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Pearce Simpson Wildcat II Owners Manual
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WILDCAT II

SECTION 1

GENERAL INFORMATION

DESCRIPTION

Your new PEARCE-SIMPSON WILDCAT II is a compact size, high performance two-way communication instrument designed to operate on any six channels of the 27 MHz band.

WILDCAT II is small enough to install under the dash board or any other handy location in a vehicle where the bracket can be attached.

Your WILDCAT II has been completely tested and carefully tuned at the factory, therefore, no re-alignment is necessary when used with a standard 50 ohms CB antenna.

SPECIFICATIONS

GENERAL :

Channels : 6-channel crystal-controlled.
(channel 9 crystals factory installed)

Size : 4 $\frac{3}{8}$ " W \times 1 $\frac{1}{2}$ " H \times 6 $\frac{3}{8}$ " D

Weight : 2.4 pounds.

Antenna : 52-ohm coaxial.

Power Source: Input voltage - 13.8 VDC (EIA standard)

TRANSISTOR COMPLEMENT :

TR-1	2SC839	: RF Amplifier
TR-2	2SC839	: Mixer
TR-3	2SC372	: IF Amplifier
TR-4	2SC372	: IF Amplifier
TR-5	2SC372	: Local oscillator
TR-6	2SC372	: Squelch
TR-7	2SC372	: AF Amplifier
TR-8	2SC735	: AF Driver
TR-9,10	2SC1014	: AF Power
TR-11	2SC778	: RF Power Final
TR-12	2SC775	: RF Driver
TR-13	2SC735	: Transmit Oscillator
TR-14	2SB54	: Mike Amplifier

DIODE COMPLEMENT :

D-1	MDP173	: RF Switch
D-2	1N60	: Receiver RF Amplifier Protector
D-3	1N60	: Detector
D-4	MDP173	: ANL Gate
D-5	1N60	: S Meter Detector

D-6	1N60	: RF Power Detector
D-7	HZ7	: Receiver Voltage Regulator
D-8	MV3 (Varistor)	: Bias

RECEIVER:

Sensitivity	: 1 μ V or better for 500mW output, 10 dB S/N.
Selectivity	: 40dB down at \pm 10 KHz.
Squelch Sensitivity	: 1 μ V.
Audio Output Power	: 0.7-watt.
Speaker	: 3" dynamic, 8-ohm.

TRANSMITTER:

Frequency	: 6 channels on 27 MHz.
Frequency Tolerance	: \pm 0.005%.
Spurious Suppression	: Better than 50dB.
Bandwidth	: Not to exceed 8 KHz.

DO NOT TRANSMIT WITH YOUR EQUIPMENT UNTIL YOU HAVE RECEIVED YOUR LICENSE FROM THE FCC. Illegal operation can result in severe penalties.

Be sure that you have read and understand Part 95 of the FCC Rules and Regulation before operating your station.

SECTION 2

INSTALLATION & INITIAL ADJUSTMENT

IMPORTANT

BEFORE DISCARDING ANY OF THE PACKING MATERIALS, EXAMINE THEM CAREFULLY FOR ITEMS YOU MAY HAVE OVERLOOKED.

MOBILE STATION INSTALLATION

For mobile installation, the mounting cradle serves as a means of mounting your WILDCAT II in any position and attitude which will be convenient to the user. After you have determined the most convenient location in your vehicle, hold the WILDCAT II, mounted in the cradle, in the exact location desired. If nothing will interfere with mounting it in the desired position, remove the cradle from the WILDCAT II and use it as a template to mark the location for the mounting bolts. Before drilling the holes, make sure nothing will interfere with the installing of the mounting bolts.

POWER CONNECTION

The red power lead is to be connected to the positive terminal of the battery. The black lead is to be connected to ground. (The radio is reverse polarity protected. If you make a mistake in connecting the power leads, the radio will not be damaged. It will be inoperative until the power is connected correctly.) If existing wiring is used, be sure that it is heavy enough to prevent voltage drop to the radio. A good source of positive battery voltage is at the accessory connection on the ignition switch. Using this as a power source insures the radio will be off when the ignition switch is turned "OFF", and power will be supplied to the radio when it is in the "ON" or "ACCESSORY" position.

ANTENNAS

Connect the antenna cable to the back of the unit, using a plug type PL259. The antenna cable should be low loss cable such as type RG-58/A-U.

