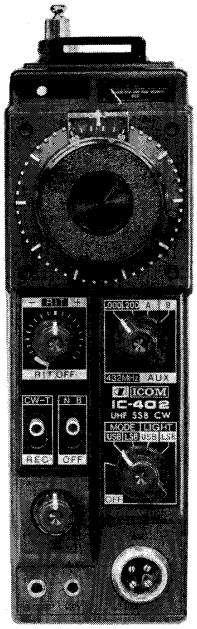
IC-402

430MHz SSB CW TRANSCEIVER

INSTRUCTION MANUAL



ICOM

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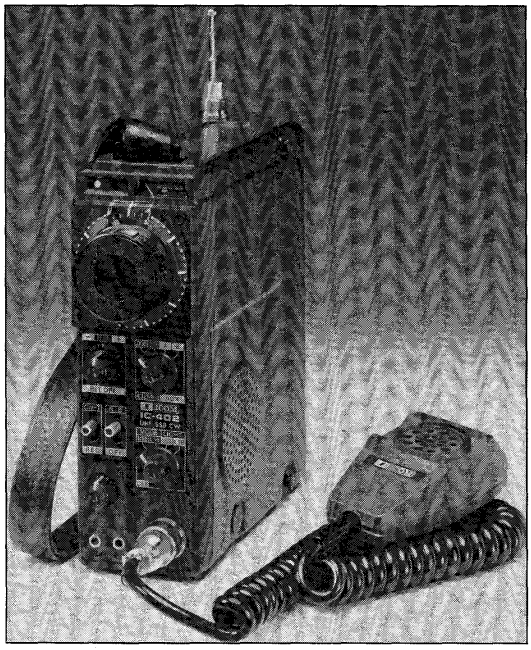
SECTION 1 INTRODUCTION

Congratulations on the purchase of the IC-402 portable 70cm SSB transceiver. The IC-402 was designed to be operable anywhere like most portables, but we also included features found in most base sets like a very effective noise blanker, RIT, S & RF meter, CW monitor, and a full 3 watts output on either USB or LSB. Two built-in crystals and the stable VXO allow operation between 432.00 and 432.40MHz. If you wish to expand the range of the IC-402, we have also provided 2 spare crystal sockets for your convenience. With a slight retuning of the IC-402, and installation of a crystal, you may also work through OSCAR in USB for up-link (for mode B of AMSAT OSCAR 7) and in LSB for down-link (for mode J of AMSAT OSCAR 8).



The aluminum die cast frame provides a very strong yet light housing for the 2 circuit boards, and the aluminum sides snap off easily if service is ever necessary or to change batteries.

The IC-402 operates on 9 inexpensive C cell batteries, or an external 13.8V DC source. The IC-402 will also operate on nicad batteries, contained in the BC-20/BC-15 nicad battery/ charger kit. For AC operation, we recommend the IC-3PS which not only provides power for the IC-402, but also doubles as a stand and holder for the IC-30L 10 watt linear amplifier.

You can use the built-in whip antenna for portable use, or an external antenna connects to the antenna connector with adapter instead of the whip antenna of the IC-402.

We are sure that you will have years of lasting enjoyment from your IC-402, manufactured by the leader in communication equipment: ICOM INCORPORATED.

SECTION II SPECIFICATIONS

General:

Number of Semi-conductors	Transistors	36
	FET	7
	IC	6
	Diodes	59
Frequency Coverage	430.0 ∿ 435.2MHz	
Frequency Stability	Less than 200Hz per hour at +25°C	
Antenna Impedance	50 ohms unbalanced	
Power Supply Requirements	DC 13.8V ±15% Negative Ground 1A max.	
Current Drain	Transmitting:	A3J Approx. 670mA
		A1 Approx. 930mA
	Receiving:	At max audio approx 320mA
		With no signal approx 100mA
	Dial Light:	Approx 40mA
Dimensions	183mm (H) x 61mm (W) x 162mm (D)	
Net Weight	2.0kg including batteries.	

Transmitter:

Emission Mode	A3J (USB, LSB) and A1
RF Power Output	A3J 3W (PEP)
	A1 3W
Carrier Suppression	More than 40dB below peak power
Unwanted Sideband Suppression	More than 40dB down at 1000Hz AF input
Spurious Radiation	More than 60dB below peak power
Microphone	Impedance: 600 ohms
	Input level: 10mV typical
	Dynamic or optional Electret condenser microphone
CW Monitor	Built-in. Audio level adjustable by VOL knob.

