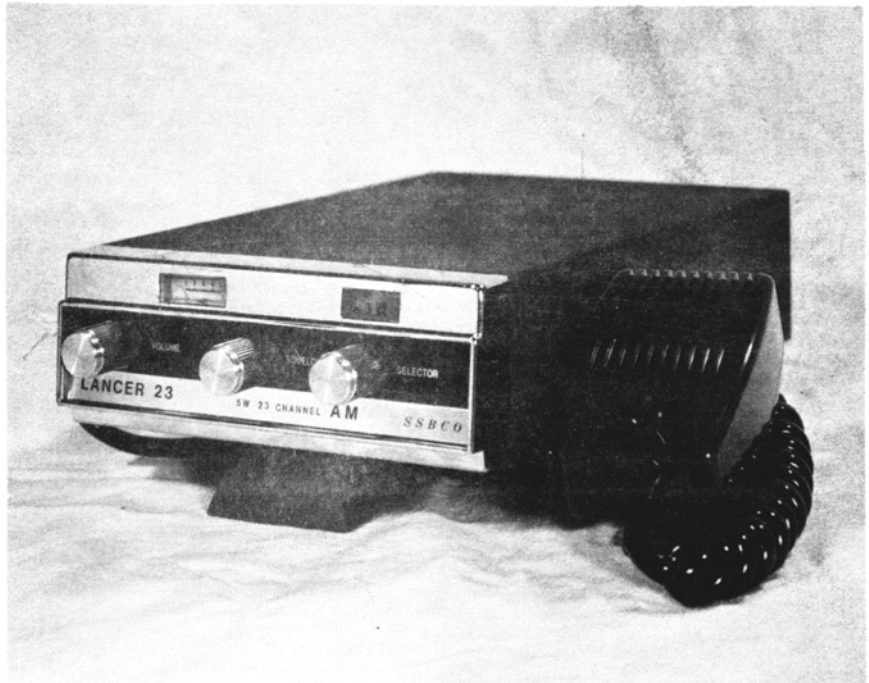
"LANCER 23" Citizen's Band Transceiver

Introducing the "LANCER 23" twenty three channel crystal controlled Citizen's Band Transceiver by SSBCO.

The "LANCER 23" is a low cost unit offering features usually found only in much higher priced transceivers.

Attractively styled front panel features an illuminated "S" meter and channel position indicator. Controls include VOLUME/OFF, SQUELCH, & SELECTOR.

Supplied complete with dynamic microphone, all 23 crystals, and mounting kit. Ready to install.



SPECIFICATIONS

GENERAL:

Frequency Range: 26.965 to 27.255 Megahertz
Channels: 23; All crystals supplied
Dimensions: 2" high X 6" wide X 9" deep
Weight: 4 pounds
Microphone: Dynamic, 600 ohms, Push-to-talk.
Coil cord with plug connector
Circuit: 28 Solid-state devices
Frequency Stability: .005 percent
Power: 13.8 Volts, D.C.
Receive Current Drain: 0.2 Amperes
Transmit Current Drain: .75 Amperes(No Mod.)
1.5 Amperes(Full Mod.)

RECEIVER:

Sensitivity: 0.5 Microvolt for 10 Db. S/N Ratio
50 Db. down at + or - 10 KHz.
Spurious Rejection: Greater than 50 Db.
Audio Output: 2 Watts
Squelch Threshold: 0.5 Microvolts
Noise Limiter: Series type
Circuit: Super-hetrodyne, dual conversion,
with mechanical filter

TRANSMITTER:

Emission: 8A3
RF Power: Input: 5 watts at 13.8 volts
Output: 3.5 watts typical @ 13.8 V.
Spurious Radiation: More than 50 Db. below
level of carrier
Modulation: High level class "B"

INSTRUCTION MANUAL
FOR
LANCER - 23
SOLID STATE
23 CHANNEL
CITIZENS BAND TRANSCEIVER

CONTROLS AND FEATURES:

1. Volume On-Off Control
2. Squelch Control
3. 23 Channel Selector
4. Microphone, Dynamic 600 Ohm, push-to-talk
5. 2-Way Meter
 - a. "S" Meter on Receive
 - b. Relative Power Output on Transmit
6. Illuminated Dial and Meter