For maximum range and reliable operation, the antenna should be as high as legally possible. We recommend a co-linear antenna or ground plane type for best results in nondirectional use and a citizens band beam antenna for directional purposes. The mobile antenna requires a non-directional type. ALL PEARCE-SIMPSON CB base and mobile antennas will result in maximum performance from the WILDCAT II.

CRYSTAL INSTALLATION

1. Remove the unit from the mount. Disconnect the power lead and antenna cable at the rear of the unit.
2. Remove four screws from the sides of the bottom cabinet. (speaker-mounted side) Carefully disassemble the cabinet. Remove speaker leads from the printed circuit board.
3. The crystal sockets are marked A.B.C.D.E. & F. They are also indicated as "RX" (receiving crystal) and "TX" (transmitting crystal). See figure 1 below.
4. Be careful when installing additional crystals. Using too much pressure may damage the crystal case and ruin the crystal element contained therein.
5. When crystal installation is completed, reconnect speaker leads, re-install the chassis in the cabinet, and tighten the cabinet screws. Connect the antenna and power lead in the same manner as previously connected. Now the unit is ready for operation. Avoid operating the unit on a channel position which has no crystal inserted.

CRYSTAL SOCKET LAYOUT

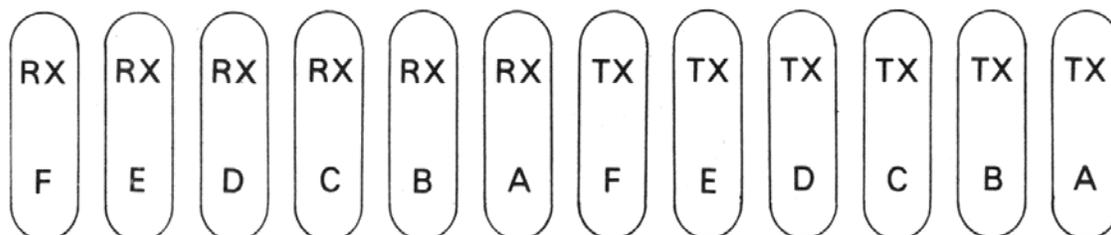


Figure 1.

SECTION 3 OPERATING INSTRUCTIONS

CONTROLS AND INDICATORS

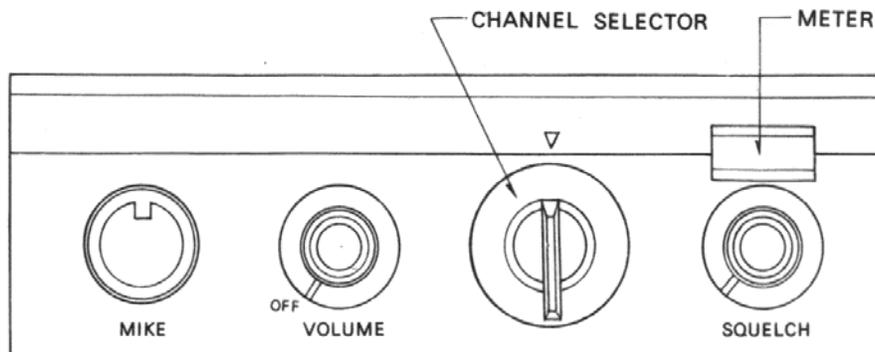


Figure 2.

FUNCTION OF CONTROLS

VOLUME CONTROL AND ON-OFF SWITCH:

This control turns the power ON and OFF and adjusts the loudness of received signals.

SQUELCH CONTROL:

The Squelch Control is used to silence background noise (atmospheric or man-made noise) in the absence of a received radio signal. In the full counterclockwise position, the WILDCAT II is unsquelched (no noise silencing at all). In the fully clockwise position, the unit is squelched for even very strong signals.

CHANNEL SELECTOR:

The Channel Selector Switch is used to select any desired one of six available channels.

PEARCE-SIMPSON'S EXCLUSIVE FIVE-WAY METER:

This meter is exclusively designed by Pearce-Simpson to work in five different ways. Those functions are as follows:

1. An indicator of the received signal.
2. An indicator of RF output power.
3. A receiver-on indicator: When the receiver is on, the meter lights up in amber color.

4. A transmitter-on indicator: When the transmitter is on, the meter lights up in red color.
5. Modulation indicator: The meter fluctuates in brilliant red when the transmitter is modulated.

OPERATING THE WILDCAT II

CAUTION

DO NOT PUSH TRANSMIT SWITCH WITHOUT FIRST CONNECTING A 52-OHM ANTENNA OR DUMMY LOAD.

Rotate SQUELCH CONTROL fully counterclockwise.