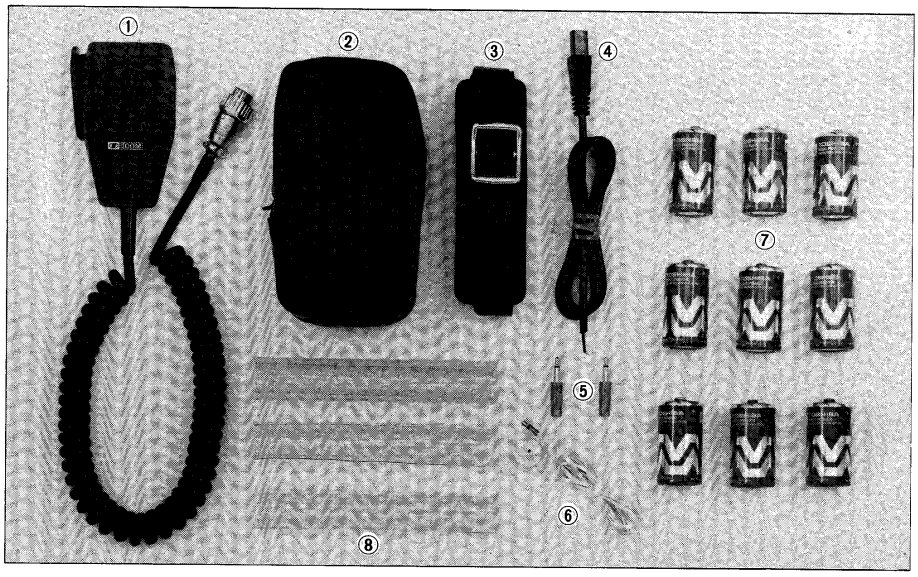
Receiver:

Receiving System	Dual Conversion Superheterodyne
Intermediate Frequency	1st: 57.6 ∿ 57.8MHz
	2nd: 10.74MHz
Spurious Response Rejection Ratio	More than 60dB
Sensitivity	Less than 0.5μV for 10dB S+N/N
Selectivity	±1.2KHz at −6dB
	±2.4KHz at −60dB
Audio Output	More than 1W
Audio Output Impedance	8 ohms

432.00∿432.40MHz built-in (2 crystals). Each crystal gives 200KHz continuous coverage. Two spare crystal sockets are provided for additional frequency ranges between 430.00∿435.20MHz.

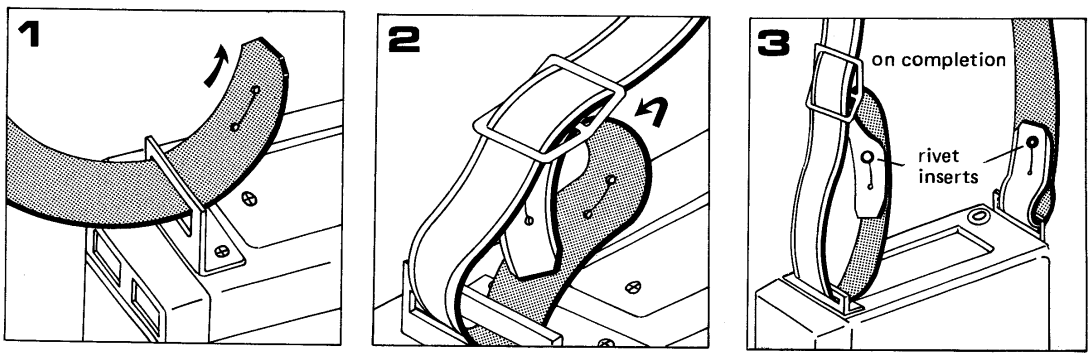
SECTION III ACCESSORIES

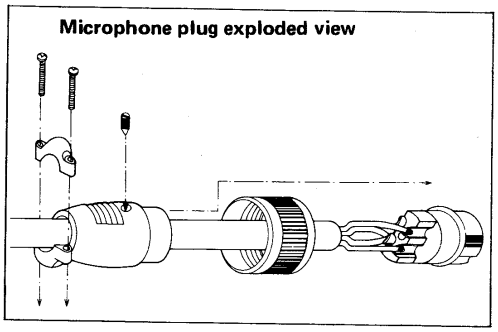
Various accessories are packed with your transceiver. Be sure not to overlook anything. Also it's a good idea to keep packing cartons in case of moving or if return for service is necessary.