The transceiver has been designed for use in class "D" operation in the 11 meter citizens radio service. It is designed to meet the Federal Communications Commission requirements applicable to equipment operating in Class "D" service and not to be used for any other purpose. Part 95 (formerly Part 19) of the F. C. C. regulations defines operation in this service, and you are required to read and understand these regulations prior to operating this equipment. Copies of Manual VI (covering the F. C. C. regulations for Amateur and Citizen's Band Radio Service) include Part 95 and are available for \$1.25 from the Supt. of Documents, U. S. Govt. Printing Office, Washington 25, D. C. You are also required to submit a completed copy of F. C. C. Form 505 prior to operating this equipment on the air. **YOU WILL BE IN VIOLATION OF PART 95 OF THE REGULATIONS IF YOU OPERATE THIS EQUIPMENT ON THE AIR PRIOR TO RECEIVING YOUR LICENSE AND CALL SIGNS.**

WARNING: Off-frequency operation is a serious violation of F. C. C. rules. Any alteration of the circuits in this transceiver may cause off-frequency operation in violation of the rules.

OPERATING INSTRUCTIONS

Receiver Operation

Volume Control and Power Switch: Varies the sound output from the speaker. The control also incorporates an on-off switch. Push for on-off.

Squelch Control: May be used to reduce excessive noise and unwanted signals. Turn up the volume until noise or signal is heard. The squelch control must be set when only noise (no signal) is heard. When only noise is present, turn the squelch control slowly clockwise to the point where the noise just disappears.

The receiver is now properly adjusted so that transmitted signals will be heard but the receiver will be quiet between transmissions. Do not turn the squelch control further than is necessary to just quiet the noise as this would result in weak signals being missed that might otherwise be heard.

Channel Selector Switch: Selects any of the available 23 channels for both receiver and transmitter as indicated in dial window.

Meter: The meter will indicate the relative strength of the received signal and transmitter output; it is switched automatically for both receive and transmit.

Transmitter Operation

Be sure that the unit has an adequate ground. One of the antenna systems discussed in the section on installation should be connected. Plug the microphone into the jack provided on the front panel.

The crystal controlled transmitter may be operated on any of the 23 channels assigned by the F. C. C.

Transmitter Operation (Continued)

To transmit, push the switch of the microphone and hold it in that position. Talk directly into the microphone. Release the switch to receive. The transceiver will not function as a receiver unless the switch is released.

The transceiver incorporates a circuit for indicating relative r. f. power output to the antenna.

To Transmit:

1. Set the channel selector switch to the required position for transmission on the desired channel.
2. Hold the microphone 2 to 4 inches away and speak in a normal tone of voice. Speak clearly and slower than you would normally. Release the microphone switch at the completion of your message.

Transmissions should be as brief as possible and only made after due consideration for others using the same channel. You should remember, too, that the person who is transmitting cannot hear the comments made by the listener since the receiver at the transmitting end is inoperative when the transmitter is being used.

NOTE: Transmitter adjustments must not be made except by holder of F. C. C. Commercial 1st or 2nd Class Radio Telephone Licenses.

INSTALLATION

Location

Plan the location of the transceiver before starting the installation. Select a location that is convenient for operation and does not interfere with the driver or passengers in the vehicle. In automobiles, the transceiver is usually mounted underneath the dash panel.

Mounting and Connection

The Lancer 23 is supplied with a universal mounting bracket. The transceiver is held in the bracket by a set screw permitting adjustment of the most convenient position.

The bracket must be mounted with the machine screws and nuts supplied. The mounting must be mechanically strong and also provide a good electrical connection to the chassis of the vehicle. Proceed as follows to mount the transceiver:

1. Use the mounting bracket as a template to locate the position for mounting the transceiver.
2. Mark the mounting hole locations to correspond with the holes in the bracket.

Mounting and Connection (Continued)

3. Drill two clearance holes, being careful not to damage any wiring in the area. Clean the area around each hole and scrape free of paint to provide a good electrical connection between the bracket and mounting surface.
4. Mount the bracket with the machine screws and nuts supplied.
5. Slide the transceiver into place, adjust for the desired position and tighten the set screw to lock the side rails of the transceiver to the bracket.
6. Connect the antenna cable plug to the standard receptacle on the rear panel. The cable from the antenna should be terminated with a PL-259 plug which will mate with the receptacle on the transceiver.
7. Connect the DC power input wire with the fuse to 12 V DC. This wire extends out the rear of the chassis. On an automobile installation the 12 V DC is usually obtained from the accessory contact on the ignition switch. This prevents the set being left on accidentally when the driver leaves the car and also prevents operating the unit without the engine running. Locate the accessory contact on most ignition switches by tracing the power wire from the AM broadcast receiver in the car. If it is desirable to have the least voltage drop and the maximum voltage at the transceiver, run a heavy conductor from the battery terminal itself directly to the transceiver.
8. Mount the microphone bracket on the right side of the transceiver or near the transceiver, using two sheet metal screws.