Rotate the VOLUME CONTROL clockwise, to apply power, and advance the VOLUME CONTROL until noise or signal is heard in the speaker. (Since your WILDCAT II uses all transistors, no warmup time is required.)

With no signal present, rotate the SQUELCH CONTROL clockwise to a position in which no noise is heard. Advance this control only far enough to prevent noise from being heard. Advancing it too far may result in a weak station being unable to open the squelch. Since the squelch has been adjusted, with no signal present, then when a station transmit on the channel to which your WILDCAT II is tuned, the squelch circuit will open and the station will be heard. When the station stops transmitting and no signal is received, the squelch gate will be closed and all sound will be "Turned OFF". Sometimes noise will build up as a result of a passing truck, etc. If this happens, the SQUELCH CONTROL should be advanced just far enough to keep the circuit closed during these noise peaks.

Rotate the CHANNEL SELECTOR to the desired channel.

Adjust the volume as desired for the station you are receiving. To transmit, hold the microphone 2 to 3 inches from your mouth. Normally, it is best to hold it so that you talk across it rather than directly into it. This will prevent the sound of your breathing being transmitted. Hold the Push-to-Talk button on the microphone in, and speak at a normal conversational level.

When your transmission is completed, release the button on the microphone and listen for the reply.

SECTION 4

REPLACEMENT PARTS

CAPACITORS

SYMBOL	DESCRIPTION
C-1	30 pF 50VDC Mica
C-2,3,4,6,21,23,27,28, 32,33,35,36,41,51,55, 57,63,65,70,72	0.01 μ F 25VDC Disc
C-5,15,22	3.3 μ F 16VDC Electrolytic
C-7,8,11,13,16,19,30,58	0.04 μ F 25VDC Disc
C-9	500 pF 125VDC Styrol
C-10,14,18,68	0.02 μ F 25VDC Mylar
C-12,17,31,46,47,48,67	0.04 μ F 25VDC Mylar
C-20,37,38,69	10 μ F 16VDC Electrolytic
C-24,42,44	0.1 μ F 25VDC Mylar
C-25,26,39,62,71,73,	1 μ F 16VDC Electrolytic
C-29	1 pF 50VDC Disc
C-34,54	130 pF 50VDC Mica
C-40,43,45,50	100 μ F 16VDC Electrolytic
C-49	470 μ F 16VDC Electrolytic
C-52	5 pF 50VDC Disc
C-53	39 pF 50VDC Mica
C-56	180 pF 50VDC Mica
C-59	330 pF 50VDC Mica
C-60	470 pF 50VDC Mica
C-61	10 pF 50VDC Mica
C-64	22 pF 50VDC Mica
C-66	100 pF 50VDC Mica

RESISTORS

SYMBOL	DESCRIPTION
R-1,3,7,15,33,52,53	680 Ohms, 1/4Watt
R-2,8,11,16,28	470 Ohms, 1/4Watt
R-4	33 Ohms, 1/4Watt
R-5,44,45,64	1.5K Ohms, 1/4Watt
R-6,9	4.7K Ohms, 1/4Watt
R-10,23,25,31,32,47,48, 60,63	1K Ohm, 1/4Watt
R-12,14,20,21,30,46,61	5.6K Ohms, 1/4Watt
R-13,56	33K Ohms, 1/4Watt
R-17,41,49	3.9K Ohms, 1/4Watt
R-18	47K Ohms, 1/4Watt
R-19,43,65,66	3.3K Ohms, 1/4Watt
R-22,29,62,67	10K Ohms, 1/4Watt

REPLACEMENT PARTS

RESISTORS

SYMBOL	DESCRIPTION
R-35	18K Ohms, 1/4Watt
R-36	680 Ohms, 1/4Watt
R-38	4.7K Ohms, 1/4Watt
R-40	22K Ohms, 1/4Watt
R-42	1K Ohm, 1/4Watt
R-54	0.5 Ohms, 1/4Watt
R-57	47 Ohms, 1/4Watt
R-58	10 Ohms, 1/4Watt