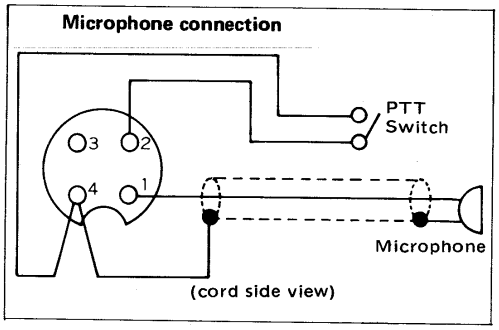


1.	Dynamic Microphone	1	5.	Ext. Speaker Plug, Key Plug	2
2.	Microphone Case	1	6.	Earphone	1
3.	Shoulder Strap	1	7.	Dry Cells Type "C"	9
4.	Power Cord	1	8.	Battery Tubes	3

Shoulder strap attachment





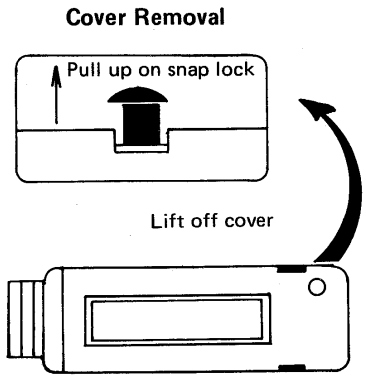


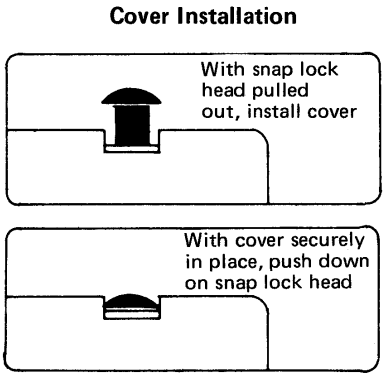
SECTION IV PRE-OPERATION

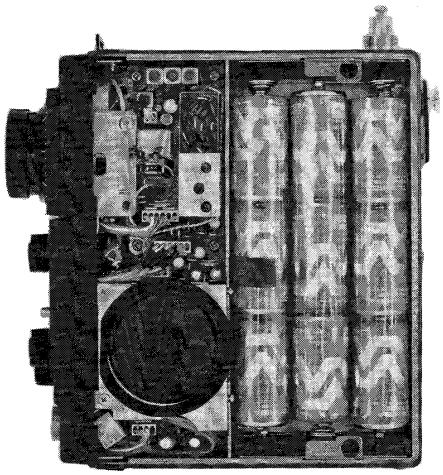
BATTERY INSTALLATION

Dry Batteries:
Place the mode switch in the OFF position. Remove the side that covers the battery case and speaker. Install the batteries into the battery tubes (three in each) taking care to observe the same direction (polarity).

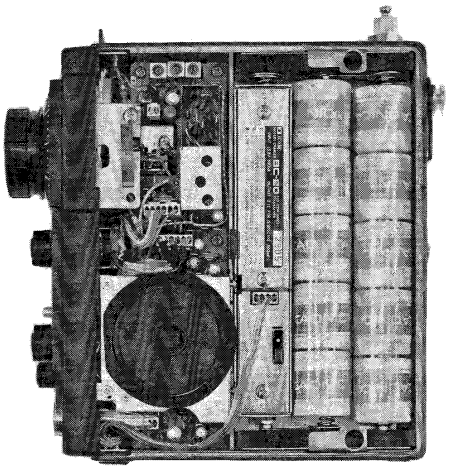
Carefully install the battery tubes in the manner shown in photograph 1, placing the last three batteries in the inner column. Again take care to observe polarity, and place the battery tubes on top of the ribbon so when the batteries need to be removed, a simple pull on the ribbon will make removal easier. With the batteries properly in place, carefully replace the side cover.







Photograph 1
Dry Batteries Installation



Photograph 2
Nickel-Cadmium Batteries and Charge (BC-20) Installation

Nickel-Cadmium Batteries and Charger: BC-20

First, install the charger in the battery case (the speaker side) of the transceiver housing as shown in photograph 2. The polarity of the switch end of the charger must be positive and on the case side, negative. Accordingly the negative polarity must be connected to the spring side of the battery case.

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