ANTENNA INSTALLATION

Since the maximum allowable power input to the RF amplifier is fixed, the most important single factor determining optimum transmission is the antenna. The antenna chosen should be selected for each transceiver on the basis of the application involved.

Base Station Antenna

Antennas of the colinear, end fed vertical type, such as the Mark Beacon base station series (CBB-1, Mark 11, and Mark V) will provide good reliable coverage. This type of antenna is essentially non-directional and is ideal for applications involving fixed to mobile operation.

The range of the transceiver also has a direct bearing on the height of the antenna used. Regardless of the type chosen, always locate the antenna as high as possible, within the legal limits established by the F. C. C. (The regulations limit the height of the antenna to a maximum of 20 feet above the structure on which the antenna is mounted). It is important, therefore, to choose a location for the transceiver that is favorable to your antenna location. A long lead-in cable will introduce a certain

Base Station Antenna (Continued)

amount of power loss and should be avoided where possible unless the antenna location justifies its use. When longer lengths of cable are necessary, the RG8/U foam coax is recommended for minimum line loss.

Wherever possible, use a good ground such as a water pipe, etc.

Installation of Mobile Antenna

The antenna best suited for mobile service is a vertically polarized whip such as the MARK Heliwhip and Monopole series. (HW-11-6, SM-27A, etc.) Greater range and more reliable operation will be obtained with these high efficiency antennas.

In any mobile installation (cars, trucks, boats, etc.) an antenna system that is non-directional has to be used. Other factors likely to offset performance are lack of a good ground and ignition interference. Antennas use the metal body of the vehicle as a "ground plane". If the transceiver is not mounted to any metal surface, it will be necessary to run a separate ground wire from the unit to a good metal ground in the vehicle. If installed in a boat, the transceiver will not operate at maximum efficiency without a ground system, unless the vessel has a steel hull.

The antenna lead-in cable, RG58/U, or RG8/U, should be terminated with a PL-259 connector. This will mate with the receptacle located on the transceiver which is a UHF SO-239.

IGNITION INTERFERENCE

Engine ignition interference in a car, truck, or boat should not present a serious problem. The suppression carried out on vehicles equipped with a standard broadcast radio will normally suffice. However, if an ignition interference problem is present, a skilled auto radio repairman should be able to correct it for you by installation of interference filters on the vehicle.

WARRANTY SERVICE INSTRUCTIONS

1. Refer to the instruction manual for adjustments that may be applicable.
2. Defective parts removed from units which are within the warranty period should be sent to the factory prepaid with model and serial number of product from which removed and date of product purchase. These parts will be exchanged at no charge.
3. If the above-mentioned procedures do not correct the difficulty, pack the product securely (preferably double packed). A detailed list of troubles encountered must be enclosed as well as your name and address. Forward prepaid (express preferred) to the nearest SSBCO authorized communication service agency.

Contact your local SSBCO Distributor for the name and location of your nearest service agency, or write to:

Warranty Service Instructions (Continued)