SEMICONDUCTORS

SYMBOL	DESCRIPTION	PART NUMBER
TR-1	2SC839 RF Amplifier	5001-014
TR-2	2SC839 Mixer	5001-014
TR-3,4	2SC372 IF Amplifier	5001-020
TR-5	2SC372 Local Oscillator	5001-020
TR-6	2SC372 Squelch	5001-020
TR-7	2SC372 AF Amplifier	5001-020
TR-8	2SC735 AF Driver	5001-021
TR-9,10	2SC1014 AF Power	5001-010
TR-11	2SC778 RF Power Final	5001-008
TR-12	2SC775 RF Driver	5001-007
TR-13	2SC735 Transmit Oscillator	5001-021
TR-14	2SB54 Mike Amplifier	5001-035
D-1	MDP173 RF Switch	5001-103
D-2	1N60 Receiver RF Amplifier Protector	5001-080
D-3	1N60 Detector	5001-080
D-4	MDP173 ANL Gate	5001-103
D-5	1N60 "S" Meter Detector	5001-080
D-6	1N60 RF Power Detector	5001-080
D-7	HZ7 Receiver Voltage Regulator	5001-104
D-8	MV3 Bias (Varistor)	5001-105

INDUCTANCE

SYMBOL	DESCRIPTION	PART NUMBER
L-1,4	NCW-04 Filter	5006-084
L-2	NS-1448 Filter	5006-082
L-3	NS-1344 Filter	5006-083
L-5,8	NS-1373 RF Choke	5006-085
L-6	LF4-010K RF Choke	5006-086
L-7	84C Power Choke	5007-007

REPLACEMENT PARTS

TRANSFORMERS

SYMBOL	DESCRIPTION	PART NUMBER
T-1	113CN-2639AQ Receiving Antenna	5006-074
T-2	113CC-2638AQ Receiving RF	5006-075
T-3	LPN-5944BM 1st IF	5006-077
T-4	LLC-3657 2nd IF	5006-078
T-5	LLC-4990A2 3rd IF	5006-079
T-6	113CC-2448BM Receiving Oscillator	5006-076
T-7	58M AF Input Transformer	5007-015
T-8	104 AF Output Transformer	5007-016
T-9	B22 Transmitting Buffer	5006-081
T-10	B-21 Transmitting Oscillator	5006-080

VARIABLE RESISTORS

SYMBOL	DESCRIPTION	PART NUMBER
VR-1	V16S-SB12 5K Ohms A Variable	5008-019
VR-2	VM10A 10K Ohms B Variable	5008-020
VR-3	6BM 5K Ohms B Semi-fixed	5008-009
VR-4	6BM 10K Ohms B Semi-fixed	5008-007

SWITCHES

SYMBOL	DESCRIPTION	PART NUMBER
S-1	V16S-SB12 5K Ohms A Power ON-OFF	5008-019
S-2	MSB2.6 Channel Rotary	5009-012