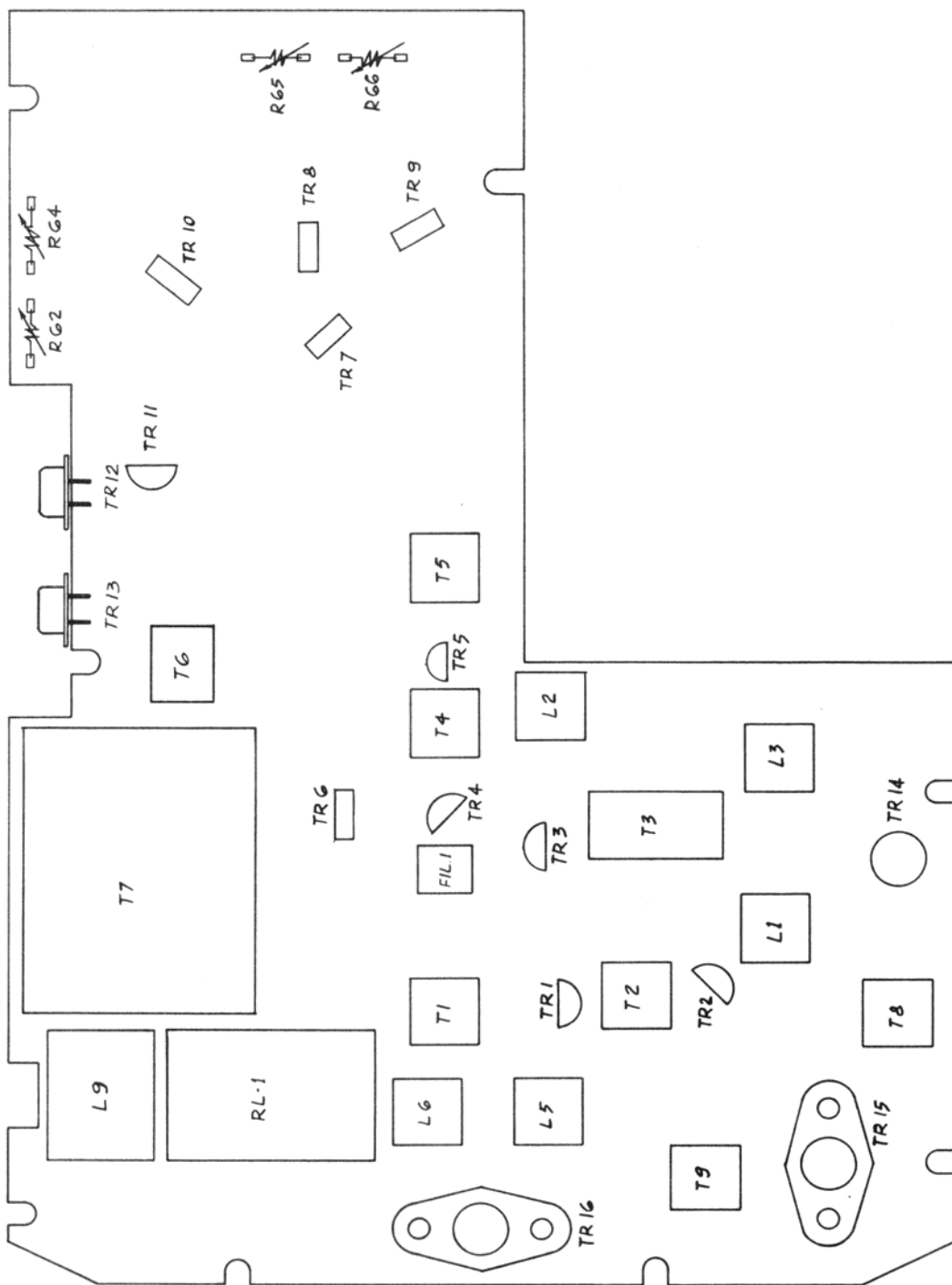
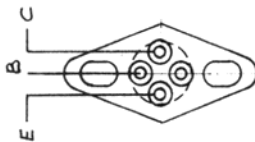
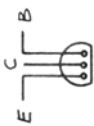
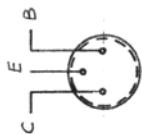
Service Department
SSBCO
P. O. Box 45101
Chicago, Illinois 60645

Warranty:

"SSBCO warrants that each product manufactured by it will be free from defects in material and workmanship under normal usage and service for a period of ninety days after its purchase new from an authorized SSBCO distributor. Our obligation under this warranty is limited to repairing or replacing any product or component which we are satisfied does not conform with the foregoing warranty and which is returned to our factory or our authorized service contractor, transportation prepaid, and we shall not otherwise be liable for any damages, consequential or otherwise. The foregoing warranty is exclusive and in lieu of all other warranties (including any warranty of merchantability) whether expressed or implied.

Such warranty shall not apply to any product or component (1) repaired or altered by anyone other than SSBCO or its authorized service contractor, without SSBCO's prior written approval. (2) Tampered with or altered in any way or subjected to misuse, negligence or accident. (3) Which has the serial number altered, defaced or removed; or (4) which has been improperly connected, installed or adjusted otherwise than in accordance with SSBCO's instructions. SSBCO reserves the right to discontinue any model at any time or change specifications or design without notice and without incurring any obligation. The warranty shall be void and there shall be no warranty of any product or component if a SSBCO warranty registration is not properly completed and postmarked to the SSBCO factory within five days after the purchase of the product new from an authorized SSBCO distributor."

TRANSISTOR TERMINAL CONFIGURATION



LANCER - 23
COMPONENT LOCATION DIAGRAM