CRYSTALS

SYMBOL	DESCRIPTION	PART NUMBER
TX	HC-25U 27.065 MHz	0524-9
RX	HC-25U 26.610 MHz.	0525-9

METER

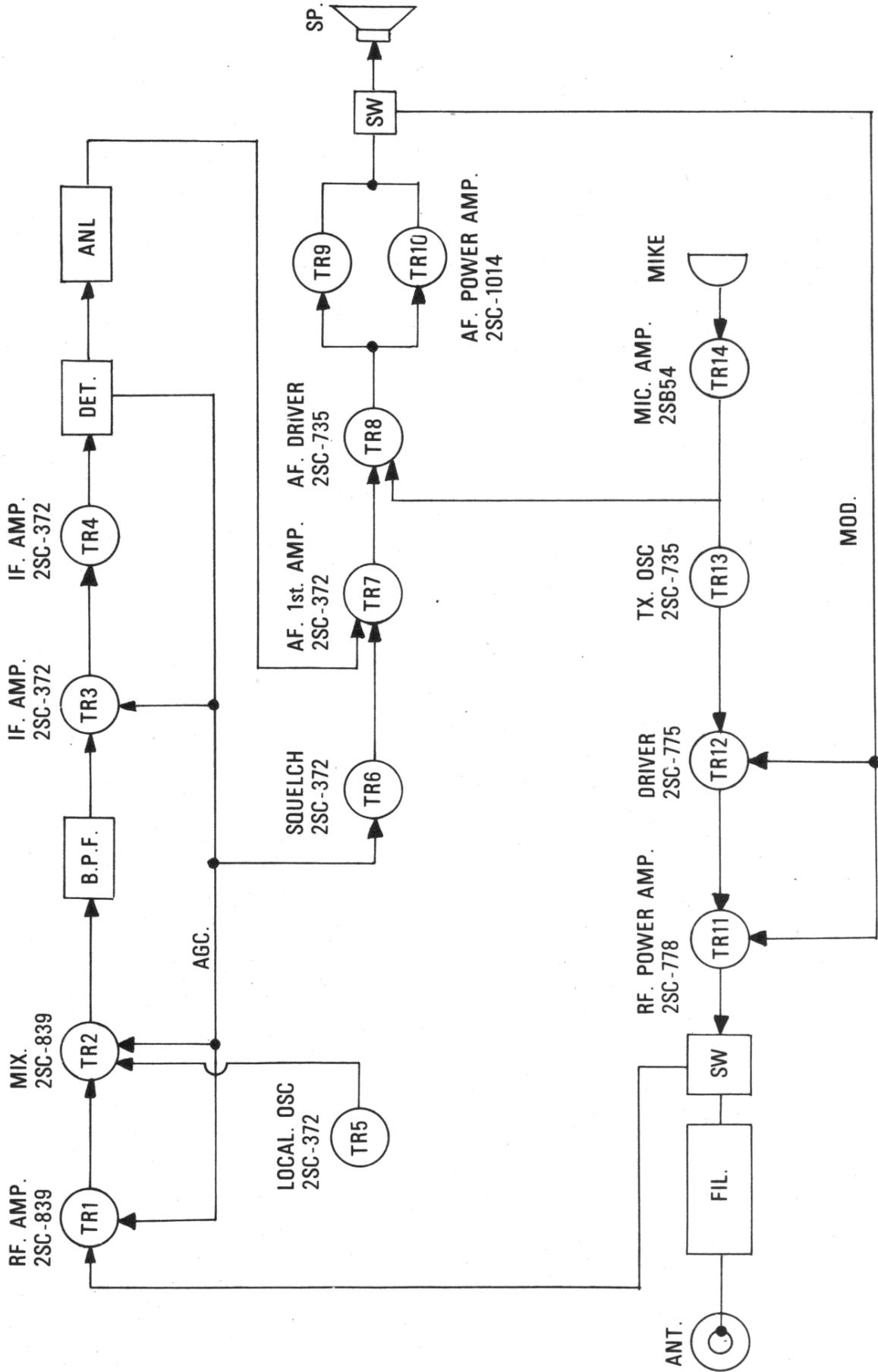
SYMBOL	DESCRIPTION	PART NUMBER
M	Type 21 Pearce-Simpson's Five Way Meter	5014-007

REPLACEMENT PARTS

MISCELLANEOUS

	PART NUMBER
Speaker 8 Ohms, 0.8 Watt	5012-006
Crystal Socket S-DO105	5010-002
Ext. Power Connector CN-3795	5010-011
Ext. Antenna Connector M-R	5010-009
Ext. Microphone Connector 6-P Din Type	5010-028
Dynamic Microphone 22-115-25	5004-008
Ext. Microphone Plug 6-P Din Type	5010-023
Fuse Holder RF-013	5029-001
Fuse 2-Amp.	— —
Ext. Power Cord	5015-004
Front Panel	5020-012
Metal Cabinet Complete Top	5020-013
Metal Cabinet Complete Bottom	5020-014
Volume & Squelch Control Knobs	5022-018
Channel Selector Knob	5022-017
Mounting Bracket	5025-006
Front Plate	5027-017
FCC Plate	5027-018
Styrofoam Box	5030-013
Display Box	5030-014
Instruction Booklet	5031-007
Pilot Lamp Yellow	5013-008
Pilot Lamp Red	5013-009

WILDCAT II BLOCK DIAGRAM



FACTORY WARRANTY POLICY

This electronic equipment, manufactured by Pearce-Simpson, Inc., is warranted in accordance with the following terms and conditions —

A. PEARCE-SIMPSON, INC. WILL:

Replace any defective part of this equipment during the 90 day period following purchase.

Repair, at our factory, without charge, this equipment, if a defect develops during the first 90 days following purchase. (This repair service is free only at the factory. No reimbursements can be made for non-factory repair charges.)

B. THE PURCHASER WILL:

Return the warranty registration card within 10 days of purchase.

Pay all transportation charges involved when equipment is returned for factory repair, provide information regarding nature of failure, and accept freight collect shipment of repaired equipment.

The above is void if equipment is modified or repaired without authorization, subjected to misuse, abuse, accident, water damage or other neglect, or has its serial number defaced or removed, or if more than 18 months has elapsed since factory shipment date to dealer.

No obligation is assumed by Pearce-Simpson, Inc., to update previously manufactured equipment.

This warranty is in lieu of all other warranties expressed or implied and no representative or person is authorized to assume for us any other liability in connection with the sale of our products.

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